

# The University of South Carolina

## 2020-2021 Graduate Bulletin

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# GRADUATE

## Welcome to the Graduate Studies Bulletin

The Graduate Studies bulletin is the official document of record concerning graduate academic programs and regulations.

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#### Which Bulletin Should You Use?

A graduate student may expect to be allowed to obtain a degree in accordance with requirements in force at the time he or she enters the degree program at the University, or under subsequent regulations published while enrolled in that degree program. However, a student's choice is restricted to the requirements of one bulletin. Graduate students in master's programs have a period of six years inclusive and continuous in which to claim the rights of a specific bulletin. Doctoral students have a period of eight years.

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Non-curricular information (i.e., faculty listings, contact information, college or departmental descriptive text) can be updated by contacting the Office of the University Registrar ([bulletin@sc.edu](mailto:bulletin@sc.edu)). Any material pertaining to course descriptions or curriculum changes must have the approval of the Faculty Senate, Graduate Council, Board of Trustees, and/or S.C. Commission on Higher Education before it can be published in the bulletins.

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#### Other Printed Academic Documents

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Final authority for all aspects of content rests with the Office of the Provost. All material submitted for publication in the undergraduate bulletin must be cleared through the academic editor, Sandra Kelly, vice provost and dean of undergraduate studies. For the graduate bulletin, clearance must be obtained through Cheryl Addy, vice provost and dean of the Graduate School.

Registration at the University of South Carolina assumes the students' acceptance of all published regulations, including both those which appear in this document and all others as applicable in any official announcement such as Carolina Community: Student Handbook and Policy Guide.

Official policies of the University listed below are published annually in Carolina Community.

1. Student Rights and Freedoms within the Academic Community
2. Code of Student Academic Responsibility and Procedures for Implementation of this Code
3. Grievance Policy and Procedures for Non-Academic Areas
4. University Policy on Use of Alcohol
5. University Policy on Campus Solicitation
6. University Policy on Student Patent and Copyright Matters

The University has established procedures to certify that all classroom activities are conducted by individuals with spoken and written proficiency in the English language at a suitable level. Student complaints concerning the English proficiency of an individual with classroom responsibilities should follow the grievance procedures available from the Office of the Provost.

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# THE GRADUATE SCHOOL

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### Academic Policy and Practices

Jim Mensch, Committee Chair, Exercise Science  
Marcelo Frias, Darla Moore School of Business  
Barbara Koons-Witt, Criminology and Criminal Justice  
Caryn Outten, Chemistry and Biochemistry  
Terry Wolfer, Social Work

## Grievances, Appeals and Petitions

Bobby Brame, Committee Chair, Criminology and Criminal Justice  
Nate Bell, Nursing  
Matthew Boylan, Mathematics  
Jennifer Mandelbaum, Graduate Student Association  
Carmen Maye, Journalism and Mass Communications

## Fellowships and Scholarships

Jean Ellis, Committee Chair, Geography  
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Kirk Foster, Social Work  
Jim Mensch, Exercise Science  
Mary Styslinger, Instruction and Teacher Education  
Songhua Xu, Integrated Information Technology  
Heather Brandt, Graduate School  
Wright Culpepper, Graduate School

The *Graduate Studies Bulletin* is the official manual of regulations and guidelines for graduate study at the University of South Carolina. Its contents are approved by the Graduate Council and the dean of the Graduate School and supersede any conflicting information that may appear in a publication of an individual program at the University. Graduate students are expected to read and adhere to the regulations of this publication throughout their matriculation at the University. Students are bound by the *Graduate Studies Bulletin* in effect at the time they begin or renew their enrollment in the Graduate School. Change to a later *Graduate Studies Bulletin* requires permission of the program and the dean of the Graduate School.

## Mission Statement

The Graduate School at the University of South Carolina is a service unit committed to enhancing the experience of graduate students and the faculty and staff with whom they work. We provide timely, consistent, and accurate information; adapt and enforce meaningful policies to ensure academic integrity; track student success; and build bridges across campus and community as we showcase our diverse and talented graduate student body.

## Vision Statement

An innovative, flexible and dynamic organization, the Graduate School at the University of South Carolina seeks to become a collaborative guide celebrated for responsive and efficient service. We strive to provide accessible and trusted leadership to the campus and higher education communities.

## Goals

1. Better serve the needs of students, applicants, faculty, staff, and other members of the university community.
2. Provide meaningful professional development, academic enrichment activities and student services to enhance the graduate student experience.
3. Advance the reputation of UofSC as a top ranked research institution by promoting graduate education and building a collegial community of scholars.
4. Build public and university awareness of the importance and value of the Graduate School at UofSC.



## Degree Programs

The Graduate School oversees postbaccalaureate degree programs designed to give qualified individuals professional competence in specialized disciplines and trains scholars, research specialists, teachers at all levels, and experts in various professions. The term “degree program” includes programs leading to a graduate certificate, specialist, master’s, or doctoral degree. Emphasis is placed on methodology as well as on mastery of defined areas of subject matter. Graduate work brings together a group of scholars actively engaged in research and thus provides a close association between students and mature investigators with a wide range of interests. While emphasizing specialization as basic to graduate work, the Graduate School encourages interdisciplinary study as a response to the complex problems of a rapidly changing world.

The degree of Doctor of Philosophy is offered in more than 50 academic areas, while professional doctorates are offered in education, music, nursing, pharmacy, physical therapy, and public health. The University's School of Medicine offers the degree of Doctor of Medicine, the School of Law offers the degree of Juris Doctor, and the South Carolina College of Pharmacy offers the degree of Doctor of Pharmacy.

The University offers the Master of Arts, Master of Fine Arts, Master of Media Arts, Master of Science, and the Master of Arts in Teaching in several disciplines. It offers professional master’s degrees (e.g., Master of Business Administration, Master of Library and Information Science, Professional Science Master, and Master of Education) in many academic units, including arts and sciences; hospitality, retail, and sport management; business; education; engineering and information technology; mass communications and library and information studies; medicine; music; pharmacy; public health; and social work. Education Specialist degrees are available in library and information science as well as education (teaching, educational administration, and counselor education).

In addition, certificates of graduate study are offered in advanced practice nursing, applied statistics, biomedical studies, business analytics, cost management, counselor education, criminal justice leadership, cyber security studies, drug and addictions studies, enterprise resource planning systems, financial and resource management, gerontology, global strategy, health communication, higher education leadership, historical archeology and cultural resource management, human resources, international finance, library and information science, museum management, music performance, nursing administration, play therapy, psychiatric rehabilitation, public health, qualitative research, railway engineering, social and behavioral health with military members, veterans, and military families, teaching English to speakers of other languages, visual anthropology, and women’s and gender studies.

For a list of graduate programs offered on the Columbia Campus visit following link:

- Programs A-Z (p. 23)

## Graduate Dual Degree Programs

Through special formal arrangement, the University offers dual degree programs in certain areas to permit a student to work on two degrees simultaneously, resulting in the student’s taking fewer credits than the total required if each degree were pursued independently. The number of graduate credit hours required for dual degrees varies by approved dual

degree program arrangement. Students wishing to enroll in two degree programs not formally approved may apply for concurrent enrollment.

For a list of dual degree programs offered on the Columbia Campus visit the following link:

- Graduate Dual Degree Programs (p. 463)

# DEGREE REQUIREMENTS

Graduate degree programs are the certificate of graduate study, the specialist, the Master's, and the doctoral. Students enrolled in graduate programs are subject to the academic regulations and degree requirements of The Graduate School and the academic program in which enrolled.

- Certificate of Graduate Study and Specialist Requirements (p. 10)
- Doctoral Degree Requirements (p. 11)
- Master's Degree Requirements (p. 18)

## Certificate of Graduate Study and Specialist Requirements

### Certificate Programs

The Certificate of Graduate Study is a program of a minimum of 12 semester hours of graduate course work. The University of South Carolina currently offers the following certificate programs.

- Advanced Practice Nursing, Certificate
- Aging, Certificate
- Applied Statistics, Certificate
- Biomedical Studies, Certificate
- Business Analytics, Certificate
- Cost Management, Certificate
- Counselor Education, Certificate (Career Development Facilitator)
- Cyber Security Studies, Certificate
- Drug and Addiction Studies, Certificate
- Enterprise Resource Planning Systems, Certificate
- Financial and Resource Management, Certificate
- Global Health, Certificate
- Global Strategy, Certificate
- Health Care Compliance, Certificate
- Health Communication, Certificate
- Higher Education Leadership, Certificate
- Historical Archaeology and Cultural Resource Management, Certificate
- Human Resources, Certificate
- International Finance, Certificate
- Library and Information Science, Certificate
- Museum Management, Certificate
- Music Performance, Certificate
- Nursing Administration, Certificate
- Nursing Informatics, Certificate
- Play Therapy, Certificate
- Psychiatric Rehabilitation, Certificate
- Public Health, Certificate
- Qualitative Research, Certificate
- Railway Engineering, Certificate
- Social and Behavioral Health with Military Members, Veterans, and Military Families, Certificate
- Teaching English to Speaking of Other Languages, Certificate
- Women's and Gender Studies, Certificate

### Certificate Degree Requirements

At least half of the program course work must consist of required courses although all hours may be prescribed; at least half the total hours in the program of study must be in courses at the 700 level or above; and at least half of the hours required for a certificate must be University of South Carolina credits. There is no residency requirement, but all courses must be completed within six years of enrollment. The student must be enrolled for at least 1 credit during the term of graduation.

### Certificate Program of Study

A program of study is a list of courses that satisfy the requirements for the certificate. Every degree-seeking student, including students enrolled in a certificate program, must complete a program of study (POS) form approved and signed by student's academic advisor, and approved by the graduate director of the program that administers the certificate and the dean of the Graduate School. The signed POS is sent to the Graduate School and placed in the student's file. This formal agreement serves a number of purposes that benefit both the student and the University. It causes the student and advisor to engage in early planning with a specific goal in mind; it provides information on program requirements and for the planning of course offerings; it facilitates subsequent advisement; and it protects the student in the event of unexpected curriculum or faculty changes. The student must file a completed POS form prior to graduation. If necessary, an approved program of study can be modified with a Request for Program Adjustment (G-RPA ([http://www.sc.edu/study/colleges\\_schools/graduate\\_school/forms\\_library/](http://www.sc.edu/study/colleges_schools/graduate_school/forms_library/))) form.

### Transfer Credit

Course work not part of a completed certificate program or graduate degree from USC or another institution may be transferred for credit toward a Certificate of Graduate Study or Specialist Degree. No more than 6 hours of credit may be transferred into graduate programs of 12 to 17 hours; no more than 9 hours of credit may be transferred into graduate programs of 18 or more hours. Only credits with grades of B or better (equivalent to 3.0 on a 4.0 grading scale) may be transferred from another institution into a Certificate or Specialist program

Course work transferred for credit toward a Certificate of Graduate Study or Specialist Program must be from an accredited institution and must be no more than six years old at the time of graduation.

Course work transferred from another institution for credit toward a graduate certificate or specialist program must be relevant to the program and have course content and a level of instruction equivalent to that offered by the University's own graduate programs. Approval for acceptance of transfer credit to a student's program of study must be approved and justified by the student's academic department and submitted to the dean of the Graduate School for final approval on the request for transfer of academic credit (G-RTC ([http://www.sc.edu/study/colleges\\_schools/graduate\\_school/](http://www.sc.edu/study/colleges_schools/graduate_school/))) form.

## Transient Enrollment Privilege

A USC graduate student in a certificate program seeking transient enrollment privilege at another institution should complete and submit the Special Enrollment Request (AS-30 ([http://www.sc.edu/study/colleges\\_schools/graduate\\_school/forms\\_library/](http://www.sc.edu/study/colleges_schools/graduate_school/forms_library/))) form available on the Office of the Registrar's website to the dean of The Graduate School for approval. Before enrolling in graduate courses at another institution, students should contact the graduate director of the certificate program for permission to enroll and to ensure that the credits from the other institution will be approved for inclusion on the student's certificate program of study.

## Revalidation of Out-of-Date Courses

Students enrolled in a certificate program may, with permission of the academic department administering the certificate, request revalidation of USC graduate courses over six years old for inclusion in the certificate program of study. Each academic program will determine whether a course is appropriate for revalidation. The Permit for Revalidation Examination (PRE ([http://www.sc.edu/study/colleges\\_schools/graduate\\_school/forms\\_library/](http://www.sc.edu/study/colleges_schools/graduate_school/forms_library/))) form must be completed and submitted to the dean of The Graduate School for approval prior to revalidation. Proof of payment of required fees must be submitted with the Permit for Revalidation Examination form. Complete revalidation instructions available: <http://gradschool.sc.edu/forms/pre.pdf>.

Note: Coursework taken at other institutions may not be revalidated.

## Application for Graduation and Degree Audit

All students enrolled in a certificate program must file the application for degree/graduation ([http://www.sc.edu/about/offices\\_and\\_divisions/registrar/](http://www.sc.edu/about/offices_and_divisions/registrar/)) available on the website of the Office of the University Registrar ([http://www.sc.edu/about/offices\\_and\\_divisions/registrar/](http://www.sc.edu/about/offices_and_divisions/registrar/)) with The Graduate School within 5 class days of the start of the fall or spring semester in which the degree is to be awarded, or within the first 10 class days of Summer Session if the degree is to be awarded at the end of the summer. Although some departments do not require students to provide the academic program with copies of the application for graduation, The Graduate School recommends that students do provide a copy to the academic program to facilitate assessment of degree requirements. Applicants are encouraged to consult with the academic program to confirm that all requirements for graduation have been met.

The Graduate School forwards the application for degree/graduation to the Office of the University Registrar to start the degree audit process. At the end of the semester, the degree program and The Graduate School both assess for degree audit whether all requirements have been completed, and then forward a recommendation to the Registrar to approve or disapprove awarding of the degree.

At the time of graduation, the student's cumulative grade point average (GPA) must be at least 3.00. Additionally, the student's average on all grades recorded on the program of study for courses numbered 700 or above must be at least 3.00 and all courses listed on the program of study must be at least 3.00 on (a) all USC graduate coursework, (b) all courses listed on the program of study, and (c) all courses numbered 700 and above listed on the program of study.

## Degree Conferral

Upon confirmation of a clear degree audit, the degree will be posted by the Office of the University Registrar to the student's official academic record. The degree award is posted to the student's transcript within 6 weeks after the commencement ceremony. Diplomas will be mailed to the address recorded on the application for graduation via first class mail to U.S. addresses and via registered airmail to international addresses. Graduates may expect to receive the diploma within three months after the commencement exercises.

Note: Degrees cannot be awarded retroactively.

To pursue further graduate study after completion of a graduate degree, a student must submit a new application to The Graduate School.

## Academic Regalia

Attendance at graduation ceremonies is optional. Academic regalia worn for graduation is sold by the University Bookstore in the Russell House located on Greene Street in Columbia. To place an order for academic regalia to wear for graduation, please telephone the University Bookstore at 803-777-4160 or visit the website at <https://sc.bncollege.com/shop/sc/home> (<https://sc.bncollege.com/shop/sc/home/>). You may also order academic regalia from the Bookstore at <https://usc.shopoakhalli.com/purchasewizard/Welcome> (<https://usc.shopoakhalli.com/purchasewizard/Welcome/>).

## Specialist Programs

The Specialist Program is generally considered a post-master's program of 30-36 hours leading to a degree as a specialist in a certain discipline, but specialist programs guided by professional licensure may be defined differently to meet licensure requirements. The University of South Carolina has the following specialist programs:

- Library and Information Science, S.L.I.S
- Education Administration, Ed.S.
- Counselor Education, Ed.S.

Students enrolled in specialist programs must follow the admission, academic and graduation policies and requirements of The Graduate School. Contact the program administering a particular specialist program for admission and degree requirements.

## Doctoral Degree Requirements

### Doctoral Degree Programs

The University of South Carolina offers the Doctor of Philosophy (Ph.D.) in many disciplines. The University also offers other doctoral degrees, such as the Doctor of Education, the Doctor of Musical Arts, the Doctor of Nursing Practice, the Doctor of Physical Therapy, and the Doctor of Public Health. Students enrolled in doctoral programs are required to follow the academic policies of The Graduate School. Academic programs may have additional or exceptional requirements.

A complete listing of doctoral degree programs at the University of South Carolina is available:

- Programs A-Z (p. 23)

## Doctor of Philosophy

The Doctor of Philosophy degree is a research-based degree designed to foster critical inquiry and expand and advance the knowledge of a discipline. Study for a specified time and accumulation of graduate credit hours are not by themselves sufficient to earn the Ph.D. The student must demonstrate scholarly distinction and the ability to advance knowledge through independent research by achieving admission to candidacy and writing a dissertation.

The doctoral degree requires a minimum of 60 graduate credit hours, including 12-30 hours of dissertation preparation (899), beyond the baccalaureate degree or a minimum of 30 graduate hours, including 12-30 hours of dissertation preparation (899), beyond the Master's degree. Students in doctoral programs defined as post-baccalaureate must have on the Program of Study (D-POS ([http://www.sc.edu/study/colleges\\_schools/graduate\\_school/](http://www.sc.edu/study/colleges_schools/graduate_school/))) a minimum of 60 hours that are in-date, 30 of which must be unique to the University of South Carolina. Students in doctoral programs defined as post-Master's must have on the Program of Study (D-POS ([http://www.sc.edu/study/colleges\\_schools/graduate\\_school/](http://www.sc.edu/study/colleges_schools/graduate_school/))) a minimum of 30 hours in-date and unique to the University of South Carolina. Programs requiring more than 60 hours post-baccalaureate or more than 30 hours post-master's are restricted by University and departmental transfer policy, but no transfer credit is permitted in satisfying the 30-hour minimum requirement that must be unique to the University of South Carolina. Unless a graduate student successfully completes a master's thesis, a student may use no more than 30 hours combined of thesis preparation (799) and dissertation preparation (899) on the doctoral program of study. Doctoral degree students must complete at least half of the hours on the Program of Study (D-POS ([http://www.sc.edu/study/colleges\\_schools/graduate\\_school/](http://www.sc.edu/study/colleges_schools/graduate_school/))) in courses numbered 700 or higher. A dissertation of original research is required for most doctoral programs. A period of residency, a foreign language or research methods proficiency, a comprehensive examination, and a dissertation defense or examination are also required. The specific curriculum for the doctoral degree varies with the discipline and some programs require additional credit hours. Students enrolled in a doctoral program have ten years from the first term of enrollment in which to complete the degree. Students must be enrolled for at least 1 credit during the term of graduation.

Information about specific requirements in a doctoral degree program is available from the faculty contact person or the graduate director of the respective doctoral program. Contact information for programs is available: [https://sc.edu/study/colleges\\_schools/graduate\\_school/](https://sc.edu/study/colleges_schools/graduate_school/).

## Other Doctoral Degrees

The general requirements for the Doctor of Philosophy degree apply to all doctoral programs offered by the University, except for adjustment in those requirements as approved by the Graduate Council and the dean of The Graduate School. Information about specific requirements in a doctoral degree program is available from the faculty contact person or the graduate director of the respective doctoral program. Contact information for programs is available: [https://sc.edu/study/colleges\\_schools/graduate\\_school/](https://sc.edu/study/colleges_schools/graduate_school/).

## Course Enrollment Load

A graduate student may enroll for a term load not to exceed 15 graduate hours. Some programs limit their students to a 9 or 12 hour maximum term course load. A student with a term course load of 9 or more hours during a fall or spring term is classified as full-time for academic purposes. The maximum course load in any summer session is 6 hours. A student must be enrolled for at least 1 credit during any semester in which dissertation progress is made and such University resources as the library, computer facilities, or faculty time are used.

## Special Enrollment (Z-status) Under-Enrollment Exception (Z-status)

The dean of The Graduate School, under certain circumstances, may certify that a student's full time enrollment is less than the normal requirement of 9 hours for graduate students or 6 hours for students serving as graduate assistants. Students seeking exceptions to minimum enrollment requirements should submit written requests to the dean of The Graduate School with acceptable justification in a memo from the student's academic advisor or the graduate director of the academic program. International students must also submit the approved Exemption from Full-time Enrollment form ([https://www.sc.edu/about/offices\\_and\\_divisions/international\\_student\\_services/immigration/maintaining-your-immigration-status/full-time-enrollment-requirements/](https://www.sc.edu/about/offices_and_divisions/international_student_services/immigration/maintaining-your-immigration-status/full-time-enrollment-requirements/)) from International Programs for Students.

For a student whose need for under-enrollment results from an internship, practicum, or field experience required by the graduate program, a justification indicating the term requested and the nature of the experience should be submitted in a written memo to the dean of The Graduate School by the student's academic advisor or the program's graduate director.

Students nearing completion of a doctoral degree requiring a dissertation may be granted special enrollment status and certified as half-time or full-time if the student has completed course work required for the degree except dissertation preparation (899). Eligibility requires verification of three conditions by the student's academic advisor or program graduate director. The memo requesting Z-status must indicate that:

1. all course work on the program of study has been completed except for dissertation preparation (899);
2. the student is working on the dissertation full-time, or if applicable, at least half-time; and
3. the student is not employed outside their graduate assistantship or, if applicable, employed no more than half-time if not on a graduate assistantship.

A Z-status request for under-enrollment privilege must be term-specific and is limited to two terms. Z-status for under-enrollment privilege may be extended beyond two terms with the approval of and justification from the academic unit and with the approval of the dean of The Graduate School.

Students who request exemption from full-time enrollment for financial aid purposes must submit the Special Academic Enrollment Release form (F 6.2) from the Office of Financial Aid.

## Family Leave (Z-status)

A graduate student who is the primary child-care provider is eligible to take a one major term of family leave from graduate study the major term during or following the event for the birth of a child or adoption

of a child less than 6 years old. The graduate student taking family leave will receive a one year extension of all academic responsibilities, including time to degree, removal of incomplete grades, and course in-date time. During family leave the graduate student will be on special enrollment (Z-status) status and must have health coverage. The student may waive out of University-sponsored health insurance if covered by other insurance or may elect to continue enrollment in the University-sponsored student health insurance plan. The student is responsible for submitting required waivers and/or for contacting the student health insurance contractor directly to enroll in the health insurance program and for paying premiums by the deadline. Students should be aware that a graduate assistantship position or other financial support may not be available upon return from family leave.

**Note:** While this policy does not mandate that programs continue financial support during family leave and/or guarantee student support or resumption of an assistantship after returning from family leave, programs are strongly encouraged to do so whenever possible.

Students contemplating family leave must advise their academic unit of the intention to take family leave and begin the family leave planning process at least six (6) weeks before the leave start date. Once planning has been completed at the unit level, a written petition for family leave with required supporting documentation and signatures must be submitted as a single packet to the dean of The Graduate School for approval at least three (3) weeks before the start of the leave. The petition must contain evidence of consultation and planning with the student's academic advisor(s) and a memo of support from the academic unit signed by the program's graduate director, a leave timeline, and appropriate documentation. Appropriate documentation for a female student for childbirth includes written certification from the student's health care provider confirming the pregnancy and anticipated due date or the baby's birth certificate and for a male student either certification confirming the anticipated due date or the baby's birth certificate. For adoption of a child less than 6 years old, a written certification of adoption from a certifying individual or agency specifying the date of adoption and the age of the child is the appropriate documentation.

This planning process with the academic unit should also be used to determine if any additional length of time beyond the one year extension of academic responsibilities period will be needed for the student opting for family leave to complete degree requirements. While a one year extension of academic responsibilities will be granted to any student on approved family leave, academic units often have specific timelines for exams, fieldwork, course sequences, etc., which may necessitate extension beyond the one year period. Graduate students with such circumstances may petition The Graduate School for extension of leave time. Academic unit requirements or limitations are a valid justification to petition for the extension. Petitions for extension of time beyond the one year family leave should be supported by the student's academic unit and will be reviewed by The Graduate School on an individual basis.

**Note:** Medical complications or other extenuating circumstances are not included in this policy. Such situations are more appropriately covered by the University's current policies regarding course incompletes and withdrawal and/or leave of absence due to extenuating circumstances.

The family leave policy is also intended to allow an international student to be coded as a "special enrollment" student and not affect current visa status. However, immigration regulations might dictate a different definition of enrollment than that defined as "special enrollment" for this policy. The Office of International Student Services is the authority on campus for interpreting current enrollment regulations

for international students, so international students contemplating family leave must consult the Office of International Student Services to address proactively any individual or unique visa issues and/or to consider how the latest applicable regulations would affect eligibility for family leave. International students applying for family leave must discuss the intended leave period with the Office of International Student Services at the beginning of the six (6) week planning period and must include a signed memo from the Office of International Student Services detailing immigration status and any consequences of taking family leave in the written petition packet submitted to the student's program graduate director for signature and to the dean of The Graduate School for approval.

Once the family leave has been approved, a memo will be placed by The Graduate School in the student's academic file indicating the leave dates and the extension date for academic responsibilities. It is the student's responsibility to communicate with their academic unit while on leave. It is also the student's responsibility to work with faculty and program administrators on arrangements for course completion, achievement of degree requirements, and for continuation of research and/or teaching activities before and following the period of the leave.

## Right to an Advisor

Every graduate student admitted to a degree program is entitled to an advisor. The academic program graduate director is the default academic advisor for graduate students until another academic advisor is assigned or an advisory committee is formed. Students are urged to consult with an advisor prior to enrollment. Doctoral students should have an Advisory Committee appointed by the program by the end of the first term of enrollment.

## Doctoral Program Committees

Each of the two committees has an assigned function and must conform to policies of The Graduate School on doctoral committee membership. Membership on doctoral committees, excluding the outside member, is limited to regular and associate members of the graduate faculty and those who hold special term appointments with approval to serve as a regular member of a doctoral committee. Each doctoral committee must have no more than one outside member. The two committees may or may not have the same members.

As defined in The Faculty Manual, regular members of the graduate faculty on the Columbia campus shall include the president; provost; dean of The Graduate School; associate deans of The Graduate School; and chairs of academic departments offering degrees conferred by The Graduate School. Faculty members holding the Ph.D. or other terminal degree in their respective field of study are considered to become regular members of the graduate faculty upon appointment to a tenured or tenure-track position at the University's Columbia campus.

Non-tenure-track USC faculty members and scholars who hold the Ph.D. or other terminal degree may be appointed to associate membership in the Graduate Faculty. Associate Membership appointments to the Graduate faculty are granted upon nomination by an academic unit to the dean of The Graduate School for a period not to exceed 6 years. Associate membership is appropriate for full-time USC clinical faculty, research faculty and other USC scholars holding an appropriate terminal degree. Associate members may teach graduate courses, direct theses and dissertations and participate in graduate student committees.

Faculty members and scholars not otherwise eligible for regular or associate membership on the graduate faculty may be appointed to term

appointments. Term appointments are appropriate for USC faculty in the School of Law and the School of Medicine, emeriti USC professors, clinical and research faculty, faculty members at other institutions (including other campuses of the USC system), and others holding an appropriate terminal degree or other credentials that justify appointment as a regular committee member. Persons with term appointments to the graduate faculty may serve on, but may not chair, doctoral committees.

To continue to serve in the capacity as chair or regular member is a special exception. This request (with a valid academic justification) must have the endorsements of the academic program faculty, chair of the department, graduate director, and academic dean. Once these approvals are affirmed, the petition is presented to the dean of The Graduate School for final approval. Otherwise, a change in the committee composition must be presented to the dean of The Graduate School replacing the now ineligible member.

The outside member may be a regular or associate member of the graduate faculty in another department/program at USC, a faculty member from another institution, or a qualified professional from the private or governmental sectors. The outside member is nominated by the academic unit to the dean of The Graduate School. Approval is based on the nominee's qualifications provided on a resume or curriculum vitae and relevance to the student's major field or research as explained in the justification submitted by the graduate director of the program with the nomination. Outside members do not need to have term appointments to serve on the committee.

The Written and Oral Comprehensive Examination Committee administers the oral and written portions of the comprehensive examination.

The Dissertation Committee directs the research and preparation of the student's dissertation, examines the student on the content of the dissertation, directs the student to complete documents required for graduation, and signs forms required for graduation. Other functions may be defined by the program.

## Doctoral Advisory Committee

The Advisory Committee is appointed by the program by the end of the first term of enrollment and should include two or three faculty from the student's academic program. This purpose of the Advisory Committee is to provide initial advisement of the student, guide academic planning and research efforts, and construct the program of study to file with The Graduate School. The Advisory Committee roster does not need to be submitted to the dean of The Graduate School for approval.

Major points that should be noted with regard to committee membership:

- At least half of the doctoral committee composition must be regular or associate members of The Graduate School faculty.
- The majority of each doctoral committee must be regular, associate, or term graduate faculty members in the student's area of research.
- The committee must include no fewer than four members, one of whom must be from outside the student's program.
- The chair of the doctoral committee must be a regular or associate member of the graduate faculty.
- A doctoral committee member whose Graduate School faculty eligibility expires (e.g., emeritus faculty) while a student is still pursuing the degree may continue to serve until the student completes the program or the committee is dissolved.
- To continue to serve in the capacity as chair is a special exception. This request (with a valid academic justification) must have the

endorsements of the academic program faculty, chair of the department, graduate director, and academic dean. Once these approvals are affirmed, the petition is presented to the dean of The Graduate School for final approval. Otherwise, a change in the committee composition must be presented to the dean of The Graduate School replacing the now ineligible member.

## Doctoral Program of Study

Every doctoral degree student must file a doctoral program of study (D-POS ([http://www.sc.edu/study/colleges\\_schools/graduate\\_school/](http://www.sc.edu/study/colleges_schools/graduate_school/))) in The Graduate School for approval by the dean of The Graduate School. A program of study is a list of courses that satisfy degree requirements and is one of the degree audit documents. It allows the student and the advisor to engage in early planning of course work, explore research interests, and discuss requirements for progress toward degree; facilitates subsequent advisement; and protects the student in the event of unexpected curriculum or faculty changes. The doctoral student must file a completed Program of Study (D-POS ([http://www.sc.edu/study/colleges\\_schools/graduate\\_school/](http://www.sc.edu/study/colleges_schools/graduate_school/))) form within the first 24 months of course work, but earlier if possible. The D-POS must be signed by the chair of the student's Advisory Committee, the graduate director of the program, and the dean of The Graduate School. If necessary, an approved program of study can be modified with a Request for Program Adjustment form ([http://www.sc.edu/study/colleges\\_schools/graduate\\_school/](http://www.sc.edu/study/colleges_schools/graduate_school/)).

All doctoral candidates are required to successfully complete a minimum of 12 hours of dissertation preparation (899), but up to 30 hours of dissertation preparation (899) or 30 hours of a combination of dissertation (899) and thesis (799) preparation are allowed on a doctoral program of study. At least half of the hours on the Doctoral Program of Study (D-POS) must be in courses numbered 700 or higher.

## Concurrent and Dual Enrollment Programs of Study

For dual degree and concurrent degree enrollment, students are required to submit an individual program of study for each degree program. With approval of the program and the dean of the Graduate School, students concurrently enrolled may use no more than 12 credit hours that are common to all programs of study. However, if a student is concurrently enrolled in a master's and a doctoral program in the same discipline, the number of credit hours applicable from the master's program toward the doctoral program is limited to 9 hours. Programs may allow fewer than 12 shared hours or the 9 shared hours for the same discipline concurrent enrollment.

## Transfer Credit

Course work not part of a completed certificate program or graduate degree from USC or another institution may be transferred for credit toward a doctoral degree. A limited amount of course work may be transferred from another institution for credit toward a doctoral degree. The exact number of transfer hours varies by program, but may not constitute more than 50 percent of the hours listed on a program of study, not including dissertation preparation (899) or the equivalent.

The transfer course work must be relevant to the program and have course content and a level of instruction equivalent to that offered by the University's own graduate programs. Approval for acceptance of transfer credit to a student's program of study must be approved and justified by the student's academic program and submitted to the dean

of the Graduate School for final approval on the Request for Transfer of Academic Credit (G-RTC ([http://www.sc.edu/study/colleges\\_schools/graduate\\_school/](http://www.sc.edu/study/colleges_schools/graduate_school/))) form. Only credits with grades of B or better (equivalent to 3.0 on a 4.0 grading scale) may be transferred from another institution into a doctoral degree program. Course work transferred for credit toward a doctoral degree must be from an accredited institution and must be no more than ten years old at the time of graduation.

## Transient Enrollment Privilege

A USC graduate student in a doctoral program seeking transient enrollment privilege at another institution should complete and submit the Special Enrollment Request (AS-30) form available on the Office of the University Registrar's Web site to dean of The Graduate School for approval. Before enrolling in graduate courses at another institution, permission to enroll should be obtained from the doctoral student's advisor and the program graduate director to ensure that the credits from the other institution will be approved for inclusion in the student's UofSC program of study.

## Revalidation of Out-of-Date Courses

Students enrolled in a doctoral program at the University of South Carolina may, with permission of the academic program, request revalidation of USC graduate courses over ten years old for inclusion on the doctoral program of study. Each academic unit will determine whether a course is appropriate for revalidation. All instructions for revalidation ([http://www.sc.edu/study/colleges\\_schools/graduate\\_school/forms\\_library/](http://www.sc.edu/study/colleges_schools/graduate_school/forms_library/)) must be followed and the Permit for Revalidation Examination (PRE ([http://www.sc.edu/study/colleges\\_schools/graduate\\_school/forms\\_library/](http://www.sc.edu/study/colleges_schools/graduate_school/forms_library/))) form must be completed and submitted to the dean of The Graduate School for approval prior to revalidation. Proof of payment of revalidation fees must be submitted with the Permit for Revalidation Examination form.

**Note:** Coursework taken at other institutions may not be revalidated.

## Independent Study

The purpose of an independent study is to allow the student to pursue an area of academic interest not adequately covered by the regular course structure. Therefore, an independent study course cannot be used to fulfill a core requirement.

Prior to enrolling in an independent study course, a student must complete a graduate Independent Study Contract form (G-ISC ([http://www.sc.edu/study/colleges\\_schools/graduate\\_school/](http://www.sc.edu/study/colleges_schools/graduate_school/))). The approval of the course instructor, the chair of the student's doctoral Advisory Committee, and the graduate director of the academic program is required. Students send an approved copy of the G-ISC to the Office of the University Registrar before registering for the course.

**Note:** Not more than 9 hours of independent study may be used on a doctoral program of study.

## Professional Development Course Work

Professional development course work is designated on the academic record by a professional development designator. A maximum of 6 hours of professional development graduate course work may be included on a doctoral program of study. The academic program and the dean of The Graduate School must approve the inclusion of professional development graduate course work on a program of study.

## Reduced Tuition Course Work

Course work taken with reduced tuition (usually a contract course) is designated on the academic record by a reduced tuition designation. A maximum of 6 hours of reduced tuition rate course work may be included on a doctoral program of study. The academic program and the dean of The Graduate School must approve the inclusion of reduced tuition graduate course work on a program of study.

## Admission to Doctoral Candidacy for Doctor of Philosophy and Other Doctoral Degrees

Upon nomination from the doctoral program, the dean of The Graduate School considers students for admission to doctoral candidacy only after:

1. the student is fully admitted to the doctoral degree program by the academic unit,
2. passes the qualifying examination, and
3. submits an approved doctoral program of study to the dean of The Graduate School.

No student is admitted to candidacy by the dean of The Graduate School until after completion of all three conditions and written nomination is received from the academic program. The Graduate School will notify the student and the graduate director of the student's program when the student has been admitted to candidacy.

**Note:** Admission to candidacy must be granted at least one full academic year before the awarding of the degree.

## Residency Requirement

The intent of a residency requirement is to ensure that doctoral students benefit from and contribute to the full spectrum of educational and professional opportunities provided by working closely with the graduate faculty and other students of a research university. The membership of the Graduate Faculty of The University of South Carolina subscribe to the position that a residency requirement may be met in a variety of ways, and that these ways may relate to the particulars of different degree programs.

All graduate programs are expected to encourage, design, provide and monitor the means for doctoral students to acquire the knowledge, skills, attitudes and values appropriate to their discipline through mechanisms that extend beyond mere course work. Regular attendance in courses to gain experience with specialized equipment and other scholarly materials and at seminars presented by scholars at The University of South Carolina and other invited guests is a beginning point. Additional experiences may include, but not be limited to, attending and presenting at professional conferences, participation in presentations of scholarly work, assisting with the conceptualization, and development and application for funding of scholarly efforts.

Given the diversity of disciplinary traditions at a major research university, residency requirements may be met in different ways. At The University of South Carolina, residency requirements may be met in one of two ways:

- **Option 1.** Two consecutive semesters of full-time enrollment. Full time enrollment is defined as enrollment for 6 hours for students serving as graduate assistants and 9 hours for students who are not graduate assistants; consecutive semesters could be fall/spring, spring/summer, summer/fall, or spring/fall. Programs are expected to

provide enrichment opportunities beyond course enrollment to help doctoral students understand and meet the intention of the residency requirements.

- **Option 2.** Program-specific alternative residency plan. Diverse academic traditions and rapidly changing technology are factors that make a single approach to meeting the intention of a residency requirement problematic. Hence, program representatives may propose alternative methods to achieving the residency goals. This proposal would be submitted to the associate dean of The Graduate School for consideration by The Graduate Council.

The student's advisory committee certifies on the doctoral program of study (D-POS ([http://www.sc.edu/study/colleges\\_schools/graduate\\_school/](http://www.sc.edu/study/colleges_schools/graduate_school/))) form the term dates and courses or other means by which the student satisfies the residency requirement. In the event that unique circumstances arise, it may be possible for a student to meet the residency requirement through an individualized plan. A proposal for an individual residency plan can be submitted to the associate dean of The Graduate School for consideration and action.

## Foreign Language and/or Research Methods Requirement

Language and research methods requirements for the doctoral degree vary from program to program. Satisfying the requirement may entail one or more of the following: successful completion of an intensive reading course in a language approved by The Graduate School (e.g., SPAN 615), successful completion of a course at the intermediate level of language proficiency within ten years previous of the award of the degree, or a passing grade on a language reading proficiency examination administered by the USC Department of Languages, Literatures, and Cultures ([http://sc.edu/study/colleges\\_schools/artsandsciences/dllc/](http://sc.edu/study/colleges_schools/artsandsciences/dllc/)) (DLLC). Students should contact DLLC for language course and testing information. Programs which directly involve language study may have additional language requirements.

Students have three opportunities to pass the language course or satisfy the reading proficiency examination. The Graduate School must be notified by the graduate director of the student's academic program of successful completion of the language requirement.

In some programs a student is allowed to substitute competency in computer science, statistics, or another research method or competency for a reading knowledge of a foreign language. The requirement may be satisfied by the appropriate course work or examination. Permission for substitution must be approved by the dean of The Graduate School. As with successful completion of the language requirement, The Graduate School must also be notified of a student's successful completion of a substitution for the language requirement.

With approval of the academic program and the dean of The Graduate School, English may be accepted as a foreign language for students whose native language is not English and such students should submit the Certification of English as a Foreign Language (G-CIE ([http://www.sc.edu/study/colleges\\_schools/graduate\\_school/](http://www.sc.edu/study/colleges_schools/graduate_school/))) form. In cases where it is relevant to a student's research, American Sign Language may be used to satisfy the language requirement.

The student should make arrangements to complete the foreign language and/or research methods requirements at the earliest opportunity. Certification of foreign language and/or research methods competency

for doctoral students remains valid for ten years, after which it must be revalidated.

## Written and Oral Comprehensive Examination

Candidates must pass a written and oral comprehensive examination conducted by the student's academic program under the direction of the Written and Oral Comprehensive Examination Committee. This Committee must be comprised of no fewer than four members, at least one of whom must be from outside the candidate's major department. Normally, the comprehensive examination is given after the candidate has completed all course work on the program of study except for courses in which the student may be currently registered. The comprehensive examination may not be given less than 60 days before the student receives the degree.

**Note:** Certification of the comprehensive examination for doctoral students remains valid for five years from the academic term taken, after which it must be revalidated.

## Dissertation

Students enrolled in a doctoral degree program are required to submit an approved dissertation to satisfy part of the requirements for the degree. The dissertation is the ultimate requirement of the doctoral program and becomes a permanent record of the student's independent research or creative effort. The best academic tradition and professional practice require The Graduate School to preserve and share graduate student work with other scholars. To do that successfully means maintaining high standards concerning the form and appearance of the dissertation. The dissertation is based on original research and is completed under the direction of the Dissertation Committee. Dissertation formatting and organization guidelines ([http://www.sc.edu/study/colleges\\_schools/graduate\\_school/](http://www.sc.edu/study/colleges_schools/graduate_school/)) are available on the website of The Graduate School. No later than five years after passing the comprehensive examination, the student must present a dissertation that has been approved by the student's Dissertation and Dissertation Defense Committee.

Courses numbered 899 in all departments are restricted to dissertation preparation. All doctoral candidates are required to successfully complete a minimum of 12 hours of dissertation preparation (899), but up to 30 hours of dissertation preparation (899) or 30 hours of a combination of dissertation (899) and thesis (799) preparation are allowed on a doctoral program of study. With permission of the student's academic advisor and program graduate director, dissertation preparation hours (899) may be taken in any department if pertinent to the student's research. Any student who uses University facilities or confers with faculty on dissertation work in any semester must be officially enrolled for at least one hour of graduate credit. It is recommended that the one hour of credit be in dissertation preparation (899).

On the student's academic transcript completion or satisfactory progress in dissertation preparation will be indicated by the grade of T; unsatisfactory progress in dissertation preparation will be indicated by the grade of U. These grades will not be used to calculate the student's grade point average. Programs may establish policies regarding progress to degree and eligibility for continued enrollment that are more stringent than the policies of The Graduate School.

## Dissertation Submission

The dissertation is submitted to The Graduate School through the electronic thesis and dissertation (ETD) submission process.



Instructions for submission ([http://www.sc.edu/study/colleges\\_schools/graduate\\_school/](http://www.sc.edu/study/colleges_schools/graduate_school/)) should be read thoroughly and followed explicitly, including deadlines for format check and final submission. The preliminary dissertation document will need to be submitted electronically to The Graduate School for a format check not later than five weeks before graduation through the ProQuest/UMI ETD portal. The Electronic Thesis and Dissertation coordinator ([http://www.sc.edu/study/colleges\\_schools/graduate\\_school/](http://www.sc.edu/study/colleges_schools/graduate_school/)) for the academic program will respond with any needed corrections or revisions. At least 20 days prior to graduation, the candidate must submit the final revision of the dissertation through the ETD process. Students will receive notification of receipt of the final dissertation submission from The Graduate School program coordinator.

The dissertation must be reproduced by ProQuest/UMI for archival purposes as per the laws of the State of South Carolina and must be archived by the University library. The dissertation abstract will be published in the dissertation database. Additional information on publication ([http://www.sc.edu/study/colleges\\_schools/graduate\\_school/#Embargo\\_option\\_for\\_creative\\_works\\_or\\_intellectual\\_property\\_with\\_commercial\\_applications](http://www.sc.edu/study/colleges_schools/graduate_school/#Embargo_option_for_creative_works_or_intellectual_property_with_commercial_applications)) and copyright options is available on the website of The Graduate School. Students using previously published articles as dissertation content must submit a copyright release ([http://gradschool.sc.edu/thesisdissertation/dissertation-formatting.htm#B\\_COPYRIGHT\\_RELEASE](http://gradschool.sc.edu/thesisdissertation/dissertation-formatting.htm#B_COPYRIGHT_RELEASE)) from the publisher of the articles.

No paper copies of the dissertation are required by The Graduate School. If the academic program requires students to submit a bound copy of the dissertation, the department and student are responsible for obtaining the copy.

## Dissertation Defense

A dissertation must be successfully defended before the Dissertation Committee. The dissertation defense should be no fewer than 30 days before the date of graduation.

Please consult the graduate director of the academic program for departmental, school, or college specific defense requirements, including scheduling procedures. The Graduate School requires that the dissertation defense be publicly announced. The Dissertation Defense Announcement (G-DDA) form must be submitted at least 14 days prior to the defense.

When the defense has been approved by the Dissertation Committee, the signatures of the committee members must be obtained on the Dissertation Signature and Approval (G-DSF (<http://gradschool.sc.edu/DocLibrary/documents/G-DSF.pdf>)) form. The electronic submission of the dissertation will not have title page signatures; this is to prevent theft and unauthorized use of signatures that otherwise might occur. The graduate director of the academic program will also be asked to sign the G-DSF form to affirm that the dissertation follows the style manual endorsed by the program.

In addition, the student must complete the Survey of Earned Doctorates (SED ([http://www.sc.edu/study/colleges\\_schools/graduate\\_school/](http://www.sc.edu/study/colleges_schools/graduate_school/))) available on the website of The Graduate School. The G-DSF with signatures and the SED must be delivered to the Graduate School program coordinator who oversees the degree program. The G-DSF is to be submitted to the program coordinator in an envelope marked "Confidential." The student may hand-deliver the completed SED and G-

DSF to The Graduate School program coordinator or may send it through the mail.

**Note:** The G-DSF and SED must be received by the final submission deadline in order for the student to be cleared for graduation.

## Application for Graduation and Degree Audit

All students enrolled in a doctoral degree program must file the application for degree/graduation ([http://www.sc.edu/about/offices\\_and\\_divisions/registrar/](http://www.sc.edu/about/offices_and_divisions/registrar/)) available on the website of the Office of the University Registrar ([http://www.sc.edu/about/offices\\_and\\_divisions/registrar/](http://www.sc.edu/about/offices_and_divisions/registrar/)) with The Graduate School within the first 15 class days of the fall or spring semester in which the degree is to be awarded, or within the first 10 class days of the Summer Session. Although some departments do not require students to provide the academic program with copies of the application for graduation, The Graduate School recommends that students do provide a copy to the academic program to facilitate assessment of degree requirements. Applicants are encouraged to consult with the academic program to confirm that all requirements for graduation have been met.

Applications for graduation submitted after the announced filing deadline will be processed for the following term.

The Graduate School forwards the Application for Graduation form to the Office of the University Registrar to start the degree audit process. In Self Service Carolina, students should view their Graduation Degree Application information to confirm the accuracy of the information submitted and to correct any errors so the diploma is printed correctly. It is also important to check Self Service Carolina to determine if there are any holds that will prevent issue of an official transcript or mailing of the diploma. At the end of the semester, the degree program and The Graduate School both assess for degree audit whether all requirements have been completed, and then forward a recommendation to the Registrar to approve or disapprove award of the degree.

At the time of graduation, the student's cumulative grade point average (GPA) must be at least 3.00. Additionally, the student's average on all grades recorded on the program of study for courses numbered 700 or above must be at least 3.00 and all courses listed on the program of study must be at least 3.00

## Degree Conferral

Upon confirmation of a clear degree audit, the degree will be posted by the Office of the University Registrar to the student's official academic record. The degree award is posted to the student's transcript within 6 weeks after graduation. Degree candidates may wish to check Self Service Carolina to see if the degree is posted. Diplomas will be mailed to the address recorded on the application for graduation via first class mail to U.S. addresses and via registered airmail to international addresses. Graduates may expect to receive the diploma within three months after graduation. Degrees cannot be awarded retroactively.

**Note:** To pursue further graduate study after completion of a graduate degree, a student must submit a new application to The Graduate School.

## Academic Regalia

A special doctoral hooding ceremony and commencement is held two times a year for graduating doctoral students. Attendance at graduation ceremonies is optional. Information on commencement

exercises ([http://www.sc.edu/study/colleges\\_schools/graduate\\_school/](http://www.sc.edu/study/colleges_schools/graduate_school/)) is posted to The Graduate School webpage.

Academic regalia worn for the commencement ceremony is sold by the University Bookstore in the Russell House located on Greene Street in Columbia. To place an order for academic regalia to wear for graduation, please telephone the University Bookstore at 803-777-4160 or visit the website at <https://sc.bncollege.com/shop/sc/home> (<https://sc.bncollege.com/shop/sc/home/>).

## Master's Degree Requirements

### Master's Degree Programs

The University of South Carolina offers the Master of Arts and the Master of Science in many disciplines. The University also offers several professional master's degrees, such as the Master of Arts in Teaching (M.A.T.), the Master of Fine Arts (M.F.A.), the Interdisciplinary Master of Arts in Art Education (I.M.A.), the Master's in Library and Information Science (M.L.I.S.), the Master's in Social Work (M.S.W.), the Master's of Business Administration (M.B.A.), and the Professional Science Master (P.S.M.).

A complete listing of Master's degree programs at the University of South Carolina is available at:

- Programs A-Z (p. 23)

All students enrolled in Master's degree programs must follow the academic policies of The Graduate School. Academic programs may have additional or exceptional requirements.

### Master of Arts and Master of Science

For Master of Arts and Master of Science degrees, the minimum requirement is 30 semester hours of graduate credit, but programs may require additional hours. A thesis or special project is required in most programs. Not more than 9 hours of 799 (thesis preparation) may be used on a master's program of study. The department may require master's students to make up deficiencies or may have additional requirements. At least half of the credit hours on the Program of Study, exclusive of thesis preparation (799), must be earned in courses numbered 700 and above. Master's students must have a completed and approved Master's Program of Study (M-POS ([http://www.sc.edu/study/colleges\\_schools/graduate\\_school/forms\\_library/](http://www.sc.edu/study/colleges_schools/graduate_school/forms_library/))) form on file within 12 months of initial enrollment in the program. Students enrolled in a Master's degree program have six years from the first term of enrollment in which to complete the degree. Students must be enrolled for at least 1 credit during the term of graduation.

### Professional Master's Degrees

Unless requirements are specifically waived by The Graduate School, the general requirements for the Master of Arts and Master of Science degrees apply to all master's degrees offered by the University, but programs may have additional or exceptional requirements. A professional Master's degree program must be at least 30 semester hours of graduate credit and at least half of the credit hours on the Master's Program of Study, exclusive of thesis preparation (799), must be earned in courses numbered 700 and above. Students enrolled in a professional master's degree program must have a completed and approved Master's Program of Study (M-POS) form on file within 12 months of initial enrollment in the program.

## A Second Master's Degree from USC

When a student applies for a second master's degree from USC, e.g., Master of Arts following a Master of Science, or a Master of Arts following a Master of Education, the candidate must meet the requirements of the second degree in full. However, with approval of the program and the dean of the Graduate Studies, up to 12 semester hours from the program of study of a previous USC graduate degree may be applied toward the second USC degree. Students are advised to seek approval for the inclusion of hours from the previous degree before applying to a second master's degree program.

### Course Enrollment Load

A graduate student may enroll for a term load not to exceed 15 graduate hours. Some programs limit their students to a 9 or 12 hour maximum term course load. A student with a term course load of 9 or more hours during a fall or spring term is classified as full-time for academic purposes. The maximum course load in any summer session is 6 hours.

A student must be enrolled for at least 1 credit hour during any semester in which thesis progress is made and such University resources as the library, computer facilities, or faculty time are used.

### Special Enrollment (Z-status) Under-Enrollment Exception (Z-status)

The dean of The Graduate School, under certain circumstances, may certify that a student's full-time enrollment is less than the normal requirement of 9 hours for graduate students or 6 hours for students serving as graduate assistants. Students seeking exceptions to minimum enrollment requirements should submit written requests to the dean of The Graduate School with acceptable justification in a memo from the student's academic advisor or the graduate director of the academic program. International students must also submit the approved Exemption from Full-time Enrollment form ([http://sc.edu/about/offices\\_and\\_divisions/international\\_student\\_services/?option=com\\_docman&task=doc\\_view&gid=550&Itemid=](http://sc.edu/about/offices_and_divisions/international_student_services/?option=com_docman&task=doc_view&gid=550&Itemid=)) from International Programs for Students.

For a student whose need for under-enrollment results from an internship, practicum, or field experience required by the graduate program, a justification indicating the term requested and the nature of the experience should be submitted in a written memo to the dean of The Graduate School by the student's academic advisor or the program's graduate director.

Students nearing completion of a doctoral degree requiring a dissertation may be granted special enrollment status and certified as half-time or full-time if the student has completed course work required for the degree except dissertation preparation (899). Eligibility requires verification of three conditions by the student's academic advisor or program graduate director. The memo requesting Z-status must indicate that:

1. all course work on the program of study has been completed except for dissertation preparation (899);
2. the student is working on the dissertation full-time, or if applicable, at least half-time; and
3. the student is not employed outside their graduate assistantship or, if applicable, employed no more than half-time if not on a graduate assistantship.

A Z-status request for under-enrollment privilege must be term-specific and is limited to two terms. Z-status for under-enrollment privilege may

be extended beyond two terms with the approval of and justification from the academic unit and with the approval of the dean of The Graduate School.

Students who request exemption from full-time enrollment for financial aid purposes must submit the Special Academic Enrollment Release form (F 6.2) from the Office of Financial Aid.

## Family Leave (Z-status)

A graduate student who is the primary child-care provider is eligible to take a one major term of family leave from graduate study the major term during or following the event for the birth of a child or adoption of a child less than 6 years old. The graduate student taking family leave will receive a one year extension of all academic responsibilities, including time to degree, removal of incomplete grades, and course in-date time. During family leave, the graduate student will be on special enrollment (Z-status) status and must have health coverage. The student may waive out of University-sponsored health insurance if covered by other insurance or may elect to continue enrollment in the University-sponsored student health insurance plan. The student is responsible for submitting required waivers and/or for contacting the student health insurance contractor directly to enroll in the health insurance program and for paying premiums by the deadline. Students should be aware that a graduate assistantship position or other financial support may not be available upon return from family leave.

**Note:** While this policy does not mandate that programs continue financial support during family leave and/or guarantee student support or resumption of an assistantship after returning from family leave, programs are strongly encouraged to do so whenever possible.

Students contemplating family leave must advise their academic unit of the intention to take family leave and begin the family leave planning process at least six (6) weeks before the leave start date. Once planning has been completed at the unit level, a written petition for family leave with required supporting documentation and signatures must be submitted as a single packet to the dean of The Graduate School for approval at least three (3) weeks before the start of the leave. The petition must contain evidence of consultation and planning with the student's academic advisor(s) and a memo of support from the academic unit signed by the program's graduate director, a leave timeline, and appropriate documentation. Appropriate documentation for a female student for childbirth includes written certification from the student's health care provider confirming the pregnancy and anticipated due date or the baby's birth certificate and for a male student either certification confirming the anticipated due date or the baby's birth certificate. For adoption of a child less than 6 years old, a written certification of adoption from a certifying individual or agency specifying the date of adoption and the age of the child is the appropriate documentation.

This planning process with the academic unit should also be used to determine if any additional length of time beyond the one year extension of academic responsibilities period will be needed for the student opting for family leave to complete degree requirements. While a one year extension of academic responsibilities will be granted to any student on approved family leave, academic units often have specific timelines for exams, fieldwork, course sequences, etc., which may necessitate extension beyond the one year period. Graduate students with such circumstances may petition The Graduate School for extension of leave time. Academic unit requirements or limitations are a valid justification to petition for the extension. Petitions for extension of time beyond the one

year family leave should be supported by the student's academic unit and will be reviewed by The Graduate School on an individual basis.

**Note:** Medical complications or other extenuating circumstances are not included in this policy. Such situations are more appropriately covered by the University's current policies regarding course incompletes and withdrawal and/or leave of absence due to extenuating circumstances.

The family leave policy is also intended to allow an international student to be coded as a "special enrollment" student and not affect current visa status. However, immigration regulations might dictate a different definition of enrollment than that defined as "special enrollment" for this policy. The Office of International Student Services is the authority on campus for interpreting current enrollment regulations for international students, so international students contemplating family leave must consult the Office of International Student Services to address proactively any individual or unique visa issues and/or to consider how the latest applicable regulations would affect eligibility for family leave. International students applying for family leave must discuss the intended leave period with the Office of International Student Services at the beginning of the six (6) week planning period and must include a signed memo from the Office of International Student Services detailing immigration status and any consequences of taking family leave in the written petition packet submitted to the student's program graduate director for signature and to the dean of The Graduate School for approval.

Once the family leave has been approved, a memo will be placed by The Graduate School in the student's academic file indicating the leave dates and the extension date for academic responsibilities. It is the student's responsibility to communicate with their academic unit while on leave. It is also the student's responsibility to work with faculty and program administrators on arrangements for course completion, achievement of degree requirements, and for continuation of research and/or teaching activities before and following the period of the leave.

## Right to an Advisor

Every graduate student admitted to a degree program is entitled to an advisor. The academic program graduate director is the default academic advisor for graduate students until another academic advisor is assigned or an advisory committee is formed. Students are urged to consult with an advisor prior to enrollment.

## Master's Program of Study

Every degree student must file a Master's program of study (M-POS (<http://gradschool.sc.edu/forms/Mastersprogramofstudy.pdf>)) in The Graduate School for approval by the dean of The Graduate School. A program of study is a list of courses that satisfy degree requirements, and it must be approved by the student's advisor, the graduate director, and the dean of The Graduate School. This formal agreement serves a number of purposes that benefit both the student and the University. It allows the student and the advisor to engage in early planning of course work, explore research interests, and discuss requirements for progress toward degree; facilitates subsequent advisement; and protects the student in the event of unexpected curriculum or faculty changes. The student must file a completed Master's Program of Study form (M-POS (<http://gradschool.sc.edu/forms/Mastersprogramofstudy.pdf>)) within the first 12 months of course work. If necessary, an approved program of study can be modified with a Program Adjustment form (<http://gradschool.sc.edu/forms/POSAform.pdf>).

## Concurrent and Dual Enrollment Programs of Study

For dual degree and concurrent degree enrollment, students are required to submit an individual program of study for each degree program. With approval of the program and the dean of the Graduate School, students concurrently enrolled may use no more than 12 credit hours that are common to all programs of study. However, if a student is concurrently enrolled in a master's and a doctoral program in the same discipline, the number of credit hours applicable from the master's program toward the doctoral program is limited to 9 hours. Programs may allow fewer than 12 shared hours or the 9 shared hours for the same discipline concurrent enrollment.

## Transfer Credit

Course work not part of a completed certificate program or graduate degree from USC or another institution may be transferred for credit toward a master's degree. No more than 12 semester hours of graduate credit may be transferred into a master's program that requires 30-36 hours; no more than 15 semester hours of graduate credit may be transferred into a master's program that requires 37-45 hours; and no more than 18 semester hours of graduate credit may be transferred into a master's program that requires 46 or more semester hours. Only credits with grades of B or better (equivalent to 3.0 on a 4.0 grading scale) may be transferred from another institution into a Master's degree program. Course work transferred for credit toward a Master's degree must be from an accredited institution and must be no more than six years old at the time of graduation.

Course work transferred from another institution must be relevant to the program and have course content and a level of instruction equivalent to that offered by the University's own graduate programs. Approval for acceptance of transfer credit to a student's program of study must be approved and justified by the student's academic program and submitted to the dean of the Graduate School for final approval on the Request for Transfer of Academic Credit (G-RTC (<http://gradschool.sc.edu/forms/G-RTC.pdf>)) form.

## Transient Enrollment Privilege

A USC graduate student in a Master's program seeking transient enrollment privilege at another institution should complete and submit the Special Enrollment Request (AS-30 (<http://registrar.sc.edu/pdf/AS-30e.pdf>)) form available on the Office of the University Registrar's website to dean of The Graduate School for approval. Before enrolling in graduate courses at another institution, contact the graduate director of the Master's program for permission to enroll and to ensure that the credits from the other institution will be approved for inclusion in the student's USC Master's program of study.

## Revalidation of Out-of-Date Courses

Students enrolled in a Master's program at the University of South Carolina may, with permission of the academic program, request revalidation of USC graduate courses over six years old for inclusion on the Master's program of study. Each academic unit will determine whether a course is appropriate for revalidation. All instructions for revalidation (<http://gradschool.sc.edu/forms/pre.pdf>) must be followed and the Permit for Revalidation Examination (PRE (<http://gradschool.sc.edu/forms/pre.pdf>)) form must be completed and submitted to the dean of The Graduate School for approval prior to

revalidation. Proof of payment of revalidation fees must be submitted with the Permit for Revalidation Examination form.

**Note:** Coursework taken at other institutions may not be revalidated.

## Independent Study

The purpose of an independent study is to allow the student to pursue an area of academic interest not adequately covered by the regular course structure. Therefore, an independent study course cannot be used to fulfill a core requirement.

Prior to enrolling in a graduate independent study course, a student must complete a graduate Independent Study Contract form (G-ISC (<http://gradschool.sc.edu/forms/G-ISC.independent.study.contract.GS50.pdf>)). The approval of the instructor, advisor, and the graduate director of the program is required. Students send an approved copy of the G-ISC (<http://gradschool.sc.edu/forms/G-ISC.independent.study.contract.GS50.pdf>) to the Office of the University Registrar before registering for the course.

**Note:** Not more than 6 hours of independent study may be used on a master's program of study.

## Professional Development Course Work

Professional development course work is designated on the academic record by a professional development designator. A maximum of 6 hours of professional development graduate course work may be included on a Master's program of study. The academic program and the dean of The Graduate School must approve the inclusion of professional development graduate course work on a program of study.

## Reduced Tuition Course Work

Course work taken with reduced tuition, usually a contract course, is designated on the academic record by a reduced tuition designation. A maximum of 6 hours of reduced tuition rate course work may be included on a graduate program of study. The academic program and the dean of The Graduate School must approve the inclusion of reduced tuition rate graduate course work on the program of study.

## Foreign Language and/or Research Methods

Language and research methods requirements for the Master's degree vary from program to program and must be approved by the academic program's graduate director and the dean of The Graduate School. Programs which directly involve language study may have additional language requirements. Satisfying the requirement may entail one or more of the following: successful completion of an intensive reading course in a language approved by The Graduate School (e.g., SPAN 615), successful completion of a course at the intermediate level of language proficiency within six years previous of the award of the degree, or a passing grade on a language reading proficiency examination administered by the USC Department of Languages, Literatures, and Cultures (<http://www.cas.sc.edu/dllc/>) (DLLC). Students should contact DLLC for language course and testing information. Programs which directly involve language study may have additional language requirements.

Students have three opportunities to pass the language course or satisfy the reading proficiency examination. The Graduate School must be notified by the academic program of a student's successful completion of the language requirement.

In some programs a student is allowed to substitute competency in computer science, statistics, or another research method or competency for a reading knowledge of a foreign language. The requirement may be satisfied by the appropriate course work or examination. Permission for substitution must be approved by the dean of The Graduate School. As with successful completion of the language requirement, The Graduate School must also be notified of a student's successful completion of a substitution for the language requirement.

With approval of the program and the dean of The Graduate School, English may be accepted as a foreign language for students whose native language is not English and such students should submit the Certification of English as a Foreign Language (G-CIE (<http://gradschool.sc.edu/forms/G-CIE.certification.in.english.pdf>)) form. In cases where it is relevant to a student's research, American Sign Language may be used to satisfy the language requirement.

The student should make arrangements to complete the foreign language and/or research methods requirements at the earliest opportunity. Certification of foreign language and/or research methods competency for master's students remains valid for six years, after which it must be revalidated.

## Comprehensive Assessment

All candidates for a Master's degree must complete a comprehensive assessment in the major field of study that is distinct from program course requirements. A comprehensive assessment is one that requires a student to synthesize and integrate knowledge acquired in coursework and other learning experiences and to apply theory and principles in a situation that approximates some aspect of professional practice or research in the discipline. It must be used as a means by which faculty judge whether the student has mastered the body of knowledge and can demonstrate proficiency in the required competencies. Many different models are possible, including written and oral comprehensive examinations, portfolios, supervised practice placements with comprehensive evaluation, a major written paper such as a thesis or an applied research project, or development of case studies.

Each degree program must require a comprehensive assessment. Completion of course requirements or satisfaction of a specified GPA does not satisfy the comprehensive assessment requirement. The Graduate School must be notified by the graduate director of the student's academic program of successful completion of the comprehensive assessment. Completion remains valid for two years after which the assessment must be repeated.

## Thesis or Research Project

A thesis or research project is a requirement of most Master of Arts or Master of Science degree programs and some professional Master's programs. The thesis is the ultimate requirement of the Master's program and becomes a permanent record of the student's independent research or creative effort. The best academic tradition and professional practice require The Graduate School to preserve and share graduate student work with other scholars. To do that successfully means maintaining high standards concerning the form and appearance of the thesis. Thesis formatting and organization guidelines (<http://gradschool.sc.edu/students/thesisdiss.asp?page=acad&sub=etd>) are available on the website of The Graduate School.

No more than 9 hours of thesis preparation (799) may be included on the Masters program of study, but some programs may allow less hours. Completion or satisfactory progress in thesis preparation will be

indicated by the grade of T; unsatisfactory progress in thesis preparation will be indicated by the grade of U, but thesis preparation grades are not calculated into the graduate cumulative grade point average. Programs may establish policies regarding eligibility for continued enrollment. Any student who uses University facilities or confers with faculty on thesis work in any semester must be officially enrolled for at least one hour of graduate credit. It is recommended that the one hour or credit be in thesis preparation (799).

Note: With approval of the Graduate Council and dean of The Graduate School, some programs elect to have students complete a project in lieu of a thesis or offer a nonthesis option which requires additional course work instead of a thesis.

## Thesis Committee

The Thesis Committee is a program faculty committee approved by the department or school. The Thesis Committee should be composed only of faculty from the Columbia campus. Regular and Associate graduate faculty of any rank who hold the doctorate or the discipline's terminal degree and tenured faculty at the rank of full professor who do not hold the terminal degree may serve on or chair thesis committees. Research, clinical, and adjunct faculty at any rank who hold the terminal degree may serve on and chair a thesis committee with approval of the program and the dean of The Graduate School. Instructors and lecturers who do not hold the terminal degree may serve as members of thesis committees with justification from the program and approval of the dean of The Graduate School. Emeritus or emeriti faculty may continue to chair the thesis committee of a student under their direction at retirement and may be appointed as a member or a thesis committee with the approval of the program and the dean of The Graduate School.

When the written thesis is completed, most programs require a thesis defense. Please consult the graduate director of the academic program for departmental, school, or college specific approval processes and submission deadlines. Completion of the thesis must be approved by the Thesis Committee and the signatures of the committee members must be obtained on the Thesis Signature Approval (G-TSF (<http://gradschool.sc.edu/forms/G-TSF.pdf>)) form. The electronic submission of the thesis will not have title page signatures; this is to prevent theft and unauthorized use of signatures that otherwise might occur. The graduate director of the academic program will also be asked to sign the G-TSF form to affirm that your thesis follows The Chicago Manual of Style or another style manual endorsed by your program.

The G-TSF with signatures must be delivered to The Graduate School program coordinator who oversees the degree program. The G-TSF is to be submitted to the coordinator in an envelope marked "Confidential." Student may hand-deliver the form to The Graduate School program coordinator ([http://gradschool.sc.edu/graduate\\_programs.asp](http://gradschool.sc.edu/graduate_programs.asp)) or may send it through the mail. The G-TSF must be received by the final-submission deadline in order for the student to be cleared for graduation.

## Thesis Submission

The thesis is submitted to The Graduate School through the electronic thesis and dissertation (ETD) submission process. Instructions for submission (<http://gradschool.sc.edu/students/thesisdiss.asp?page=acad&sub=etd>) should be read thoroughly and followed explicitly, including deadlines for format check and final submission. The preliminary thesis document will need to be submitted electronically to The Graduate School for a format check not later than five weeks before graduation through the ProQuest/UMI ETD portal. The Graduate School coordinator (<http://gradschool.sc.edu/facstaff/gfd.asp>)

page=gf&sub=gfd) for the academic program will respond with any needed corrections or revisions. At least 20 days prior to graduation, the candidate must submit the final revision of the dissertation through the ETD process. Students will receive notification of receipt of the final dissertation submission from The Graduate School program coordinator.

The thesis must be reproduced by ProQuest/UMI for archival purposes as per the laws of the State of South Carolina and must be archived by the University library. Additional information on publication and copyright options is available on the website of The Graduate School.

No paper copies of the thesis are required by The Graduate School. If the academic program requires students to submit a bound copy of the thesis, the department and student are responsible for obtaining the copy. The website of The Graduate School provides several options for thesis binding and/or obtaining paper copies.

## Application for Graduation and Degree Audit

All students enrolled in a Master's degree program must file the application for degree/graduation (<http://registrar.sc.edu/pdf/DegreeAppUpdated.pdf>) available on the website of the Office of the University Registrar (<http://registrar.sc.edu/>) with The Graduate School within the first 15 class days of the fall or spring semester in which the degree is to be awarded, or within the first 10 class days of Summer Session if the degree is to be awarded at the end of the summer.

Although some departments do not require students to provide the academic program with copies of the application for graduation, The Graduate School recommends that students do provide a copy to the academic program to facilitate assessment of degree requirements. Applicants are encouraged to consult with the academic program to confirm that all requirements for graduation have been met.

Deadlines are posted for each term on the official academic calendar (<http://registrar.sc.edu/html/calendar5yr/5YrCalendar3.stm>) of the University found on the website of the Office of the University Registrar. Late applications will be processed for the following term.

The Graduate School forwards the application for degree/graduation form to the Office of the University Registrar to start the degree audit process. In [my.sc.edu](https://my.sc.edu/) (<https://my.sc.edu/>), students should view their Graduation Degree Application to confirm the accuracy of the information submitted and to correct any errors so the diploma is printed correctly. It is also important to inspect the graduation degree application information to determine if there are any holds that will prevent issue of an official transcript or mailing of the diploma. At the end of the semester, the degree program and The Graduate School both assess for degree audit whether all requirements have been completed, and then forward a recommendation to the Registrar to approve or disapprove award of the degree.

At the time of graduation, the student's cumulative gradepoint average (GPA) must be at least 3.00. Additionally, the student's average on all grades recorded on the program of study for courses numbered 700 or above must be at least 3.00 and all courses listed on the program of study must be at least 3.00.

## Degree Conferral

Upon confirmation of a clear degree audit, the degree will be posted by the Office of the University Registrar to the student's official academic record. The degree award is posted to the student's transcript within 6 weeks after the commencement ceremony. Diplomas will be mailed to

the address recorded on the application for graduation via first class mail to U.S. addresses and via registered airmail to international addresses.

Graduates may expect to receive the diploma within three months after the commencement exercises. Degrees cannot be awarded retroactively.

**Note:** To pursue further graduate study after completion of a graduate degree, a student must submit a new application to The Graduate School.

## Academic Regalia

A special doctoral hooding ceremony and commencement is held three times a year for graduating doctoral students. Attendance at graduation ceremonies is optional. Information on commencement exercises (<http://gradschool.sc.edu/current/commencement.asp>) is posted to The Graduate School webpage.

Academic regalia worn for the commencement ceremony is sold by the University Bookstore in the Russell House located on Greene Street in Columbia. To place an order for academic regalia to wear for graduation, please telephone the University Bookstore at 803-777-4160 or visit their website (<https://usc.shopoakhalli.com/purchasewizard/Welcome/>).

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# COLLEGE OF ARTS AND SCIENCES

## College of Arts and Sciences

Dr. Joel Samuels, *Interim Dean*

Dr. Claudia Benitez-Nelson, *Associate Dean for Instruction, Community Engagement, and Research*

Dr. Cynthia J. Davis, *Associate Dean for Arts, Humanities, and Academic Initiatives*

Dr. Christy Friend, *Interim Associate Dean for Enrollment Management, Advising, and Retention*

Dr. Todd Shaw, *Interim Associate Dean for Diversity, Equity, and Inclusion and for Social Sciences*

Dr. Jeff Twiss, *Interim Associate Dean for Research and Graduate Education*

Dr. Qiana Whitted, *Interim Associate Dean for College Initiatives and Interdisciplinary Programs*

### Overview of the College

The College of Arts and Sciences is the oldest, largest and most academically diverse college at the University of South Carolina. Its disciplines in the arts, humanities and sciences have formed the university's intellectual core since its founding in 1805. By providing most courses in the Carolina Core, the college provides a foundation for every University of South Carolina undergraduate student. Today, the college is also a vibrant community of learning on the forefront of advances in teaching, learning and research.

The college offers over 40 majors and minors and more than 70 graduate programs, giving students a broad selection of study areas. Rooted in the liberal arts tradition, the college provides a broad education that champions critical thinking, creativity, communication skills, resilience, teamwork and other skills and attributes that form the foundation of success in graduates' lives and careers.

The college enriches student learning through active teaching, academic advising, career development and learning beyond the classroom. The Student Excellence Collaborative provides student services and facilitates advising, study abroad, internships and career development with staff dedicated to the needs of arts and sciences students. The Incubator for Teaching Innovation assists faculty with enhancing classroom learning through a variety of teaching methods.

As the heart of a major research university, the college is a hub of research excellence and creative activity. Its faculty-led research programs advance knowledge and produce new work with impact in literature, medicine, education, climate science, public policy, and more. Its arts programs also make a cultural contribution to South Carolina and beyond. These programs provide hands-on, engaged learning for both undergraduate and graduate students, but they also serve as a catalyst for positive change in the local community, the state, the nation and the world. The College of Arts and Sciences transforms the lives of our students and improves the world they will inhabit by creating and sharing knowledge at the frontiers of inquiry.

### Academic Departments

The College of Arts and Sciences consists of the Departments of Anthropology; Biological Sciences; Chemistry and Biochemistry; Criminology and Criminal Justice; English Language and Literature; Geography; History; Languages, Literatures, and Cultures; Mathematics; Philosophy; Physics and Astronomy; Political Science; Psychology;

Religious Studies; Sociology; Statistics; and Theatre and Dance, as well as the School of the Earth, Ocean and Environment and the School of Visual Art and Design. Interdisciplinary Programs include African American Studies, Film and Media Studies, Global Studies, Jewish Studies, Linguistics, and Women's and Gender Studies.

### Centers and Institutes

Centers and institutes within the college include the Belle W. Baruch Institute for Marine and Coastal Sciences, Center for Civil Rights History and Research, Center for Digital Humanities, Center for Geographic Education, Center for Science Education, Electron Microscopy Center, GISciences Research Laboratory, Hazards and Vulnerability Research Institute, Interdisciplinary Mathematics Institute, Institute for African American Research, Institute for Mind and Brain, Institute for Southern Studies, McCausland Center for Brain Imaging, Parenting and Family Research Center, Psychological Services Center, S.C. Institute of Archaeology and Anthropology, and the Walker Institute of International and Area Studies.

The college also is home to the McKissick Museum, which fosters awareness and appreciation for the history of the university and the community, culture and environment of the American South.

### Accreditations

The School of Visual Art and Design is accredited by the National Association of Schools of Art and Design (NASAD). The Department of Chemistry and Biochemistry has been approved by the American Chemical Society's (ACS) Committee on Professional Training, and the curriculum for the Bachelor of Science in Chemistry meets ACS requirements. In the Department of Psychology, the graduate degrees in Clinical/Community Psychology are accredited by the American Psychological Association (APA); graduate degrees in School Psychology are accredited by the American Psychological Association (APA) and the National Association of School Psychologists (NASP) through a partnership with the National Council on Accreditation of Teacher Education (NCATE.) The Master of Public Administration degree offered by the Department of Political Science is accredited by the National Association of Schools of Public Affairs and Administration (NASPAA.) The Department of Theatre and Dance is accredited by the National Association of Schools of Theatre (NAST) and the University/Resident Theatre Association (URTA.) Through selected degree programs, the College of Arts and Sciences participates in the teacher education programs of the University that are accredited by the National Council for Accreditation of Teacher Education.

### Oak Ridge Associated Universities

Since 1950, students and faculty of the University of South Carolina have benefited from its membership in Oak Ridge Associated Universities (ORAU). ORAU is a consortium of 98 colleges and universities and a contractor for the U.S. Department of Energy (DOE) located in Oak Ridge, Tennessee. ORAU works with its member institutions to help their students and faculty gain access to federal research facilities throughout the country; to keep its members informed about opportunities for fellowship, scholarship, and research appointments; and to organize research alliances among its members.

Through the Oak Ridge Institute for Science and Education (ORISE), the DOE facility that ORAU operates, undergraduates, graduates, postgraduates, and faculty enjoy access to a multitude of opportunities for study and research. Students can participate in programs covering a wide variety of disciplines including business, earth sciences, epidemiology, engineering, physics, geological sciences, pharmacology,

ocean sciences, biomedical sciences, nuclear chemistry, and mathematics. Appointment and program length range from one month to four years. Many of these programs are especially designed to increase the numbers of underrepresented minority students pursuing degrees in science- and engineering-related disciplines.

ORAU's Office of Partnership Development seeks opportunities for partnerships and alliances among ORAU's members, private industry, and major federal facilities. Activities include faculty development programs, such as the Ralph E. Powe Junior Faculty Enrichment Awards, the Visiting Industrial Scholar Program, consortium research funding initiatives, faculty research, and support programs as well as services to chief research officers.

For more information about ORAU and its programs, visit the ORAU homepage at <http://www.orau.org> or contact the office of the Vice President for Research.

## Degrees and Certificates Offered

The College of Arts and Sciences offers programs of study leading to the degrees of Doctor of Philosophy, Master of Arts, Master of Fine Arts, Master of Industrial Statistics, Master of Mathematics, Master of Public Administration, Master of Science, and Professional Science Master. In cooperation with the College of Education, the college offers the Master of Arts in Teaching in selected disciplines for uncertified teachers and the Interdisciplinary Master of Arts in Art Education and the Interdisciplinary Master of Arts in Sciences for teachers who have been certified. The Department of Statistics offers the Certificate of Graduate Study in Applied Statistics. The Linguistics Program offers the Certificate of Graduate Study in Teaching English to Speakers of Other Languages. The Certificate of Graduate Study in Museum Management is offered through the Department of History. The Certificate of Graduate Study in Women's and Gender Studies is available through the Women's and Gender Studies Program. The Department of Anthropology offers the Certificate of Graduate Study in Historical Archaeology and Cultural Resource Management and the Certificate of Graduate Study in Visual Anthropology. For further information about admission and degree requirements, please consult the Graduate Admissions and Degree Requirements sections of this bulletin and the individual departments and programs listed in the College of Arts and Sciences.

For more information about academic programs in the College of Arts and Sciences visit Programs by College/School or visit the departmental links below.

## Departments and Program Areas

Click the links below to view programs and courses administered by each department.

Some programs offered by the College of Arts and Sciences are available as Graduate Dual Degree Programs.

- Anthropology (p. 27)
- Biological Sciences (p. 34)
- Chemistry and Biochemistry (p. 40)
- Criminology and Criminal Justice (p. 44)
- English Language and Literature (p. 49)
- Film and Media Studies (p. 57)
- Geography (p. 58)
- History (p. 64)
- Languages, Literatures, and Cultures (p. 71)

- Linguistics (p. 84)
- Mathematics (p. 92)
- Philosophy (p. 102)
- Physics and Astronomy (p. 109)
- Political Science (p. 113)
- Psychology, Clinical Community (p. 120)
- Psychology, Experimental (p. 128)
- Psychology, School (p. 131)
- Religious Studies (p. 140)
- School of the Earth, Ocean and Environment (p. 140)
- School of Visual Art and Design (p. 154)
- Sociology (p. 166)
- Southern Studies (p. 171)
- Statistics (p. 171)
- Theatre and Dance (p. 178)
- Women's and Gender Studies (p. 182)

## Anthropology

Department Website (<http://artsandsciences.sc.edu/anth/>)

Jennifer Reynolds, *Chair*

Sharon DeWitte, *Graduate Director*

The Department of Anthropology offers the M.A. and Ph.D. in anthropology in a program of study that provides students with a thorough grounding in the theories and research methods of the discipline. The department provides training in anthropology across all four subfields (archaeology, cultural anthropology, linguistics, and biological/physical anthropology), stressing interconnections between subfields and interdisciplinary activity. Students will also develop an expertise within a specific subfield or a crosscutting specialty such as bioarchaeology, ethnohistory, or medical anthropology. Department faculty have geographical specialization in Latin America, the Caribbean, Africa, North America, and Asia and pursue broad themes of inequality, globalization, cultural interaction, and human diasporas. The department also offers a certificate program in historical archaeology and cultural resource management. Special opportunities are also available for students interested in developing their skills and knowledge in museology and folklore. A more complete description of the graduate program, including the specialty areas of each faculty member, is provided at <http://www.cas.sc.edu/anth> (<http://www.cas.sc.edu/anth/>).

## Programs

- Anthropology, M.A. (p. 31)
- Anthropology, Ph.D. (p. 32)
- Historical Archaeology and Cultural Resource Management, Certificate (p. 33)

## Courses

### ANTH 512 - Gender Issues in China (3 Credits)

Anthropology of gender in Chinese-speaking cultures in Chinese-speaking Asia.

### ANTH 513 - Anthropological Ethnobotany (3 Credits)

Survey of how each anthropological subfield studies the interrelationships between plants and peoples. Application of methods, including interviewing and data analysis.

**ANTH 515 - Tradition and Transformations in Islamic Cultures (3 Credits)**

Islam as a dynamic cultural tradition: emphasis on the tension between Islamization and the larger Islamic tradition.

**Cross-listed course:** RELG 551

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy, GLD: Global Learning

**ANTH 517 - An Anthropological View of Blacks in Film (3 Credits)**

Cultural representations, constructions, production, and consumption of African-American identity in the popular culture medium of feature films.

**Cross-listed course:** AFAM 517

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy, GLD: Professional and Civic Engagement Leadership Experiences

**ANTH 518 - Visual Cultures (3 Credits)**

Survey of visual anthropology including theoretical frameworks of ways of seeing, ethnographic photography and filmmaking, contemporary technologies, and their effects on culture.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

**ANTH 520 - Field Problems in Ethnology (6 Credits)**

A two-semester class and field session. Research design, field methods, interpretation of data, and the development of theory from the data.

**ANTH 525 - Ethnoecology (3 Credits)**

Seminar exploring human-plant-animal-natural interactions within an anthropological framework.

**ANTH 533 - North American Archaeology (3 Credits)**

Prehistoric and historic archaeology.

**ANTH 534 - Prehistoric Archaeology of South America (3 Credits)**

Prehistoric archaeology of the South American continent.

**Cross-listed course:** LASP 425

**ANTH 535 - Conflict Archaeology (3 Credits)**

Anthropological and archaeological theories and methods in the study of conflict, war, and warfare. Causes, effects, outcomes of sustained social acts of violence of groups, tribes, states, and nations. Evolutionary, biological, social origins of warfare. History, strategy, and tactics, battlefield archaeology.

**ANTH 536 - Public Archaeology (3 Credits)**

Philosophy and mechanics of modern archaeological Cultural Resource Management (CRM). CRM legislation, regulation, and process. Contemporary issues and problems in Public Archaeology including Native American reburial negotiations, conflict resolution, ethics, looting, business practices, standards, contexts and protection.

**ANTH 541 - Field Problems in Archaeology (3 Credits)**

Archaeological field methods and techniques such as excavation, flotation, sampling, surveying, photography, and remote sensing.

**Prerequisites:** ANTH 320.

**ANTH 546 - Forensic Archaeological Recovery (FAR) (3 Credits)**

Introduction to Forensic Archaeological Recovery (FAR). Concepts, methods, and contemporary issues.

**ANTH 550 - Archaeological Laboratory Methods (3 Credits)**

Laboratory on basic prehistoric and historic artifact analysis, including analytical methods, laboratory equipment, and data interpretation. May be repeated.

**Prerequisites:** ANTH 319 or ANTH 322.

**ANTH 551 - Medical Anthropology: Fieldwork (3 Credits)**

Application of observation techniques, field notes, informant interviewing, and secondary data analysis to interpreting differential perceptions of health problem solving in the community and clinic.

**ANTH 552 - Medical Anthropology (3 Credits)**

Socio-cultural factors in health, illness, healing, and in medical systems. Cross-cultural and ethnographic evidence for public health research and program applications.

**Cross-listed course:** HPEB 552

**Graduation with Leadership Distinction:** GLD: Research

**ANTH 553 - Anthropological Approaches to Narrative and Performance (3 Credits)**

The ways people from various cultures reflect on, reinforce, and construct their social realities through narrating, which will be considered as both artistic expression and social action.

**Cross-listed course:** LING 545

**ANTH 555 - Language and Gender (3 Credits)**

Approaches to gender and language emphasizing the social grounding of both; how language reflects sociocultural values and is a tool for constructing different types of social organization.

**Cross-listed course:** LING 541, WGST 555

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy, GLD: Professional and Civic Engagement Leadership Experiences

**ANTH 556 - Language and Globalization (3 Credits)**

Anthropological approach to issues of language and globalization. Linguistic consequences of globalization under consideration include communicative patterns, linguistic change, and language and political economy.

**Cross-listed course:** LING 556

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy, GLD: Global Learning, GLD: Professional and Civic Engagement Leadership Experiences

**ANTH 557 - Psychological Anthropology (3 Credits)**

Psychological aspects of behavior from a cross-cultural perspective.

**ANTH 561 - Human Osteology (4 Credits)**

An intensive examination of the human skeleton and techniques for anthropological interpretation.

**ANTH 565 - Health and Disease in the Past (3 Credits)**

Varieties and effects of disease patterns among past populations illustrating biological, environmental, and cultural interrelationships.

**ANTH 567 - Human Identification in Forensic Anthropology (3 Credits)**

Theories and methodologies necessary for the identification of human skeletal remains in a forensic setting.

**ANTH 568 - Nutritional Anthropology (3 Credits)**

Nutritional problems in developing nations. Measures of nutritional status. Social, economic, and environmental aspects of food consumption and nutrition. Biocultural responses to food deprivation and undernutrition.

**ANTH 569 - International Development and the Environment (3 Credits)**

Intersections of international development and environmental change; study of general theoretical perspectives balanced with case studies from the Global South.

**Cross-listed course:** GEOG 569

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy, GLD: Global Learning

**ANTH 570 - Ethnographic Film (3 Credits)**

Problems in conveying and interpreting ethnographic information on film or tape. Includes syntax, suitability of subject matter to the medium, irrelevant or distracting information, and observer bias.

**ANTH 572 - Temporal Processes in Culture (3 Credits)**

Clocks, cycles, and contingencies as they affect human societies now and have done so in the past. Theories and models from biology and the other natural sciences will be used to interpret the history of culture.

**ANTH 575 - Economic Anthropology (3 Credits)**

A cross-cultural study of the economic behavior of pre-literate and literate societies.

**ANTH 576 - Archaeology of the African Diaspora (3 Credits)**

Foodways, architecture, crafts, and narrative of African-American cultures.

**ANTH 577 - Advanced Topics in the Anthropological Study of Social Organization (3 Credits)**

Selected recent theoretical and methodological developments in the study of social organization.

**ANTH 579 - Cultural Ecology (3 Credits)**

An interdisciplinary approach to prehistoric, historic, and contemporary relationships between the development of socio-cultural configurations and ecosystems.

**ANTH 580 - Culture and Identity in the African Diaspora (3 Credits)**

Students will explore the African Diaspora as a social, cultural, and historical formation with Africa at its center, focusing on US, Latin American, and Caribbean African-descended communities.

**Cross-listed course:** AFAM 580

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy, GLD: Global Learning, GLD: Professional and Civic Engagement Leadership Experiences

**ANTH 581 - Globalization and Cultural Questions (3 Credits)**

This course examines cultural understandings of and responses to globalization, examining topics such as its history and theories, migration, economic integration and inequality, identity, social movements, and the environment.

**Cross-listed course:** GEOG 581

**Graduation with Leadership Distinction:** GLD: Global Learning

**ANTH 586 - Discourse, Gender and Politics of Emotion (3 Credits)**

Anthropological approach to issues of discourse, gender and emotion. Issues under consideration include the social control, force, and forms of emotional discourse and the relationship between emotion and culture from gender-oriented perspectives.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

**ANTH 591 - Selected Topics (1-3 Credits)**

Topics of special interest. May be taken more than once as topics change.

**ANTH 600 - Survey of Linguistics (3 Credits)**

Survey of core areas of linguistics and extensions to closely related disciplines. Introduction to the linguistic component of human cognition. Formal description and analysis of the general properties of speech and language, the organization of language in the mind/brain, and cross-linguistic typology and universals.

**Cross-listed course:** ENGL 680, LING 600

**ANTH 699 - Reading and Research (3-6 Credits)****ANTH 701 - Physical Anthropology and Archaeology for Teachers (3 Credits)**

Human origins, human evolution, human prehistory, and cultural existence from its less complex forms to early civilizations. An introduction to the concepts, methods, and data of physical, biological, and archaeological anthropology primarily for teachers. May be taken with, or independently of, ANTH 702.

**ANTH 702 - Social and Linguistic Anthropology for Teachers (3 Credits)**

Selected contemporary cultures, including their languages. An introduction to the concepts, methods, and data of sociocultural anthropology and anthropological linguistics, primarily for teachers. May be taken with, or independently of, ANTH 701.

**ANTH 703 - Anthropological Inquiry (3 Credits)**

A discussion of the general topics of anthropological inquiry, theories, and methods.

**ANTH 704 - Anthropological Connections (3 Credits)**

Faculty representing subdisciplines of anthropology will explore with students the connections between subfields, theoretical and regional perspectives, and analyses of the past and present.

**Prerequisites:** ANTH 703.

**ANTH 706 - Engendering Global Capitalism (3 Credits)**

The origins of global capitalism, the nature of money and debt, the roles of gender, race and class in social formations, and the relationship between production and reproduction.

**Cross-listed course:** WGST 706

**ANTH 711 - Professionalism and Ethics (3 Credits)**

Presentations of critical skills to achieve career goals in a variety of anthropological applications, develop portfolios, prepare competitive job applications, and produce effective grant proposals. Ethics issues in anthropological research publishing and teaching.

**ANTH 712 - Thesis Skills Seminar (1-3 Credits)**

Skills needed for writing a master's thesis in anthropology, including literature review, current theory, research design, data analysis, and written presentation.

**ANTH 714 - Teaching Practicum in Anthropology (1 Credit)**

Uses the context of leading discussions in ANTH 101 and 102 to introduce and explore issues relating to pedagogy. Restricted to TA's for ANTH 101 and ANTH 102.

**ANTH 718 - Seminar in European Archaeology (3 Credits)**

Consideration and critique of current research in European archaeology.

**ANTH 719 - Field Problems in Ethnology (3 Credits)**

Advanced graduate seminar on methods of ethnology, including research design, field methods, and interpretation of data, and the development of theory from data. Includes class and field sessions.

**ANTH 720 - Development of Anthropological Archaeology (3 Credits)**

Anthropological archaeology: history, theory, contemporary issues, and relationship to other disciplines.

**ANTH 721 - Community Anthropology for Professionals (3 Credits)**

Those skills of social/cultural anthropology and anthropological linguistics which can aid practitioners in health, law, education, and other professional fields to function in community settings. Emphasis on cultural and sub-cultural differences in South Carolina, the Southeast, and the United States.

**ANTH 722 - Summer Field School in Archaeology (3-6 Credits)**

Experience in supervising archaeological research, making field decisions, and directing the collection, processing, and interpretation of archaeological data in the field.

**ANTH 723 - Summer Field School in Ethnography (3-6 Credits)**

Experience in designing and carrying out ethnographic research including project design, data collection, analysis, and description.

**ANTH 724 - Visual Anthropology Research (3 Credits)**

Exploring the range of anthropological research utilizing visual records (still photographs and video/film) including theoretical underpinnings and hands-on practice: how and why to use visual records in research.

**ANTH 730 - Cultural Theory through Ethnography (3 Credits)**

Theories of culture presented through ethnographies from different parts of the world. Issues in writing, reading, and interpreting ethnographic information.

**ANTH 733 - Seminar in North American Prehistory (3 Credits)**

Consideration and critique of current research in North American archaeology.

**ANTH 740 - Current Issues in Archaeology (3 Credits)**

Review of theoretical trends in American archaeology.

**ANTH 741 - Ethnology for Archaeologists (3 Credits)**

Ethnographic data important to archaeological thinking; archaeological models resting on ethnographic data. Emphasis on variation of ethnographic data.

**ANTH 742 - Public Archaeology (3 Credits)**

The legal, philosophical, and ethical foundations of archaeology in the United States. Considerations on relating archaeology to the non-professional.

**ANTH 743 - Research Practicum in Archaeology (1 Credit)**

Observation and participation in the on going management of archaeological resources.

**ANTH 744 - Research Practicum in Conservation Archaeology (1 Credit)**

Observation and participation in the on going management of archaeological resources.

**ANTH 745 - Seminar in Historical Archaeology (3 Credits)**

Advanced seminar on theoretical considerations and methodological approaches to the study of historical archaeological materials.

**ANTH 747 - Language as Social Action (3 Credits)**

Examines language as a social, cultural, and political matrix. Topics include ideology, gender, race, power, agency, and resistance. Students will apply linguistic theories in their own analyses of everyday speech.

**Cross-listed course:** LING 747

**ANTH 748 - Introduction to Linguistic Anthropology (3 Credits)**

A comprehensive introduction to linguistic anthropology, its relationship(s) to sociolinguistics, discourse analysis, and conversation analysis. Contributions made to social theory and theories of language and discourse will be understood.

**Prerequisites:** LING 600.

**Cross-listed course:** LING 748

**ANTH 750 - Archaeological Laboratory Analysis (4 Credits)**

Methods and techniques necessary to operationalize and test archaeological hypotheses in a laboratory context.

**ANTH 751 - Archaeological Research Design and Analysis (3 Credits)**

An overview of skills required to design and organize archaeological field and laboratory research.

**ANTH 756 - Analysis of Conversation (3 Credits)**

Types of interactive organization found within conversation and the methods and procedures used by participants to achieve order.

**Cross-listed course:** LING 743

**ANTH 760 - Biocultural Adaptation (3 Credits)**

Approaches to human adaptation emphasizing the interaction of biology and culture. Studies of biocultural adaptation to environmental, social, and economic constraints. Research design and methodology in adaptation studies.

**ANTH 761 - Bioarchaeology Principles (3 Credits)**

Methods and theories of application of physical anthropological data to archaeological problems.

**ANTH 762 - Biological Anthropology Principles and Theory (3 Credits)**

Major theories and principles of biological anthropology.

**ANTH 771 - Migration and Culture (3 Credits)**

Theories of migration; peopling of the earth; family structure and migration in different economic regimes and cultures; seasonal and cyclical patterns.

**ANTH 772 - Gender and Culture (3 Credits)**

Different cultures' ideas about gender and use of gender to organize social groups in a wide range of societies, including American subcultures.

**Cross-listed course:** WGST 772

**ANTH 773 - Exploring Ethnohistory (3 Credits)**

Cross-cultural study of history. Includes theoretical perspectives and cases from the Americas, Europe, Africa, and Asia.

**Cross-listed course:** HIST 772

**ANTH 774 - Seminar in Environmental Anthropology and Development (3 Credits)**

Findings of ecological and economic anthropology applied to problems of contemporary development. Emphasis on less developed countries.

**ANTH 775 - Anthropology of Art (4 Credits)**

Anthropological examination of the art of small-scale societies with attention, where appropriate, to the art of more complex societies.

**ANTH 777 - Cinema and Archaeology (1 Credit)**

Critical examination of films dealing with archaeological subjects.

**ANTH 780 - Ethnography of Communication (3 Credits)**

Ethnographic analysis of communication in groups and institutions in different cultures.

**ANTH 781 - Human Interaction (3 Credits)**

Introduction to basic research on how human beings interact with each other and an historically constituted material world.

**ANTH 782 - Language Ideology: The Political Economy of Language Beliefs and Practices (3 Credits)**

Linguistic anthropological approaches that examine how ideological systems mediate social structures and linguistic /discursive forms and functions. Topics range from language and political economy, identity and identifications, institutions, and nation-building/nationalism.

**Cross-listed course:** LING 782

**ANTH 787 - Material Culture Studies (3 Credits)**

Seminar in historical study of material culture; principal disciplinary and theoretical perspectives; emphasis on material culture of North America.

**Cross-listed course:** HIST 787

**ANTH 791 - Special Topics in Anthropology (3 Credits)**

Seminar for advanced students. Topics vary according to student and instructor interest. May be repeated for different topics.

**ANTH 797 - Reading and Research (3 Credits)**

Independent study course designed to facilitate student's research. An independent study contract with content approved by instructor is required.

**ANTH 798 - Research Practicum in Anthropology (3-6 Credits)**

Participation under faculty supervision of anthropological research. Development of the research project, collecting, recording, analyzing, and reporting on the data.

**ANTH 799 - Thesis Preparation (1-9 Credits)****ANTH 899 - Dissertation Preparation (1-12 Credits)**

T/U grading.

## Anthropology, M.A.

### Learning Outcomes

- Students in the Standard MA track will recognize and describe research themes and content area from all sub-fields, to generalize research findings and approaches across sub-fields, and to demonstrate competency in coursework in at least two sub-fields of anthropology. Students in the Professional MA Track in Archaeology will recognize and describe research themes and content area within archaeology that are relevant to the wider field of anthropology.
- All students will be able to describe and evaluate the historical development and contemporary expressions of anthropological theory.
- All students will be able to conduct document-based and field research, to engage in professional-level scholarly dialogue, to lead classroom discussions, and to present scholarly papers. Students will be able to plan and complete an original piece of scholarly research. Students will be able to identify and discuss important ethical issues in anthropology.
- All students will be able to design, conduct, analyze, and report the results of a research project. They will be able to use a variety of information technology resources to gather, analyze and present information.

### Admission

Applicants for the Master's degree must have a baccalaureate degree from an approved college of university. Applicants must be recommended to the Graduate School for acceptance by the Department of Anthropology. Admission requirements include official transcripts from all previous colleges or universities (whether a degree was earned or not), a personal statement of the student's interest and intent, a writing sample, at least two letters of recommendation, and official GRE score reports. Applicants to the non-thesis archaeology track must demonstrate completion of a field school or commensurate supervised field experience. A strong applicant should have GRE scores near 160 verbal and 148 quantitative and a 4.0 - 4.5 in analytical and 3.50 GPA. Practically speaking, an applicant intending to seek a MA should be supported by at least two faculty members willing to serve as mentors in order to be admitted into the program. The application and financial aid deadlines are December 15.

### Standard MA Track Requirements (33 Hours)

Students are required to complete a minimum of 27 hours of course work and a master's thesis (6 hours) for a total of 33 hours. Of these, at least 14 hours must be courses at the 700-level, excluding the thesis hours (ANTH 799). Students must participate in supervised fieldwork and successfully pass a written comprehensive exam. Specific requirements for the Standard MA Track are listed below:

### Required Core Courses (6 hours)

Course	Title	Credits
ANTH 703	Anthropological Inquiry	3
ANTH 711	Professionalism and Ethics	3
<b>Total Credit Hours</b>		<b>6</b>

### Subfields - Core Course(s) (at least 3 hours)

Students must specialize in one of the following four subfields of anthropology and complete one or more \*core courses\* in theory and methodology from within that subfield.

#### Archaeology

Course	Title	Credits
ANTH 720	Development of Anthropological Archaeology	3
ANTH 745	Seminar in Historical Archaeology	3
<b>Total Credit Hours</b>		<b>6</b>

#### Physical/Biocultural Anthropology

Course	Title	Credits
ANTH 762	Biological Anthropology Principles and Theory	3
<b>Total Credit Hours</b>		<b>3</b>

#### Cultural Anthropology

Course	Title	Credits
ANTH 730	Cultural Theory through Ethnography	3
<b>Total Credit Hours</b>		<b>3</b>

#### Linguistic Anthropology

Course	Title	Credits
ANTH 747	Language as Social Action	3
ANTH 748	Introduction to Linguistic Anthropology	3
<b>Total Credit Hours</b>		<b>6</b>

### Subfield Coursework (15 hours)

In this course work the student develops, in close consultation with their advisor, a specialty within anthropology. Coursework to build this strength will primarily be taken in Anthropology, but may include one or more courses from outside the Department.

### Supervised Fieldwork

Students are required to undertake supervised fieldwork, usually during the summer between their first and second year. This requirement can be met through an approved field school or other supervised fieldwork either as a research assistant on field projects or in the course of collecting their own data. Archaeology students with no previous experience are encouraged to take the field school offered by this program or, when the student's interests warrant it, at another institution with the approval of the student's advisor.

### Comprehensive Examination

Students must take and pass a comprehensive examination administered by the department.

### Master's Thesis (6 hours)

Students must complete a master's thesis and six hours of thesis preparation.

Course	Title	Credits
ANTH 799	Thesis Preparation	1-9
<b>Total Credit Hours</b>		<b>1-9</b>

### Anthropological Breadth (3 hours)

Each student is required to take one \*core course\* outside their subfield from the following list:

#### Archaeology

Course	Title	Credits
ANTH 720	Development of Anthropological Archaeology	3
ANTH 745	Seminar in Historical Archaeology	3
<b>Total Credit Hours</b>		<b>6</b>

#### Physical/ Biocultural Anthropology

Course	Title	Credits
ANTH 762	Biological Anthropology Principles and Theory	3
<b>Total Credit Hours</b>		<b>3</b>

#### Cultural Anthropology

Course	Title	Credits
ANTH 730	Cultural Theory through Ethnography	3
<b>Total Credit Hours</b>		<b>3</b>

#### Linguistic Anthropology

Course	Title	Credits
ANTH 747	Language as Social Action	3
ANTH 748	Introduction to Linguistic Anthropology	3
<b>Total Credit Hours</b>		<b>6</b>

## Professional MA Track in Archaeology Requirements (30 hours)

Students are required to complete a minimum of 24 hours of course work and a master's thesis (6 hours of ANTH 799) for a total of 30 hours. Of these, at least 12 hours must be courses at the 700 level, excluding ANTH 799. Students must successfully pass a comprehensive exam and complete a master's thesis. Specific requirements for the Professional MA Track in Archaeology are listed below:

### Required Core Courses (12 hours)

Course	Title	Credits
ANTH 720 or ANTH 745	Development of Anthropological Archaeology Seminar in Historical Archaeology	3
ANTH 750	Archaeological Laboratory Analysis	4
ANTH 751	Archaeological Research Design and Analysis	3
ANTH 742	Public Archaeology	3
<b>Total Credit Hours</b>		<b>13</b>

### Concentration (12 hours)

Students must choose a concentration in a discipline that complements archaeological enquiry and take at least 12 graduate credits in that concentration. Concentrations may include, but are not limited to, geoarchaeology, geophysical prospecting, geographic information systems, historic preservation, museum studies, materials sciences, and Native American relations.

### Comprehensive Examination

Students must take and pass a comprehensive examination administered by the department.

### Master's Thesis (6 hours)

Students must complete a master's thesis and six hours of thesis preparation.

Course	Title	Credits
ANTH 799	Thesis Preparation	1-9
<b>Total Credit Hours</b>		<b>1-9</b>

## Anthropology, Ph.D.

### Learning Outcomes

- Students will recognize and describe research themes and content area from all sub-fields of anthropology, generalize research findings and approaches across the sub-fields, demonstrate competency in coursework in the four sub-fields of anthropology, and integrate theory and method across at least two sub-fields.
- Students will be able to describe and evaluate the historical development and contemporary expressions of anthropological theory. They will be able to demonstrate a deeper understanding and more sophisticated use of specific theories related to their dissertation project
- Students will demonstrate familiarity with theory and/or method of one or more disciplines outside anthropology.
- Students will engage in the larger community of anthropological professionals by attending conferences, seminars, and other arenas where anthropological theory, methods, and results are presented.
- Students will demonstrate the skills necessary to engage in professional-level scholarly dialogue, to lead classroom discussions and to present scholarly papers.
- Students will be able to identify and discuss important ethical issues in anthropology.
- Students will critically evaluate anthropological research. Through their comprehensive exams and dissertation project, they will demonstrate the skills necessary to design, conduct, analyze, and report the results of a research project.
- At least 90% of students will find suitable employment in anthropology at the completion of their doctoral degree. We expect that 80% of anthropology PhD students will complete their dissertations in the median time to degree in the field of anthropology or less (median time to degree post BA: 8-10 yrs.).

## Degree Requirements (30 Post Masters Hours)

Residence and other basic requirements for the degree in anthropology are set by The Graduate School. Doctoral students are required to complete a minimum of 30 hours of graduate work beyond the M.A., including 12 hours of dissertation credit (ANTH 899). Additional hours may be specified by their advisor and approved by the graduate faculty. Students who enter the anthropology department at USC intending to take the M.A. and Ph.D. degrees will apply for admission to the Ph.D. program upon completion of all requirements for the M.A. (including course work, comprehensive exam, and thesis). Students entering the Ph.D. program with an M.A. in Anthropology or related field from another university must complete the M.A. requirements or demonstrate they



have completed similar course work. The required distribution of the 30 hours beyond the M.A. include:

## Required Core Courses

Unless taken at the master's level.

Course	Title	Credits
ANTH 703	Anthropological Inquiry	3
ANTH 711	Professionalism and Ethics	3
<b>Total Credit Hours</b>		<b>6</b>

## Subfields - Core Courses

One \*core course\* in each of the three subfields not in the student's subfield to provide four field anthropological exposure. May be satisfied at the master's level.

### Archaeology

Course	Title	Credits
ANTH 720	Development of Anthropological Archaeology	3
ANTH 745	Seminar in Historical Archaeology	3
<b>Total Credit Hours</b>		<b>6</b>

### Physical/Biocultural Anthropology

Course	Title	Credits
ANTH 762	Biological Anthropology Principles and Theory	3
<b>Total Credit Hours</b>		<b>3</b>

### Cultural Anthropology

Course	Title	Credits
ANTH 730	Cultural Theory through Ethnography	3
<b>Total Credit Hours</b>		<b>3</b>

### Linguistic Anthropology

Course	Title	Credits
ANTH 747	Language as Social Action	3
ANTH 748	Introduction to Linguistic Anthropology	3
<b>Total Credit Hours</b>		<b>6</b>

## Coursework within Another Department or Discipline

A minimum of 1 (3-credit hour) course taken in a department/discipline other than anthropology.

## Other Courses

- Any other appropriate courses chosen in consultation with the advisor.

## Dissertation Preparation

A minimum of 12 credit hours of dissertation preparation.

Course	Title	Credits
ANTH 899	Dissertation Preparation	1-12
<b>Total Credit Hours</b>		<b>1-12</b>

Note: Students enrolled in the Ph.D. program will be admitted to candidacy after completing the following requirements:

- a written and oral exam;
- demonstration of two research skills (e.g. competency in a foreign language, statistical application, or visual anthropology methods and techniques, etc.); and
- writing, presenting, and defending a dissertation prospectus.

This will normally take place at the end of the first or second year after entering the Ph.D. program (third or fourth year of study after entering the department with a bachelor's degree).

## Historical Archaeology and Cultural Resource Management, Certificate

The Department of Anthropology offers the Certificate in Historical Archaeology and Cultural Resource Management for students wishing to supplement their degree work in other historically oriented programs. The certificate is oriented toward professional practice and provides archaeologically based cultural resource management skills for preservation-related employment.

The certificate requires 18 semester hours (two required core seminars and four approved elective courses). Twelve semester hours must come from courses in the Department of Anthropology. The program of study should include a mix of courses in method and theory of historical archaeology and cultural resource management and their practical application.

## Learning Outcomes

- Students will demonstrate their knowledge of the history and current approaches in Historical Archaeology.
- Students will demonstrate their knowledge of Cultural Resource Protection legislation at various government levels as well as develop an understanding of the ethical considerations of Public Archaeology and its various publics.
- HACRM Certificate Program students will demonstrate an understanding of the importance of an anthropological perspective to an ethical public archaeology and Historical Archaeology through the papers and project they do in these courses. These courses will include ANTH 720, ANTH 550, and ANTH 703, among others.

## Certificate Requirements (18 Hours)

Course	Title	Credits
<b>Required Core Seminars</b>		
ANTH 742	Public Archaeology	3
ANTH 745	Seminar in Historical Archaeology	3
<b>Elective Courses</b>		
Select 12 hours of the following: <sup>1</sup>		12
ANTH 533	North American Archaeology	
ANTH 541	Field Problems in Archaeology	
ANTH 550	Archaeological Laboratory Methods	
ANTH 576	Archaeology of the African Diaspora	
ANTH 591	Selected Topics	
ANTH 703	Anthropological Inquiry	
ANTH 720	Development of Anthropological Archaeology	
ANTH 722	Summer Field School in Archaeology	
ANTH 733	Seminar in North American Prehistory	
ANTH 741	Ethnology for Archaeologists	

ANTH 750	Archaeological Laboratory Analysis
ANTH 751	Archaeological Research Design and Analysis
HIST 692	Historic Preservation Field Experience--Charleston, S.C.
HIST 787	Material Culture Studies
HIST 789	Historic Site Interpretation
HIST 792	Historic Preservation
ARTH 542	History of American Architecture
MUSM 700	Administration and Management of Museums
<b>Total Credit Hours</b>	<b>18</b>

<sup>1</sup> At least 6 hours from ANTH.

## Biological Sciences

Department Website (<http://www.biol.sc.edu/>)

Jeff Twiss, *Interim Chair*

The Department of Biological Sciences offers programs leading to the Master of Science and Doctor of Philosophy degrees. The Master of Arts in Teaching in Sciences (Biology option) is offered in cooperation with the College of Education.

The purpose of the graduate program in the Department of Biological Sciences is to train biological scientists for careers in teaching, research, administration, and industry. The Department of Biological Sciences offers diverse research and training opportunities that span the Biological discipline, including but not necessarily restricted to Biology of Stress, Cancer Biology, Ecology, Evolution, Marine Biology, Neurobiology, Plant Biology, Stem Cell and Developmental Biology, and Computational Genomics. Students interested in multiple areas can construct an interdisciplinary curriculum with the consent of both the advisor and the advisory and examination committees.

The Biological Sciences M.S. and Ph.D. degrees are research based degrees focusing on animal, plant and/or microbial systems in the areas of ecology, evolutionary biology, physiology, molecular biology, cellular biology, and/or developmental biology.

## Admission

An applicant must have a baccalaureate degree or its equivalent from an accredited college or university. The applicant's academic record must indicate adequate preparation for graduate study in biology and must demonstrate ability to excel in the biological sciences. Generally, to be considered for admission, a student must have a minimum grade point average of 3.00 in the sciences on a 4.00 scale. However, these guidelines are flexible, and slight deficiencies in one area can be compensated by strengths in another. In addition, applicants whose native language is not English must obtain a minimum score of 600 (250 computer-based score) on the TOEFL exam or 7 on the IELTS exam.

## Programs

- Biological Sciences, M.S. (p. 40)
- Biological Sciences, Ph.D. (p. 40)

## Courses

### BIOL 502 - Environmental Microbiology (3 Credits)

An overview of the microbial world including a survey of the distribution, functioning, and diversity of microorganisms in natural systems. Discusses the crucial roles that microorganisms play in ecosystem function, biogeochemical cycles, and environmental quality.

**Prerequisites:** MSCI 102 or BIOL 102, CHEM 112.

**Cross-listed course:** MSCI 503

### BIOL 505 - Developmental Biology (3 Credits)

An introduction to the descriptive and experimental embryology of animals. Living and preserved specimens will be used to demonstrate the basic processes of embryogenesis. Three lecture hours per week.

**Prerequisites:** or Corequisite: BIOL 302.

### BIOL 505L - Developmental Biology Laboratory I (1 Credit)

Descriptive and experimental exercises related to embryology. One three-hour laboratory per week.

**Corequisite:** BIOL 505.

### BIOL 506 - Developmental Biology II (3 Credits)

Molecular aspects of development from gamete formation through tissue and organ differentiation in plants and animals. Three lecture hours per week.

**Prerequisites:** BIOL 505.

### BIOL 506L - Developmental Biology Laboratory II (1 Credit)

A series of experimentally oriented laboratory exercises will be performed. One three-hour laboratory per week.

**Prerequisite or Corequisite:** BIOL 506.

### BIOL 510 - Invertebrate Zoology (4 Credits)

Phylogenetic and comparative aspects of anatomy, physiology, reproduction, and embryology of the invertebrates.

**Prerequisites:** BIOL 301 or MSCI 311.

**Cross-listed course:** MSCI 510

**Graduation with Leadership Distinction:** GLD: Research

### BIOL 523 - Plant Development (3 Credits)

Descriptive and molecular examination of the processes and mechanisms used by plants in organogenesis, differentiation, and morphogenesis. Three lecture hours per week.

**Prerequisites:** BIOL 302 and BIOL 303.

### BIOL 523L - Plant Developmental Laboratory (1 Credit)

Experiments utilizing a genetic approach to the study of plant development. Three laboratory hours per week.

**Corequisite:** BIOL 523.

### BIOL 524 - Mycology (4 Credits)

Taxonomy and morphology of fungi; cultivation, life histories, and economic importance; all classes and major orders considered. Three lecture hours per week.

**Prerequisites:** BIOL 301.

### BIOL 525 - Marine Plants (4 Credits)

Diversity, distribution, physiology, ecology, evolution, and economic importance of marine algal, seagrass, and mangrove communities. Three lecture and three laboratory hours per week. Scheduled field trips are required.

**Prerequisites:** BIOL 301 or MSCI 311.

**Cross-listed course:** MSCI 525

**BIOL 526 - The Fall Flora (4 Credits)**

Two lecture and four laboratory hours per week.

**Prerequisites:** BIOL 301.

**BIOL 527 - The Spring Flora (4 Credits)**

Two lecture and four laboratory hours per week.

**Prerequisites:** BIOL 301.

**BIOL 528 - The Summer Flora (4 Credits)**

Two lecture and four laboratory hours per week.

**Prerequisites:** BIOL 301.

**BIOL 530 - Histology (4 Credits)**

An introduction to the tissues that make up the human body. The microscopic anatomy of tissues is examined and discussed in terms of function and physiology. Three lecture hours and four laboratory hours per week.

**BIOL 531 - Parasitology (4 Credits)**

Parasites of biological, economic, and public health importance. Three lecture and three laboratory hours per week.

**Prerequisites:** 300 level Biology course or equivalent.

**Cross-listed course:** ENHS 661, EPID 661

**BIOL 534 - Animal Behavior (3 Credits)**

A comparative survey of behavior patterns of animals from protists to humans and the physiological mechanisms underlying behavior.

**Prerequisites:** BIOL 301 or MSCI 311.

**BIOL 534L - Animal Behavior Laboratory (1 Credit)**

Observational and experimental methods used in classifying animal behavior patterns and in determining underlying control mechanisms. One three-hour laboratory per week.

**Prerequisite or Corequisite:** BIOL 534.

**BIOL 535 - Fishery Management (3 Credits)**

Management and conservation of aquatic and marine resources, with emphasis on fisheries. Data procurement and analysis; commercial and recreational fisheries; sociological, political, legal, and environmental factors that affect fishery management; and fish biodiversity.

**Prerequisites:** BIOL 301.

**Cross-listed course:** MSCI 535

**BIOL 536 - Ichthyology (4 Credits)**

Phylogeny, morphology, behavior, and ecology of fishes. Three lecture and 3 laboratory hours plus three field trips to be arranged.

**Prerequisites:** BIOL 301 or MSCI 311.

**Cross-listed course:** MSCI 536

**Graduation with Leadership Distinction:** GLD: Research

**BIOL 537 - Aquaculture (3 Credits)**

Introduction to the practical and scientific aspects of the commercial culture of freshwater and marine organisms. Three lecture hours per week. One all-day field trip required.

**Prerequisites:** BIOL 301 or MSCI 311.

**BIOL 538 - Behavior of Marine Organisms (4 Credits)**

The identification of behavioral adaptations of estuarine and marine organisms: their ecology, physiology, development, and evolutionary history; field observations.

**Prerequisites:** BIOL 101 and BIOL 102 or MSCI 311.

**Cross-listed course:** MSCI 538

**Graduation with Leadership Distinction:** GLD: Research

**BIOL 541 - Biochemistry (3 Credits)**

Description of biological macromolecules and major metabolic pathways.

**Prerequisites:** C or higher in CHEM 334.

**Cross-listed course:** CHEM 550

**BIOL 541L - Biochemistry Laboratory (1 Credit)**

Experiments and demonstrations illustrating the principles of biochemistry. Three laboratory hours per week.

**Prerequisite or Corequisite:** C or higher in CHEM 550 or BIOL 541 or CHEM 555 or BIOL 545.

**Cross-listed course:** CHEM 550L

**BIOL 543 - Comparative Physiology (3 Credits)**

An integrative and comparative study of the structure, function, and evolution of the physiological systems of animals. Three lecture hours per week.

**Prerequisites:** BIOL 302 or MSCI 311.

**BIOL 543L - Comparative Physiology Laboratory (1 Credit)**

Laboratory exercises to illustrate principles from BIOL 543. Three hours per week.

**Corequisite:** BIOL 543.

**BIOL 545 - Biochemistry/Molecular Biology I (3 Credits)**

Essentials of modern biochemistry. First semester of a two-semester course. Three lecture hours per week.

**Prerequisites:** C or higher in CHEM 334.

**Cross-listed course:** CHEM 555

**BIOL 546 - Biochemistry/Molecular Biology II (3 Credits)**

Essentials of modern biochemistry and molecular biology. Three lecture hours per week.

**Prerequisites:** C or higher in BIOL 302.

**Cross-listed course:** CHEM 556

**BIOL 549 - Plant Physiology (4 Credits)**

A general survey of the major physiological processes in plants. Two lecture and four laboratory hours per week.

**Prerequisites:** BIOL 302 and BIOL 425.

**BIOL 550 - Bacteriology (3 Credits)**

Introduction to bacteria and viruses emphasizing ultrastructure, physiology, genetics, and growth. Discussion of public health, industrial, and environmental microbiology. Three lecture hours per week.

**Prerequisites:** BIOL 302 or MSCI 311.

**Corequisite:** BIOL 550L.

**Graduation with Leadership Distinction:** GLD: Research

**BIOL 550L - Bacteriology Laboratory (1 Credit)**

Three laboratory hours per week.

**Corequisite:** BIOL 550.

**BIOL 552 - Population Genetics (3 Credits)**

An introduction to the principles of population genetics, with emphasis on the origin, maintenance, and significance of genetic variation in natural populations.

**Prerequisites:** BIOL 301, MSCI 302, and BIOL 303.

**Cross-listed course:** MSCI 552

**Graduation with Leadership Distinction:** GLD: Research

**BIOL 553 - Genomics (3 Credits)**

Current concepts and applications of genomics, addressing questions from throughout biological inquiry.

**Prerequisites:** BIOL 301, BIOL 303.

**BIOL 558 - Stem Cells and The Physiological Environment (3 Credits)**

Discussion of how physiological factors, like nutritional status, influence systemic signals to alter stem cell activity, and the physiological stimuli that impact stem cell activity in a variety of organisms (from worms to humans).

**Prerequisites:** C of higher in BIOL 302.

**BIOL 570 - Principles of Ecology (3 Credits)**

Interactions of organisms and the environment; ecosystem structure and functions. Three lecture hours per week.

**Prerequisites:** BIOL 301 or MSCI 311.

**BIOL 570L - Principles of Ecology Laboratory (1 Credit)**

Three hours per week.

**Prerequisite or Corequisite:** BIOL 570.

**BIOL 571 - Conservation Biology (3 Credits)**

Principles of conservation biology. Importance of biodiversity, causes of decline and extinction, and restoration and conservation policy in terrestrial and aquatic ecosystems.

**Prerequisites:** BIOL 301.

**Cross-listed course:** ENVR 571

**BIOL 572 - Freshwater Ecology (3 Credits)**

Quantitative study of the population, community and evolutionary ecology of freshwater habitats (lakes, ponds, rivers, streams, wetlands). Includes mandatory field trips.

**Prerequisites:** BIOL 301.

**Cross-listed course:** ENVR 572

**BIOL 574 - Marine Conservation Biology (3 Credits)**

Exploration of how human activities affect marine natural populations, species, communities and ecosystems, including threats to biodiversity; approaches to marine conservation; and ecological and evolutionary responses to anthropogenic disturbance.

**Prerequisites:** BIOL 301.

**Cross-listed course:** MSCI 574

**BIOL 575 - Marine Ecology (3 Credits)**

Structure, dynamics, and interactions between populations and communities in marine ecosystems. Attendance at designated departmental seminars is required. Three lecture hours per week.

**Prerequisites:** CHEM 111 and BIOL 301 or MSCI 311.

**Cross-listed course:** MSCI 575

**BIOL 575L - Marine Ecology Laboratory (1 Credit)**

Laboratory and field exercises in coastal environments.

**Prerequisite or Corequisite:** BIOL 575.

**Cross-listed course:** MSCI 575L

**BIOL 576 - Marine Fisheries Ecology (3 Credits)**

Interdisciplinary examination of the distribution, reproduction, survival, and historical variation of the principal commercial marine fisheries.

**Prerequisites:** BIOL 301.

**Cross-listed course:** MSCI 576

**BIOL 577 - Ecology of Coral Reefs (4 Credits)**

Structure, productivity, and biodiversity of coral reefs, emphasizing their sensitivity, stability, and sustainability. Taught as an extended field experience with daily lectures and guided research activities.

**Prerequisites:** BIOL 301 or MSCI 311.

**Cross-listed course:** MSCI 577

**BIOL 588 - Genomic Data Science (3 Credits)**

This course focuses on quantitative knowledge for interdisciplinary applications in genetics as well as hands-on experience in analyzing genetic data. In this course, students will have programming exercises in using analysis tools to conduct genome-wide analysis, annotation, and interpretation of genetic data using R/Bioconductor packages.

**Prerequisites:** C or better in STAT 201 or higher.

**Cross-listed course:** STAT 588

**BIOL 599 - Topics in Biology (1-3 Credits)**

Current developments in biological sciences. Readings and research on selected topics. Course content varies and will be announced in the schedule of classes by title.

**BIOL 610 - Hallmarks of Cancer (3 Credits)**

Survey of current concepts regarding the molecular and genetic factors that regulate the origin and progression of cancer. Readings based on current primary literature.

**Prerequisites:** BIOL 302 and BIOL 303.

**BIOL 612 - Virology - Classical and Emerging Concepts (3 Credits)**

Advanced study of viruses with regard to biochemical, molecular, pathological, epidemiological, and biotechnological aspects. Focus on animal viruses with particular emphasis on human pathogens.

**Prerequisites:** BIOL 302.

**BIOL 614 - Stem Cell Biology (3 Credits)**

Focuses on the understanding of how stem cells can be used to make fundamental biological discoveries with a special focus in neuroscience.

**Prerequisites:** C or better in BIOL 302.

**BIOL 620 - Immunobiology (3 Credits)**

Basic immunological concepts including antibody structure, function, and genetics; cellular immunology; transplantation; hypersensitivity; autoimmunity; and immunity to infectious diseases.

**Prerequisites:** BIOL 302.

**BIOL 625 - Medical Mycology (3 Credits)**

Advanced study of infectious diseases caused by fungi. Etiology, symptoms, and treatment of fungi related illnesses.

**Cross-listed course:** ENHS 625

**BIOL 627 - Marine Phytoplankton (3 Credits)**

Examines the physiology and ecology of phytoplankton, including environmental controls on community composition, primary productivity, and detection and characterization of water quality (eutrophication) and harmful algal blooms.

**Prerequisites:** MSCI 102 or MSCI 450 or BIOL 450.

**Cross-listed course:** MSCI 627

**BIOL 630 - Biology of Birds (3 Credits)**

Biology of birds at molecular, organismal, and population levels, emphasizing unique adaptations of the class of Aves.

**Prerequisites:** BIOL 301, BIOL 302, and BIOL 303.

**BIOL 634 - Biology of Neurological Diseases (3 Credits)**

Advances in molecular and cellular neurobiology that bring new understanding for human neurological disease.

**Prerequisites:** BIOL 302 and SCHC 330 or BIOL 405.

**BIOL 635 - Neurophysiology (4 Credits)**

Descriptive and experimental aspects of the neural basis of behavior, emphasizing cellular and molecular mechanisms. Two lecture and six laboratory hours per week. Three lecture hours per week.

**Prerequisites:** BIOL 302.

**BIOL 640 - Microbial Ecology (3 Credits)**

Interactions of microorganisms with each other, with more complex organisms, and with their environments. Three lecture hours per week.

**Prerequisites:** BIOL 550 and either BIOL 301 or MSCI 311.

**BIOL 641 - Biophysical Ecology (3 Credits)**

This course examines how the mechanisms by which animals and plants interact with their physical environments influence organismal physiology.

**Prerequisites:** BIOL 301, MATH 141 or MATH 122.

**BIOL 650 - Biochemical Evolution (3 Credits)**

Advanced study of related aspects of biological evolution. Rise of life from physical and chemical precursors, biochemical basis of adaptation to ecological pressures, and biochemical aspects of the origins and maintenance of biodiversity.

**Prerequisites:** BIOL 301, BIOL 302, BIOL 303.

**BIOL 651 - Limnology (4 Credits)**

A study of the aquatic environment and its biota. Three lecture and four laboratory hours per week.

**Prerequisites:** BIOL 301.

**BIOL 652 - Evolutionary Biology (3 Credits)**

An advanced course in evolutionary biology, including natural selection, neutral evolution, molecular evolution population genetics, quantitative genetics, sexual selection, speciation, human evolution, and the evolution of disease.

**Prerequisites:** BIOL 301 and BIOL 303.

**BIOL 653 - Bioinformatics (3 Credits)**

Studies of the principles of genetics and molecular biology as applied to adaptive evolution of genes and genomes.

**Prerequisites:** BIOL 302, BIOL 303.

**BIOL 654 - Speciation (3 Credits)**

Speciation as the source of biological diversity. Historical and biological viewpoints. Analysis of concepts of species and models of speciation. Two lectures and one recitation per week.

**Prerequisites:** BIOL 301 or BIOL 652.

**BIOL 655 - Biotechnology (3 Credits)**

Studies in molecular biology and genetics with emphasis on the use of newly developed techniques in biotechnology. Three lecture hours per week.

**Prerequisites:** BIOL 302 and BIOL 303.

**BIOL 656 - Experimental Biotechnology (4 Credits)**

Techniques used in biotechnology will be employed in the context of an experimental project. Twelve laboratory hours per week.

**Prerequisites:** BIOL 302, BIOL 302L.

**BIOL 660 - Biology of Mammals (4 Credits)**

Evolution, systematics, genetics, ecology, and adaptation of mammals. Emphasis on native South Carolina species. Two lectures and one two-hour laboratory per week, plus five field trips to be arranged.

**Prerequisites:** BIOL 301 or MSCI 311.

**BIOL 662 - Signal Transduction and Pathogenesis (3 Credits)**

Signaling pathways involved in human diseases, such as cancer, AIDS, autoimmune diseases and diabetes, and cellular processes involving apoptosis, cell cycle, cell-cell adhesion, growth factors, hormones, G protein-coupled receptors, cytokines and immune response.

**Prerequisites:** BIOL 302 and BIOL 303.

**BIOL 665 - Human Molecular Genetics (3 Credits)**

Molecular mechanisms underlying gene action and differentiation in man; the genetic bases for human variability and inborn metabolic errors leading to inherited diseases.

**Prerequisites:** BIOL 302 and BIOL 303.

**BIOL 667 - Molecular and Genetic Mechanisms of Disease Pathogenesis (3 Credits)**

An advanced examination of the molecular mechanisms underlying gene action in humans. Current literature illustrating the genotype-phenotype relationship in human disease pathogenesis will be discussed.

**Prerequisites:** BIOL 302 and BIOL 303.

**BIOL 668 - Metabolic Biochemistry of Human Disease (3 Credits)**

Core concepts of biochemistry as applied to human health and disease.

**Prerequisites:** C or higher in CHEM 555/BIOL 545 or CHEM 550/BIOL 541.

**Cross-listed course:** CHEM 655

**BIOL 670 - Plant Ecology (3 Credits)**

Structure and dynamics of plant populations and communities, including life histories, adaptations, and plant interactions. Three lecture hours per week.

**Prerequisites:** BIOL 301.

**BIOL 670L - Plant Ecology (1 Credit)**

Laboratory and field exercises in plant ecology. Four hours per week.

**Prerequisite or Corequisite:** BIOL 670.

**BIOL 671 - Plant Responses to the Environment (3 Credits)**

Physiological, molecular, and genetic examination of induced plant responses to various biotic and abiotic environmental stresses.

**Prerequisites:** BIOL 302.

**BIOL 690 - Ultramicroscopy (3 Credits)**

Theoretical and practical aspects of scanning and transmission electron microscopy, digital image acquisition and energy dispersive x-ray spectroscopy. Two lecture and one laboratory hour per week, plus a research project to be arranged.

**Prerequisites:** BIOL 302 or MSCI 311.

**BIOL 701 - Selected Topics in Biochemistry (1-3 Credits)**

Selected biochemical topics emphasizing research literature. One lecture hour per credit per week.

**Prerequisites:** two semesters of biochemistry.

**BIOL 702 - Selected Topics in Plant Biology (1-3 Credits)**

Selected botanical topics emphasizing research literature. One lecture hour per credit per week.

**Prerequisites:** two semesters of botany.

**BIOL 703 - Selected Topics in Ecology (1-3 Credits)**

Selected ecology topics emphasizing research literature. One lecture hour per credit per week.

**Prerequisites:** two semesters of ecology.

**BIOL 704 - Selected Topics in Genetics and Developmental Biology (1-3 Credits)**

Selected genetic and developmental biology topics emphasizing research literature. One lecture hour per credit per week.

**BIOL 705 - Selected Topics in Zoology (1-3 Credits)**

Selected zoological topics emphasizing research literature. One lecture hour per credit per week.

**BIOL 711 - Structure and Function of Nucleic Acids (3 Credits)**

A detailed study of nucleic acids including their structure/chemistry, biosynthesis, processing, and biological functions.

**BIOL 712 - DNA Transactions and Gene Expression (3 Credits)**

Advanced topics in Mendelian genetics, DNA repair/recombination, and mechanisms of gene expression. Three lecture hours per week.

**Prerequisites:** BIOL 303 or equivalent and BIOL 711.

**BIOL 714 - Advanced Cell Biology (3 Credits)**

Problems of cellular organization, interactions, and control. Cell growth and death, cell-cell recognition and communication, intracellular transport, the structure and assembly of cellular organelles, somatic cell genetics, and evolution of cells. Three lecture hours per week.

**Prerequisites:** BIOL 541 or equivalent.

**BIOL 717 - Biological Chemistry (3 Credits)**

A comprehensive treatment of the chemistry, metabolism, regulation, and function of biological systems.

**BIOL 718 - Biological Chemistry II (3 Credits)**

A continuation of BIOL 717. Three lecture hours per week.

**Prerequisites:** BIOL 717.

**BIOL 722 - Aquatic Bacteriology (3 Credits)**

The ecology and physiology of freshwater and marine bacteria. The functions of bacteria in aquatic habitats and the public health aspects of pollution as they relate to microbiology. Three lecture hours per week.

**Prerequisites:** BIOL 330 or equivalent.

**BIOL 722L - Aquatic Bacteriology Laboratory (1 Credit)**

Three laboratory hours per week.

**Prerequisite or Corequisite:** BIOL 722.

**BIOL 725 - Embryology of Angiosperms (3 Credits)**

Two lectures and two laboratory periods per week.

**BIOL 726 - Soil-Plant Relationships (3 Credits)**

Two lecture and three laboratory hours per week.

**Prerequisites:** BIOL 102.

**BIOL 727 - Marine Phytoplankton (3 Credits)**

Three lecture hours and one three-hour laboratory per week.

**Prerequisites:** BIOL 627.

**BIOL 728 - Advanced Phycology (3 Credits)**

Three lecture hours and one three-hour laboratory per week.

**Prerequisites:** BIOL 627.

**BIOL 729 - The Biology of Fish (3 Credits)**

Three lecture hours per week.

**BIOL 730 - The Biology of Fish (3 Credits)**

One seminar and six laboratory hours per week.

**Prerequisite or Corequisite:** BIOL 729.

**BIOL 731 - Advanced Invertebrate Zoology I (3 Credits)**

Principles of systematics and an in-depth study of invertebrate phylogeny and ecology. Two lecture and three laboratory hours per week.

**Prerequisites:** invertebrate zoology.

**BIOL 734 - The Vertebrates (3 Credits)**

Three lectures or conferences per week.

**BIOL 736 - Advanced Developmental Biology (3 Credits)**

The biochemical and molecular mechanisms by which a variety of organisms develop. Three lecture hours per week.

**Prerequisites:** BIOL 340 or BIOL 505, or equivalent.

**BIOL 741 - Fungal Physiology (3 Credits)**

Three lecture and three laboratory hours per week.

**BIOL 748 - Molecular Endocrinology (3 Credits)**

A brief introduction to general endocrinology followed by an in-depth examination of the molecular mechanisms of hormone action, including receptors, second messengers, and hormonal control of transcription/translation. The evolution of hormone-receptor systems will also be examined.

**Prerequisites:** CHEM 332.

**BIOL 749 - Methods in Molecular and Cell Biology (3 Credits)**

Team-taught course on the theory and practice of laboratory techniques for investigating the structure and function of cellular components, especially organelles, proteins, and nucleic acids. Three lecture hours per week. Lectures will be supplemented with laboratory demonstrations.

**Prerequisites:** one semester of biochemistry.

**BIOL 750 - Advanced Biological Oceanography (3 Credits)**

Three lecture hours per week.

**Prerequisites:** BIOL 450/MSCI 450.

**BIOL 752 - Marine Biogeochemistry (3 Credits)**

Biological, chemical, geological, and physical processes that influence the cycling of major bioactive elements (C, O, N, P, S) in marine waters and sediments.

**Cross-listed course:** MSCI 752

**BIOL 753 - Developmental Genetics (3 Credits)**

The action of genes in development and differentiation at the molecular, cellular, and organ (tissue) levels, with examples taken from microorganisms, plants, animals, and man. Three lecture hours per week.

**Prerequisites:** BIOL 350 and two semesters of biochemistry or equivalents.

**BIOL 754 - Oceanographic Techniques (1 Credit)**

Shipboard experience with basic techniques used by geological, physical, chemical, and biological oceanographers.

**Cross-listed course:** GEOL 754

**BIOL 755 - Quantitative Ecology (3 Credits)**

An intensive field course centered around field problems in a variety of habitats (freshwater, terrestrial, estuarine). Students will use a variety of quantitative sampling methods to test ecological hypotheses on several two-day field trips.

**Prerequisites:** BIOL 570.

**BIOL 757 - Special Topics in Biology (1-4 Credits)**

An intensive consideration of topics of current interest in biology. One lecture hour per credit per week.

**BIOL 758 - Research (1-3 Credits)**

Appropriate designation will be made for the particular program in any given semester.

**BIOL 759 - Physiological Ecology (3 Credits)**

Two lecture and three laboratory hours per week.

**BIOL 760 - Electron Microscopy (3 Credits)**

Theory and design of modern electron microscopes; advancement in the theory and practice of specimen preparation of biological materials; interpretation of ultrastructure of cells and tissues. Three lecture hours a week.

**BIOL 760L - Electron Microscopy Laboratory (1 Credit)**

Four laboratory hours per week.

**Prerequisite or Corequisite:** BIOL 760.

**BIOL 762 - Wetlands Ecology (3 Credits)**

A survey of the structure and function of wetland ecosystems emphasizing the current literature.

**BIOL 763 - Biology of Populations (3 Credits)**

Three lecture and two laboratory hours per week.

**BIOL 764 - Advanced Plant Physiology (3 Credits)**

Study of modern advances in plant physiology. Plant biotechnology topics, such as tissue culture, nitrogen fixation, photosynthesis, weed and pest control, molecular cloning, and genetic manipulation. Three lecture hours per week.

**Prerequisites:** BIOL 549.

**BIOL 765 - Theoretical Ecology (3 Credits)**

Theoretical bases of ecology are explored from current literature with topics from organismal, populational, community, and ecosystem approaches. Principles for the construction and testing of hypotheses and models.

**Prerequisites:** BIOL 570.

**BIOL 766 - Evolutionary Biology (3 Credits)**

Theoretical and empirical studies of the evolutionary process. Historical perspective of major developments in evolution as well as modern quantitative and ecological genetic studies.

**BIOL 768 - Ecological Modeling and Environmental Planning (4 Credits)**

Concepts in systems ecology and ecological modeling. Emphasis on the use of models and computer simulations in examining environmental interactions, predicting environmental impact, and facilitating the process of environmental planning.

**Cross-listed course:** ENHS 767, MSCI 767

**BIOL 769 - Reproductive Ecology (3 Credits)**

Theoretical aspects and examples of the variety of reproductive and life history patterns found in animals and plants as adaptations to various environmental constraints. Three lecture hours per week.

**Prerequisites:** BIOL 570.

**Cross-listed course:** MSCI 769

**BIOL 770 - Current Topics in Molecular Biology (3 Credits)**

Recent developments in cellular and molecular biology including genetic mechanisms, ultrastructure, and function of organelles and membranes. Lectures supplemented with readings from current literature. Primarily for the MAT program. Not available for MS or PhD credit in biology.

**BIOL 771 - Current Topics in Developmental Biology (3 Credits)**

Concepts of growth, differentiation, and morphogenesis of organisms in light of recent advances in biological knowledge. Lectures supplemented with readings from current literature. Primarily for the M.A.T. program. Not available for M.S. or Ph.D. credit in biology.

**BIOL 772 - Current Topics in Ecology (3 Credits)**

Ecological concepts with reference to recent advances in environmental sciences. Special attention to the ecology of the coast, swamps, and other habitats of importance in the Southeast. Primarily for the M.A.T. program. Not available for M.S. or Ph.D. credit in biology.

**BIOL 775 - Plants of South Carolina (4 Credits)**

Introduction to the major forms of plant life in the state. Includes fungi, algae, bryophytes, and vascular plants. Lecture-laboratory-field course primarily for the M.A.T. program. Not available for M.S. or Ph.D. credit in biology.

**BIOL 776 - Animals of South Carolina (4 Credits)**

Introduction to the major forms of animal life in the state. Animals will be studied and/or collected in their native habitat. Includes identification, behavior, and ecology of animals with emphasis on vertebrates. Lecture-laboratory-field course primarily for the M.A.T. program. Not available for M.S. or Ph.D. credit in biology.

**BIOL 777 - Statistical Phylogenetics and Molecular Evolution (3 Credits)**

Theory and applications of phylogenetics; estimation via Markov models, likelihood, distances and parsimony; hypothesis testing of evolutionary trees and parameters; related topics including molecular divergence time inference.

**Prerequisites:** B or better in MATH 241 or STAT 510.

**BIOL 798 - Research in Biology (1-9 Credits)**

Directed laboratory research and readings in the biological sciences for M.S. and Ph.D. students prior to preparation of theses and dissertations.

**BIOL 799 - Thesis Preparation (1-9 Credits)****BIOL 801 - Directed Readings in Molecular, Cellular, and Developmental Biology (1 Credit)**

Assigned readings in special topics in molecular, cellular, and developmental biology followed by classroom discussions. Designed to teach critical analysis of the scientific literature.

**BIOL 802 - Seminar in Plant Biology (1-2 Credits)**

A review of current literature in plant biology involving student presentations of seminars. One discussion hour per credit per week. The course may be repeated for credit.

**BIOL 803 - Seminar in Ecology (1-2 Credits)**

A review of current literature in ecology involving student presentations of seminars. One discussion hour per credit per week.

**BIOL 804 - Seminar in Molecular, Cellular, and Developmental Biology (1 Credit)**

Student presentations of papers from the current literature in molecular, cellular, and developmental biology. Designed to give experience in oral presentations. May be repeated.

**BIOL 805 - Seminar in Zoology (1-2 Credits)**

A review of current literature in zoology involving student presentations of seminars. One discussion hour per credit per week.

**BIOL 806 - Perspectives in Biological Research (1 Credit)**

Recent trends in biological research from the perspective of individual faculty members in the department. May be repeated.

**BIOL 899 - Dissertation Preparation (1-12 Credits)**

## Biological Sciences, M.S.

### Learning Outcomes

- Students become broadly knowledgeable of their area of research as well as neighboring areas within their field of study.
- All students will possess the experimental design and problem solving skills needed for conducting independent research.
- All students will possess the critical thinking skills to design independent research and to assess their own work and the work of others.
- All students will possess the communication skills necessary to present their research orally and as publications.
- All students are encouraged to participate in the Graduate Association of Biological Sciences (GABS). All students are eligible to serve on Departmental Committees including serving as student representatives for Faculty Meetings, Faculty hiring committees, Graduate Studies.
- Production of Masters students ready to pursue advanced studies or productive careers.

### Degree Requirements (30 Hours)

Students choose a Major Professor and form an Advisory Committee during the first year. This Advisory Committee serves as the students Thesis Committee. A curriculum, tailored to each student, is developed with and approved by the Advisory Committee and submitted to the Graduate School as the Program of Study. Students take a Qualifying Examination at the end of their first year, comprised of a short written and orally defended Research Plan focusing on planned research in the laboratory of their Major Professor; this Research Plan is developed in consultation with the Major Professor and presented to a committee selected by the Department Chair. Students present a thesis plan in the form of a Research Proposal to their Thesis Committee; the format of this Research Proposal is determined by the Thesis Committee. Finally, students write and orally defend a research based Thesis; the Thesis and its defense serve as the M.S Comprehensive Examination. M.S. students must complete at least 30 hours of course credits including multiple credits of BIOL 798 and 3 credits of BIOL 799. M.S. students are required to have teaching experience equivalent to one semester as a Teaching or Instructional Assistant, unless waived on appeal by the Department Graduate Studies Committee.

## Biological Sciences, Ph.D.

### Learning Outcomes

- Students will become broadly knowledgeable of their general discipline and relevant neighboring areas and gain detailed knowledge of areas they may choose to pursue post-graduation.
- All students will possess the experimental design and problem solving skills needed for conducting independent research.
- All students will possess the critical thinking skills needed to design independent research and to assess their own work and the work of others.
- All students will possess the communication skills necessary to present their research orally and as publications.
- Students become effective and proficient teachers.
- Students assume responsibilities within their professional community.

- Production of Doctoral students ready to pursue advanced studies or productive careers.

### Degree Requirements (30 Post-Masters Hours)

Students choose a Major Professor and form an Advisory Committee during their first year. A curriculum, tailored to each student, is developed with and approved by the Advisory Committee and submitted to the Graduate School as the Program of Study. Students take a Qualifying Examination at the end of their first year, comprised of a short written and orally defended Research Plan focusing on planned research in the laboratory of their Major Professor; this Research Plan is developed in consultation with the Major Professor and presented to a committee selected by the Department Chair. Upon Advancement to Candidacy, the Advisory Committee becomes the student's Dissertation Committee. Students present a dissertation plan in the form of a Research Proposal to their Dissertation Committee and take a Comprehensive Examination; the formats of both Research Proposal and Comprehensive Examination are determined by the Dissertation Committee. Finally, students write and orally defend a research based Dissertation. PhD students entering without M.S. degrees must complete at least 60 hours of course credit including multiple credits of BIOL 798 and 12 credits of BIOL 899. Ph.D. students entering with a M.S. degree must complete at least 30 hours of course credit including multiple credits of BIOL 798 and 12 credits of BIOL 899. Ph.D. students are required to have teaching experience equivalent to two semesters as a Teaching or Instructional Assistant, unless waived on appeal by the Department Graduate Studies Committee.

## Chemistry and Biochemistry

Department Website (<http://www.chem.sc.edu/>)

Ken Shimizu, *Chair*

Sheryl L. Wiskur, *Graduate Director*

The Department of Chemistry and Biochemistry offers programs leading to the Ph.D. degree, with concentrations in analytical, biological, inorganic, organic, and physical chemistry. The Ph.D. program is flexible and is designed to maximize research opportunities and to encourage interdisciplinary research. Master of Science degrees in the same areas of concentration are awarded. The Master of Arts in Teaching in Science (Chemistry and Biochemistry Option) and the Interdisciplinary Master of Arts in Science (Chemistry and Biochemistry Option) are offered in cooperation with the College of Education.

On average, the Ph.D. degree is earned in less than five years. Thirty tenure-track and research faculty teach and supervise the research of the department's approximately 130 graduate students and 30 postdoctoral fellows. Each year, around 30 new students are added to the program. Generally, 15-20 Ph.D. and four M.S. degrees are awarded per year.

The Ph.D. and M.S. degree programs prepare students for careers in industry, government, and academic settings.

### Admission

An applicant must have a baccalaureate degree or its equivalent from an accredited college or university. The applicant's academic record must indicate adequate preparation for graduate study in the Department of Chemistry and Biochemistry. Generally, to be considered for admission, a student should have a minimum grade point average of 3.00 in the sciences on a 4.00 scale and score at or above the 50th percentile on the



GRE. However, these guidelines are flexible, and slight deficiencies in one area can be compensated by strengths in another. In addition, applicants whose native language is not English must obtain a minimum score of 600 (250 computer-based score) on the TOEFL exam or 7 on the IELTS exam.

## Programs

- Chemistry, M.S. (p. 43)
- Chemistry, Ph.D. (p. 44)

## Courses

### CHEM 511 - Inorganic Chemistry (3 Credits)

Consideration of atomic structure, valence, complex compounds, and systematic study of the periodic table.

**Prerequisites:** C or higher in CHEM 334, PHYS 212, and MATH 241.

### CHEM 541L - Physical Chemistry Laboratory (2 Credits)

Applications of physical chemical techniques. Five laboratory hours and one recitation hour per week.

**Prerequisites:** C or higher in CHEM 321L or in CHEM 322L or in CHEM 142.

**Corequisite:** CHEM 541 (unless grade of C or higher in CHEM 541 earned previously).

### CHEM 542 - Physical Chemistry (3 Credits)

Spectroscopy, statistical mechanics, and chemical applications of quantum mechanics.

**Prerequisites:** C or higher in CHEM 112 or in CHEM 142, MATH 241 and PHYS 212.

### CHEM 542L - Physical Chemistry Laboratory (2 Credits)

Applications of physical chemical techniques. Five laboratory hours and one recitation hour per week.

**Prerequisites:** C or higher in CHEM 321L or in CHEM 142.

**Corequisite:** CHEM 542 (unless grade of C or higher in CHEM 542 earned previously).

### CHEM 545 - Physical Biochemistry (3 Credits)

A survey of physical methods essential for studies of biomacromolecules. Three lecture hours per week.

**Prerequisites:** C or higher in CHEM 541 and in CHEM 550 or CHEM 555.

### CHEM 550 - Biochemistry (3 Credits)

Description of biological macromolecules and major metabolic pathways. Three lecture hours per week.

**Prerequisites:** C or higher in CHEM 334.

**Cross-listed course:** BIOL 541

### CHEM 550L - Biochemistry Laboratory (1 Credit)

Experiments and demonstrations illustrating the principles of biochemistry. Three laboratory hours per week.

**Prerequisite or Corequisite:** C or higher in CHEM 550 or BIOL 541 or CHEM 555 or BIOL 545.

**Cross-listed course:** BIOL 541L

### CHEM 555 - Biochemistry/Molecular Biology I (3 Credits)

Essentials of modern biochemistry. First semester of a two-semester course. Three lecture hours per week.

**Prerequisites:** C or higher in CHEM 334.

**Cross-listed course:** BIOL 545

### CHEM 556 - Biochemistry/Molecular Biology II (3 Credits)

Essentials of modern biochemistry and molecular biology. Three lecture hours per week.

**Prerequisites:** C or higher in BIOL 302.

**Cross-listed course:** BIOL 546

### CHEM 619 - Special Topics in Inorganic Chemistry (1-3 Credits)

Current developments in inorganic chemistry. Readings and research on selected topics. Course content varies by title and will be announced in the schedule of classes. May be repeated for credit.

### CHEM 621 - Instrumental Analysis (3 Credits)

Chemical instrumentation including electronics, signal processing, statistical analysis, molecular/atomic spectroscopy, electrochemical methods, chromatography, and mass spectrometry. Three lecture hours per week.

**Prerequisites:** C or higher in CHEM 321 or CHEM 322.

### CHEM 621L - Instrumental Analysis Lab (1 Credit)

Methods, principles and strategies for chemical instrumentation in analysis. Chemical instrumentation laboratory with environmental, forensic, and biotechnology applications. Three laboratory hours per week.

**Corequisite:** CHEM 621.

### CHEM 622 - Forensic Analytical Chemistry (3 Credits)

Analytical chemical methods in forensic science, including gathering of evidence, toxicology, drug identification, analysis of trace evidence, arson analysis, and DNA/serology.

**Prerequisites:** C or higher in CHEM 321, CHEM 321L and in CHEM 334, CHEM 332L or CHEM 334L.

### CHEM 623 - Introductory Environmental Chemistry (3 Credits)

Study of the chemical reactions and processes that affect the fate and transport of organic chemicals in the environment. Three lecture hours per week.

**Prerequisites:** C or higher in CHEM 321, in CHEM 333, and in MATH 142.

### CHEM 624 - Aquatic Chemistry (3 Credits)

Study of the chemical reactions and processes affecting the distribution of chemical species in natural systems. Three lecture hours per week.

**Prerequisite or Corequisite:** CHEM 321, MATH 142.

**Cross-listed course:** MSCI 624

### CHEM 629 - Special Topics in Analytical Chemistry (1-3 Credits)

Current developments in inorganic chemistry. Readings and research on selected topics. Course content varies by title and will be announced in the schedule of classes. May be repeated for credit.

### CHEM 633 - Introduction to Polymer Synthesis (3 Credits)

Special emphasis on the modern synthesis of polymeric materials. Definitions, characterization, and applications of polymers will be briefly presented.

**Prerequisites:** C or higher in CHEM 334.

### CHEM 639 - Special Topics in Organic Chemistry (3 Credits)

Current developments in organic chemistry. Readings and research on selected topics. May be repeated as content varies by title.

**CHEM 643 - Computational Chemistry (3 Credits)**

This course is designed to familiarize students with theory and use of modern electronic structure codes, as well as to develop critical thinking and problem-solving skills and to improve computer literacy.

**Prerequisites:** C or higher in CHEM 541 or CHEM 542.

**CHEM 644 - Materials Chemistry (3 Credits)**

Introduction to materials science; structural and electronic description of inorganic-based solids; experimental techniques in materials chemistry; interfacial energetics and optoelectronic processes at metal and semiconductor surfaces.

**Corequisite:** CHEM 542 (unless a grade of C or higher earned previously).

**CHEM 649 - Special Topics in Physical Chemistry (1-3 Credits)**

Current developments in physical chemistry. Readings and research on selected topics. Course content varies by title and will be announced in the schedule of classes. May be repeated for credit.

**CHEM 655 - Metabolic Biochemistry of Human Disease (3 Credits)**

Core concepts of biochemistry as applied to human health and disease.

**Prerequisites:** C or higher in CHEM 555/BIOL 545 or CHEM 550/BIOL 541.

**Cross-listed course:** BIOL 668

**CHEM 659 - Special Topics in Biochemistry (3 Credits)**

Selected topics in the field of biochemistry. May be repeated as content varies by title.

**Prerequisites:** C or higher in CHEM 555/BIOL 545 or CHEM 550/BIOL 541.

**CHEM 700 - Methods of Solving Problems in Chemistry (3 Credits)**

Various approaches to solving problems in gas laws, solution chemistry, and equilibrium. Comparison of the pedagogical merits of the different approaches. For teachers of chemistry, M.A. Students. Three lectures per week.

**CHEM 701 - Seminar (1 Credit)**

Required of all graduate students. Fall or Spring limit of 2 credits.

**CHEM 701A - Seminar (1 Credit)**

A survey of chemical research at the University of South Carolina.

Required of all first-year degree candidates in chemistry.

**CHEM 702 - Structure and Bonding in Covalent Molecules (4 Credits)**

Covalent bonding in compounds of the first short period elements, with emphasis on those of boron, carbon, and nitrogen. Structure of molecules, some important functional groups, resonance in unsaturated compounds, stereochemistry, and organometallic compounds. For teachers of chemistry, M.A.T., or M.Ed. students. Three lectures and one discussion period per week.

**CHEM 703 - Molecular Reactions (4 Credits)**

General types of organic reactions, including those of biochemistry. Industrial preparations of both organic and inorganic compounds of major importance. For teachers of chemistry, M.A.T., or M.Ed. students. Three lectures and one discussion period per week.

**CHEM 704 - Energy, Equilibrium, and Chemical Change (4 Credits)**

The basic laws of chemical thermodynamics, chemical kinetics, and equilibrium, with emphasis on the practical and theoretical importance of the interconversion of chemical energy with other forms of energy. For teachers of chemistry, M.A.T., or M.Ed. students. Three lectures and one discussion period per week.

**CHEM 705 - Modern Instrumental Methods in Chemistry (4 Credits)**

A survey of the applications of modern instrumental techniques to the solution of chemical problems, with emphasis on development of a basic understanding of the experiment and on interpretation of data. For teachers of chemistry, M.A.T., or M.Ed. students. Three lectures and one discussion period per week.

**CHEM 706 - Chemistry in Living Systems (4 Credits)**

The structures and functions of proteins, nucleic acids, lipids, enzymes, and other biologically important molecules; the role of these molecules in the major metabolic pathways. For teachers of chemistry, M.A.T., or M.Ed. students. Three lectures and one discussion period per week.

**CHEM 709 - Special Topics in Chemical Education (1-6 Credits)**

Selected chemical topics with emphasis on modern chemical concepts. For teachers of chemistry, M.A.T., I.M.A. and M.Ed. students. Lectures, discussion, laboratories, depending on credit offered.

**CHEM 711 - Physical-Inorganic Chemistry (3 Credits)**

The use and interpretation of modern physical measurements of particular application to inorganic chemistry, including X-ray, ESR, magnetic measurements, Mössbauer spectra, ligand field theory, and reaction mechanisms.

**CHEM 712 - The Chemistry of Transition Elements (3 Credits)**

Systematic study of the reactions and bonding of the d and f transition elements.

**CHEM 713 - The Chemistry of the Representative Elements (3 Credits)**

Systematic study of the structure and bonding of the inorganic compounds of main group elements.

**CHEM 719 - Special Topics in Inorganic Chemistry (3 Credits)**

May be repeated as content varies by title.

**CHEM 721 - Electroanalytical Chemistry (3 Credits)**

Theory and application of classical and modern electrochemical techniques.

**CHEM 722 - Spectrochemical Methods of Analysis (3 Credits)**

A comprehensive study of the theory, instrumentation, methodology, and analytical applications of modern atomic and quantitative molecular spectrometry.

**CHEM 723 - Separation Methods in Analytical Chemistry (3 Credits)**

Modern techniques for analytical separations including distillation, extraction, gas chromatography, and liquid chromatography. Basic theory and practical applications. Three lecture hours per week.

**CHEM 729 - Special Topics in Analytical Chemistry (3 Credits)**

May be repeated as content varies by title.

**CHEM 735 - Structural and Mechanistic Organic Chemistry (3 Credits)**

Basic concepts of structure, bonding, stereochemistry, and reaction mechanisms as applied to organic compounds and synthetic transformations.

**CHEM 736 - Mechanistic and Synthetic Organic Chemistry (3 Credits)**

A continuation of CHEM 735 with special emphasis on organic synthesis.

**Prerequisites:** CHEM 735.

**CHEM 739 - Special Topics in Organic Chemistry (3 Credits)**

May be repeated as content varies by title.

**CHEM 741 - Chemical Thermodynamics (3 Credits)**

A development of classical thermodynamics and its application to chemical changes.

**Prerequisites:** CHEM 542.

**CHEM 742 - Surface Science (3 Credits)**

The principles of surface processes – structure and electronic properties, adsorption and reactions, surface characterization using spectroscopy and microscopy.

**CHEM 743 - Quantum Chemistry (3 Credits)**

An introduction to the application of quantum mechanics to problems in chemistry.

**Prerequisites:** CHEM 542; differential equations.

**CHEM 744 - Statistical Mechanics (3 Credits)**

Calculations of the thermodynamic properties of chemical systems from molecular properties. Theory and applications.

**Prerequisites:** CHEM 542; differential equations.

**CHEM 745 - Introductory Crystallography (3 Credits)**

Point and space groups. Matrix representation and the derivation of the space groups. Significance of general and special positions. Powder and single crystal methods. Limitation imposed upon molecules by space group considerations. Introduction to structure analysis. Patterson and electron density functions. Refinement techniques.

**CHEM 747 - Spectroscopy and Molecular Structure (3 Credits)**

Study of the rotational, vibrational, and electronic spectra of polyatomic molecules for the elucidation of molecular structures.

**CHEM 749 - Special Topics in Physical Chemistry (3 Credits)**

May be repeated as content varies by title.

**CHEM 751 - Biosynthesis of Macromolecules (3 Credits)**

A detailed consideration of the enzymological basis for the synthesis of DNA, RNA, and protein including mechanisms for the regulation of these processes. Focus will be on eucaryotic mechanisms though procaryotic systems will be covered as necessary for background.

**CHEM 752 - Regulation and Integration of Metabolism (3 Credits)**

Biochemical organization of the cell. Regulation and integration of metabolism. Membrane structure and function. Energy transduction processes.

**CHEM 753 - Enzymology and Protein Chemistry (3 Credits)**

An analysis of the isolation, composition, structure, and function of enzymes emphasizing their kinetic, mechanistic, and regulatory features. Protein chemistry: amino acid and protein sequence analysis; chemical modification methodologies; analysis of higher order structures of proteins.

**CHEM 754 - Biomedical Biochemistry I (4 Credits)**

First of a two-semester sequence covering the major areas of biochemistry in a biomedical context. Chemistry of amino acids and proteins, enzymology, metabolism of carbohydrates and lipids. Emphasis is on biomedical research applications. Four lecture hours per week.

**CHEM 755 - Biomedical Biochemistry II (4 Credits)**

A continuation of CHEM 754. Topics include nucleic acids and protein biosynthesis, blood chemistry, respiration, acid-base chemistry, metabolism, and nutrition. Four lecture hours per week.

**Prerequisites:** CHEM 754.

**CHEM 759 - Special Topics in Molecular Biochemistry (3 Credits)**

May be repeated as content varies by title.

**CHEM 790 - Introduction to Research (3 Credits)**

A laboratory and introduction to modern research techniques. Six hours of laboratory per week and individual consultation with instructor.

**CHEM 791 - Introduction to Research (1-3 Credits)**

A continuation of CHEM 790. Six hours of laboratory per week and individual consultation with instructor.

**Prerequisites:** CHEM 790.

**CHEM 798 - Research in Chemistry I (1-12 Credits)**

Directed laboratory research and readings in chemistry.

**CHEM 799 - Thesis Preparation (1-12 Credits)****CHEM 898 - Research in Chemistry II (1-12 Credits)**

A continuation of CHEM 798 for Ph.D. candidates.

**CHEM 899 - Dissertation Preparation (1-12 Credits)**

## Chemistry, M.S.

### Learning Outcomes

- Masters students in Chemistry will Identify and conduct research scholarship or creative endeavors.
- Masters students in Chemistry will effectively communicate in their field of study through oral and written components.
- Masters students in Chemistry will critically and creatively solve problems in their field of study.
- Masters students in Chemistry will conduct ethical research in a responsible manner.
- Masters students in Chemistry will demonstrate attributes of professional development consistent with expectations within their field of study.

## Degree Requirements (30 Hours)

### Coursework

A candidate for the M.S. degree, while earning a minimum of 30 hours of course work beyond the baccalaureate degree, must complete the following:

### Five 700-Level Courses

CHEM 701, CHEM 790, CHEM 791, CHEM 898, and CHEM 899 may not be used to satisfy this requirement.

### Two Semesters of Thesis Research

Course	Title	Credits
CHEM 790	Introduction to Research	3
CHEM 791	Introduction to Research	3
<b>Total Credit Hours</b>		<b>6</b>

### Present One Divisional Seminar

Course	Title	Credits
CHEM 701	Seminar	1
<b>Total Credit Hours</b>		<b>1</b>

### Six Hours (minimum) of the Following

Course	Title	Credits
CHEM 898	Research in Chemistry II	6
<b>Total Credit Hours</b>		<b>6</b>

Note: The student must complete a Comprehensive Assessment. The Comprehensive Assessment is a combined oral and written exam which consists of a description of the thesis research progress to date and future plans.

Detailed departmental degree requirements are outlined in the Department of Chemistry and Biochemistry's Graduate Student Handbook, which is available on the website. An electronic copy can be requested from the graduate director.

## Chemistry, Ph.D.

### Learning Outcomes

- Doctoral students in Chemistry will identify and conduct original research.
- Doctoral students in Chemistry will effectively communicate in their field of study through oral and written components.
- Doctoral students in Chemistry will critically and creatively solve problems in their field of study.
- Doctoral students in Chemistry will conduct ethical research in a responsible manner.
- Doctoral students in Chemistry will demonstrate attributes of professional development consistent with expectations within their field of study.

## Degree Requirements (60 Post Baccalaureate Hours)

### Course Work

A Ph.D. candidate, while earning a minimum of 60 hours of course work beyond the baccalaureate degree, must complete:

#### Five 700-Level courses

(CHEM 701, CHEM 790, CHEM 791, CHEM 898, and CHEM 899 may not be used to satisfy this requirement.)

#### Two Semesters of Thesis Research

Course	Title	Credits
CHEM 790	Introduction to Research	3
CHEM 791	Introduction to Research	3
<b>Total Credit Hours</b>		<b>6</b>

#### Present Two Divisional Seminars

Course	Title	Credits
CHEM 701	Seminar	1
CHEM 701	Seminar	1
<b>Total Credit Hours</b>		<b>2</b>

Course	Title	Credits
24 Credits of CHEM 898		24
CHEM 898	Research in Chemistry II	
<b>Total Credit Hours</b>		<b>24</b>

#### At Least 12 Credit Hours of the Following Must be Completed

Course	Title	Credits
CHEM 899	Dissertation Preparation	12
<b>Total Credit Hours</b>		<b>12</b>

Note: The student must complete an oral and written comprehensive exam. The Oral Comprehensive Exam consists of a description of the dissertation research progress to date and future plans. The Written Comprehensive Exam consists of an original research idea.

Detailed departmental degree requirements are outlined in the Department of Chemistry and Biochemistry's Graduate Student Handbook, which is available on the website. An electronic copy can be requested from the graduate director.

## Criminology and Criminal Justice

Department Website (<http://www.cas.sc.edu/crju/>)

Brandon K. Applegate, *Chair*

Patricia Armstrong, *Director of Academic Programs*

The Department of Criminology and Criminal Justice offers programs leading to the M.A. degree with a major in Criminology and Criminal Justice and the Ph.D. in Criminology and Criminal Justice. Faculty research and teaching interests span a wide variety of crime- and criminal justice-related topics, including policing, courts, corrections, law and policy, macro- and microlevel criminological theory, sentencing, victimization, and program evaluation. Graduates from these programs are well-prepared to enter teaching, research, or policy-making positions in the criminal justice system.

## Financial Assistance

The department offers financial support in the form of graduate assistantships and fellowships. Both are awarded on a competitive basis to incoming graduate students and are dependent on available resources. There is no separate application for an assistantship or fellowship. All full-time students who have a completed application, express a desire for funding, and have been accepted into a graduate program will be considered. Applicants requesting all other types of financial assistance should apply to the director of Student Financial Aid and Scholarships, University of South Carolina, Columbia, SC 29208.

## M.A. / J.D. Dual Degree Program

The Department of Criminology and Criminal Justice, in cooperation with the University of South Carolina School of Law, offers a combined degree program which permits a student to obtain both the Juris Doctor and the Master of Arts in Criminal Justice degrees in approximately four years.

## Programs

- Criminology and Criminal Justice, M.A. (p. 46)
- Criminology and Criminal Justice, Ph.D. (p. 47)

## Courses

### CRJU 510 - Critical Incident Management for Criminal Justice (3 Credits)

Leadership and management strategies for criminal justice agencies during critical incidents and disasters including multi-agency and multi-jurisdictional response.

### CRJU 512 - Information-Based Management in Criminal Justice (3 Credits)

The collection and use of information and data-driven analysis in criminal justice organizations.

### CRJU 535 - Inmates and Prisons (3 Credits)

Examination of issues affecting prisons and the inmates confined within them. Specific topics of study will include the philosophy and goals of imprisonment, institutional crowding, inmate rights, inmate adaptation, and individual and collective misconduct.

**CRJU 554 - Women and Crime (3 Credits)**

Impact of gender-based relations on crime and the criminal justice system.

**Cross-listed course:** WGST 554

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy, GLD: Global Learning, GLD: Professional and Civic Engagement Leadership Experiences

**CRJU 558 - Crime Over the Life Course (3 Credits)**

Development of criminal and delinquent behavior over time.

**CRJU 563 - Race, Crime, and Criminal Justice (3 Credits)**

An historical overview of the intersection between issues of race, crime, and justice. The impact of the criminal justice system on minority groups.

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy

**CRJU 565 - Organized Crime (3 Credits)**

Origins and modern day activity of organized crime in the United States and internationally will be investigated. Attention is given to problems of criminal activity and the present day transnational character of criminal organizations.

**CRJU 575 - The Death Penalty (3 Credits)**

Overview of the history and evolution of the death penalty. Identification of key legal developments in death penalty jurisprudence.

**CRJU 577 - Law and Criminal Justice Policy (3 Credits)**

Legal and policy responses to crime and criminal justice issues.

**Prerequisites:** CRJU 313 or CRJU 314.

**CRJU 582 - Computer Applications in Criminal Justice (3 Credits)**

Computing, database systems, and software applications in research and professional practice.

**CRJU 591 - Selected Topics in Criminal Justice (3 Credits)**

A seminar for advanced students. Individual topics to be announced by title. May be repeated once with the consent of the advisor.

**CRJU 701 - Survey of Criminal Justice (3 Credits)**

Classical and recent literature in criminal justice. Trends and issues that transcend criminal justice.

**CRJU 702 - Law and Justice (3 Credits)**

Examination of law as an instrument of criminal justice policy, social control, and the protection of civil liberties.

**CRJU 703 - Research Methods in Criminal Justice (3 Credits)**

Scientific methods in criminal justice research to include methods of design, data collection, and interpretation of research findings.

**CRJU 704 - Organization and Management in Criminal Justice (3 Credits)**

Management strategies and selected analytic tools for the administration of criminal justice agencies.

**CRJU 705 - Quantitative Methods in Criminal Justice (3 Credits)**

Descriptive and inferential statistics and the use of computers in criminal justice.

**CRJU 706 - Advanced Quantitative Analysis for Criminology and Criminal Justice (3 Credits)**

A detailed treatment of the general linear model, logistic regression analysis, and statistical models for event count data with applications in criminology and criminal justice. Restricted to criminology and criminal justice majors.

**CRJU 711 - Police Practices and Problems (3 Credits)**

Historical and contemporary role of the police, societal expectations, resource allocation, police policies, and the effectiveness of various police strategies in controlling crime.

**CRJU 712 - Police Administration and Management (3 Credits)**

Principles of leadership and management applied to law enforcement.

**CRJU 714 - Ethics in Criminal Justice (3 Credits)**

Classic and contemporary theories of ethics and their applications to criminal justice decision-making.

**Cross-listed course:** PHIL 715

**CRJU 731 - Corrections (3 Credits)**

Historical development of corrections, trends, and changes in the field of corrections and rehabilitation.

**CRJU 732 - Correctional Policy (3 Credits)**

Policy development, implementation, and evaluation in corrections.

**CRJU 741 - Criminology (3 Credits)**

The major theories of the etiology of criminal behavior, including biological, environmental, and other causative factors.

**CRJU 751 - Juvenile Justice (3 Credits)**

Historical evolution of the juvenile justice system.

**CRJU 752 - Prevention and Treatment of Delinquency (3 Credits)**

Theories and methodologies for the organization of delinquency prevention and control programs. Emphasis on the role of the program evaluation.

**CRJU 791 - Selected Topics in Criminal Justice (3 Credits)**

Seminar for advanced students. Topics of current importance, such as drugs, judicial reform, or crime prevention. May be repeated for credit up to 6 semester hours with consent of advisor.

**CRJU 792 - Directed Study in Criminal Justice (3 Credits)**

Independent study for advanced students, under faculty supervision. May be repeated for credit up to 6 semester hours.

**CRJU 794 - Internship in Criminal Justice (3 Credits)**

Placement in a criminal justice agency under faculty supervision.

**CRJU 799 - Thesis Research: Thesis Preparation (1-9 Credits)****CRJU 810 - Crime, Law, and Public Policy (3 Credits)**

The study of the legal and policy-making processes as they apply to criminology and criminal justice. Examines the interrelationships between law, crime, and public policy and the research methodologies appropriate for the study of crime-related policies.

**CRJU 814 - Research Design in Criminology and Criminal Justice (3 Credits)**

Intensive coverage of the logic and practice of research design and measurement issues commonly encountered in criminology and criminal justice research. Emphasizes the use of experimental research designs as the preferred methodology for making causal inferences.

**CRJU 816 - Applied Quantitative Data Analysis (3 Credits)**

Review of applied quantitative methodological literature in criminology and criminal justice. Topics include analysis of data from randomized field experiments, interrupted time-series studies, regression discontinuity studies, instrumental variable estimation, treatment probability matching estimators, statistical power analysis, and study planning.

**CRJU 817 - Qualitative Research Methods and Data Analysis (3 Credits)**

Examination of the qualitative research paradigm and its contribution to social inquiry, including the collection, organization, and analysis of qualitative data. Collection and analytic strategies involve interviewing, observation, and textual analysis.

**CRJU 821 - Advanced Criminological Theory (3 Credits)**

Advanced coverage of theoretical and developments and empirical research in criminology, with a focus on definitive statements from important theoretical traditions, empirical tests of criminological theories, and the translation of theory into policy.

**CRJU 899 - Dissertation Preparation (1-12 Credits)**

Dissertation Preparation.

## Criminology and Criminal Justice, M.A.

### Learning Outcomes

- Students will be able to correctly frame research questions and/or hypotheses.
- Students will be able to synthesize and critically evaluate existing research studies in a given area, including the identification of any gaps in the literature.
- Students will be able to select the appropriate research design for their proposed research study.
- Students will be able to specify the appropriate analytic strategy for their proposed research study.
- Students will be able to identify and define major criminological theories from the field.
- Students will be able to synthesize and critically evaluate research studies from a particular theoretical perspective, including the identification of any gaps in the literature.
- Students will be able to identify the major constitutional limitations governing the conduct of criminal justice actors in the United States.
- Students will be able to identify principles of distributive and corrective justice and their application to criminal justice settings.
- Students will be able to identify and discuss important policy changes in America's response to crime.
- Students will be able to synthesize and critically evaluate research studies from a particular criminal justice policy area, including the identification of any gaps in the literature.

### Admission to the M.A. Program

Applicants must possess a baccalaureate degree from an accredited college or university. An undergraduate major in criminology, criminal justice, or a related social science is desirable. In addition to meeting all admission requirements of the University's Graduate School, applicants to the M.A. program must submit a university application through the Graduate School, including a written statement describing their interests in the criminology and criminal justice field and goals or objectives for their degree and career. Applicants must also submit scores obtained within the last five years on the Miller Analogies test (MAT) or Graduate Record Examination (GRE), two letters of academic reference, and official grade transcripts from all previous institutions.

## Degree Requirements (30 Hours)

Requirements for the M.A. degree include in the following:

### Core Courses (15 Hours)

*Must be completed with a grade of B or higher.*

Course	Title	Credits
CRJU 701	Survey of Criminal Justice	3
CRJU 702	Law and Justice	3
CRJU 703	Research Methods in Criminal Justice	3
CRJU 705	Quantitative Methods in Criminal Justice	3
CRJU 741	Criminology	3
<b>Total Credit Hours</b>		<b>15</b>

### Electives (9-15 Hours)

Students choosing the thesis option must take 9 hours of elective courses with no more than 6 credit hours below the 700 level (i.e. 500 or 600 level). Students choosing the non-thesis option must take an additional 6 credit hours of elective courses for a total of 15 credit hours of elective credit with no more than 9 credit hours below the 700 level (i.e. 500 or 600 level).

### Comprehensive Assessment

Each student must successfully complete the general M.A. comprehensive assessment, which tests students' knowledge of major philosophical, scientific, theoretical, and policy issues related to criminology and criminal justice. The comprehensive assessment examination varies depending on the chosen track (thesis vs. non-thesis). Students who fail the examination are permitted to retake it one time. Completion of the comprehensive assessment remains valid for two years after which the assessment must be repeated.

### Thesis or Non-Thesis Option (6 Hours for thesis)

Students may choose to complete a 6 credit hour thesis. Successful completion of the thesis will require an oral defense before the student's thesis committee. Students choosing the non-thesis option must take an additional 6 credit hours of elective courses in lieu of thesis credits for a total of 15 credit hours of elective credit with no more than 9 credit hours below the 700 level level (i.e., 500 or 600 level).

### Program Progress

Students who accumulate more than 6 hours of graduate credit below the grade of B will not be permitted to continue the program. No course may be repeated more than one time.

### Audited Courses

Core courses may not be audited. Other courses may be audited, but students must remember that audited courses cannot be repeated for credit.

### Transfer Credits

Students may transfer up to 6 credit hours from other programs and/or institutions provided they meet departmental requirements. Transfer credits may not be applied to core courses.

# Criminology and Criminal Justice, Ph.D.

## Learning Outcomes

- Students will be able to synthesize and critically evaluate existing research studies in a given area, including the identification of any gaps in the literature.
- Students will be able to identify the strengths and weaknesses of different research designs used in criminology and criminal justice.
- Students will be able to identify under what circumstances specific research designs are appropriate.
- Students will be able to design their own independent research study addressing a relevant question in criminology and criminal justice.
- Students will be able to summarize the basic premise of each major criminological theory.
- Students will be able to evaluate the strengths and weaknesses of major criminological theories.
- Students will be able to identify linkages between criminological theories and criminal justice policies.
- Students will be able to synthesize and critically evaluate research studies from a particular theoretical perspective, including the identification of gaps in the literature.
- Students will understand core ideas and empirical evidence in the field concerning the development, implementation, analysis, and evaluation of law and policy related to the criminal justice system.
- Students will be able to identify and apply appropriate methods for public policy analysis.
- Students will complete the Ph.D. degree within a reasonable period of time and will obtain a research and/or teaching position that is appropriate for the degree.

## Admission to the Ph.D. Program

Applicants must possess a baccalaureate or masters degree from an accredited college or university. An undergraduate or graduate degree in criminology, criminal justice, or a related social science is desirable. In addition to meeting all admission requirements of the University's Graduate School, applicants to the Ph.D. program must submit a university application through the Graduate School, including a written statement of research goals and objectives. The statement should outline the applicant's interests in criminology and criminal justice and discuss plans for developing a research agenda during the doctoral program of study. Applicant must also submit scores obtained within the last five years on the Graduate Record Examination (GRE), three letters of academic reference, official grade transcripts from all previous institutions, and a recent sole-authored writing sample or thesis chapter written during previous degree program..

## Degree Requirements (36 Post-Masters Hours)

Requirements for the Ph.D. degree include the following:

### Students Admitted with Master's (M.A./M.S.) or Law Degrees

#### Core Courses (15 Hours)

*Must be completed with a grade of B or higher.*

Course	Title	Credits
CRJU 706	Advanced Quantitative Analysis for Criminology and Criminal Justice	3
CRJU 810	Crime, Law, and Public Policy	3
CRJU 814	Research Design in Criminology and Criminal Justice	3
CRJU 821	Advanced Criminological Theory	3
CRJU 816 or CRJU 817	Applied Quantitative Data Analysis Qualitative Research Methods and Data Analysis	3
<b>Total Credit Hours</b>		<b>15</b>

Note: With approval of the graduate director, substantially equivalent courses from outside the department may be substituted for CRJU 706, CRJU 814, CRJU 816, and/or CRJU 817.

### Electives (9 Hours)

All of which must be at the 700-level or above.

### Qualifying Examination

All students admitted to the Ph.D. program in criminology and criminal justice must successfully complete a qualifying examination prior to formal admission to candidacy.

### Comprehensive Examination

Each student must successfully complete both a written and an oral Ph.D. comprehensive examination after completing all required core courses (CRJU 706, CRJU 810, CRJU 814, and CRJU 821). Students are examined on their knowledge of research methods and design, law and policy issues related to criminology and criminal justice, and their understanding of important issues related to criminological theory. If a student fails the Ph.D. comprehensive examination, the student will be permitted to retake the exam one time.

### Dissertation Preparation and Defense (12 Hours)

12 hours of dissertation credit must be successfully completed to earn the Ph.D. degree. The dissertation is an original research project that advances scientific knowledge in the student's chosen area of interest. The dissertation must be orally defended by the student before the student's dissertation examining committee. The oral defense before the examining committee cannot take place until after the successful completion of the comprehensive examination.

### Foreign Language

The foreign language requirement established by The Graduate School can be satisfied either by passing a reading proficiency examination in one of the foreign language areas or by completing the research methods sequence with a grade of B or higher in each course. English is accepted as satisfying this requirement for those students whose native language is not English.

Course	Title	Credits
CRJU 706	Advanced Quantitative Analysis for Criminology and Criminal Justice	3
CRJU 814	Research Design in Criminology and Criminal Justice	3
CRJU 816 or CRJU 817	Applied Quantitative Data Analysis Qualitative Research Methods and Data Analysis	3
<b>Total Credit Hours</b>		<b>9</b>

### Residency Requirement

Doctoral residency is established by meeting one of the following two options: (1) two consecutive semesters of full-time enrollment (9 or more credit hours per semester without an assistantship and 6 or more credit hours per semester with an assistantship); or (2) an approved program-specific alternative.

### Program Progress

Students who accumulate more than 6 hours of graduate credit below the grade of B will not be permitted to continue the program. No course may be repeated more than one time.

### Audited Courses

Core courses may not be audited. Other courses may be audited, but students must remember that audited courses cannot be repeated for credit.

### Transfer Credits

Students may transfer up to 6 credit hours from other programs and/or institutions provided they meet departmental requirements. Transfer credits may not be applied to core courses.

## Students Admitted with a B.A./B.S. Degree Only

### Master's-Level Course Work (24 Hours)

Course	Title	Credits
CRJU 701	Survey of Criminal Justice	3
CRJU 702	Law and Justice	3
CRJU 703	Research Methods in Criminal Justice	3
CRJU 705	Quantitative Methods in Criminal Justice	3
CRJU 741	Criminology	3
Three additional elective courses		9
<b>Total Credit Hours</b>		<b>24</b>

Note: No more than two elective courses (6 credit hours) below the 700 level may be applied to the program. Students who accumulate more than 6 hours of master's-level graduate credit below the grade of B will not be permitted to continue the program. No course may be repeated more than one time.

### Core Courses (15 Hours)

*Must be completed with a grade of B or higher.*

Course	Title	Credits
CRJU 706	Advanced Quantitative Analysis for Criminology and Criminal Justice	3
CRJU 810	Crime, Law, and Public Policy	3
CRJU 814	Research Design in Criminology and Criminal Justice	3
CRJU 821	Advanced Criminological Theory	3
CRJU 816 or CRJU 817	Applied Quantitative Data Analysis Qualitative Research Methods and Data Analysis	3
<b>Total Credit Hours</b>		<b>15</b>

Note: With approval of the graduate director, substantially equivalent courses from outside the department may be substituted for CRJU 706, CRJU 814, CRJU 816, and/or CRJU 817.

### Electives (9 Hours)

*Must be at the 700-level or above.*

### Qualifying Examination

All students admitted to the Ph.D. program in criminology and criminal justice must successfully complete a qualifying examination prior to formal admission to candidacy.

### Comprehensive Examination

Each student must successfully complete both a written and an oral Ph.D. comprehensive examination after completing all required course work. Students are examined on their knowledge of research methods and design, law and policy issues related to criminology and criminal justice, and their understanding of important issues related to criminological theory. If a student fails the Ph.D. comprehensive examination, the student will be permitted to retake the exam one time.

### Dissertation Preparation and Defense (12 Hours)

12 hours of dissertation credit must be successfully completed to earn the Ph.D. degree. The dissertation is an original research project that advances scientific knowledge in the student's chosen area of interest. The dissertation must be orally defended by the student before the student's dissertation examining committee. The oral defense before the examining committee cannot take place until after the successful completion of the comprehensive examination.

### Foreign Language

The foreign language requirement established by The Graduate School can be satisfied either by passing a reading proficiency examination in one of the foreign language areas or by completing the research methods sequence with a grade of B or higher in each course. English is accepted as satisfying this requirement for those students whose native language is not English.

Course	Title	Credits
CRJU 706	Advanced Quantitative Analysis for Criminology and Criminal Justice	3
CRJU 814	Research Design in Criminology and Criminal Justice	3
CRJU 816 or CRJU 817	Applied Quantitative Data Analysis Qualitative Research Methods and Data Analysis	3
<b>Total Credit Hours</b>		<b>9</b>

### Residency Requirement

Doctoral residency is established by meeting one of the following two options: (1) two consecutive semesters of full-time enrollment (9 or more credit hours per semester without an assistantship and 6 or more credit hours per semester with an assistantship); or (2) an approved program-specific alternative.

### Program Progress

Each student must successfully complete both a written and an oral Ph.D. comprehensive examination after completing all required course work. Students will be examined on their knowledge of research methods and design, data analysis, law and policy issues related to criminology and criminal justice, and their understanding of important issues related to criminological theory. If a student fails the Ph.D. comprehensive examination, the student will be permitted to retake the exam one time.

### Audited Courses

Core courses may not be audited. Other courses may be audited, but students must remember that audited courses cannot be repeated for credit.



### Transfer Credits

Students may transfer up to 6 credit hours from other programs and/or institutions provided they meet departmental requirements. Transfer credits may not be applied to core courses.

### Terminal Master's Degree

Students admitted to the Ph.D. program with only a baccalaureate degree and who complete all requirements for the Ph.D. other than the dissertation may be awarded a M.A. degree in criminology and criminal justice. Students choosing this option will not be permitted to complete the dissertation or be awarded the Ph.D. degree.

## English Language and Literature

Department Website (<http://www.cas.sc.edu/engl/>)

Nina Levine, *Chair*

The Department of English offers programs leading to the M.A., M.F.A., and Ph.D. degrees with areas of emphasis in English and American literature (M.A. and Ph.D.), composition and rhetoric (M.A. and Ph.D.), and speech communication (M.A.). The department also offers joint master's degrees with the School of Library and Information Science (M.A./M.L.I.S.) and the Moore School of Business (M.A./M.S.) (see Graduate Dual Degree Programs (p. 463)). The M.A.T. degree in English is offered in cooperation with the College of Education. Interdisciplinary affiliations with African American Studies, Southern Studies, and Women's Studies increase the range of course options and research opportunities within degree programs.

As the number and variety of degree programs suggest, our graduates pursue careers in many fields, including college- and university-level teaching, public and private secondary education, librarianship, publishing, creative and technical writing, journalism, public relations, and business administration. Graduates of our doctoral programs are especially well qualified for academic careers, and they enter tenure-track positions upon graduation at a rate consistently higher than the national average.

## Degree Requirements

Residence and other basic requirements for degrees in English are established by The Graduate School. Special requirements established by the department are outlined below.

Graduate credit for degree candidates in English normally is restricted to courses numbered 700 or above. Qualified graduate students may enroll in courses numbered 500-699 with the approval of the department's director of graduate studies and may receive graduate credit by doing such additional work as required by the department and the instructor. The chair of the department may authorize students in other departments or schools to obtain graduate credit in most English courses numbered 500-699.

## Admission

Applicants for admission to the M.A., M.F.A., or Ph.D. degree programs in the Department of English must have completed a minimum of 24 semester hours of upper-division undergraduate courses in English or an appropriate related discipline, with grades indicating ability for successful graduate work in the department. Applicants for all degrees must submit all application forms required by The Graduate School, satisfactory scores on the GRE general test, a sample of academic

writing, a statement of purpose, and at least two satisfactory letters of recommendation from persons familiar with their academic achievement.

To particularly well-qualified candidates, the Department offers the chance to apply for Direct Admission to the Ph.D. Program. All those applying for direct admission will also be considered for regular admission to the M.A. program.

Successful applicants to the M.A., M.A.T., and M.F.A. programs typically have GRE verbal scores of 550 and above (for tests taken before October 2002), GRE analytical scores in the 3-5 range (for tests taken October 2002 and after), and an undergraduate GPA of 3.00 or better. Students admitted to the Ph.D. program generally have GRE verbal and analytical scores of 600 (for tests taken before October 2002) and a GPA of 3.50 or better in their undergraduate (direct-admission applicants) or master's degree course work. These numbers are provided as guidelines; we do not set absolute cut-off scores. All parts of an application are carefully considered, with especially close attention given to the writing sample.

An applicant who lacks adequate undergraduate course work may have to take up to 12 credit hours of 400-level literature or communication courses (depending on the degree emphasis sought) before the application will be considered.

The application deadline is December 15 for those wishing to be considered for graduate assistantships and fellowships. For all others the deadline is April 15.

## Programs

- Creative Writing, M.F.A. (p. 53)
- English, M.A. (p. 54)
- English, Ph.D. (p. 55)

## Courses

### ENGL 550 - Language of the Professions (3 Credits)

Practical survey of the syntactic structures of English; usage, social and regional variation emphasis on data.

**Prerequisites:** ENGL 450, LING 421 or ENGL 680, LING 600.

### ENGL 565 - African American Theatre (3 Credits)

The major movements, figures, plays, and critical strategies that have marked the development of African American theatre in the 19th, 20th, and 21st centuries.

**Prerequisites:** ENGL 101 and ENGL 102, and one course between ENGL 270- ENGL 292.

**Cross-listed course:** AFAM 565, THEA 565

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy, GLD: Professional and Civic Engagement Leadership Experiences

### ENGL 566 - Special Topics in U.S. Film and Media (3 Credits)

Intensive study of a specific topic in U.S. film and media studies. May be repeated as content varies by title.

**Prerequisites:** FAMS 240.

**Cross-listed course:** MART 593

### ENGL 600 - Seminar in Verse Composition (3 Credits)

First half of a year-long course in the writing of poetry taught by a contemporary poet. Limited to 15 students.

**Prerequisites:** ENGL 101 and ENGL 102, and one course between ENGL 270- ENGL 292.

**ENGL 601 - Seminar in Verse Composition (3 Credits)**

Second half of a year-long course in the writing of poetry taught by a contemporary poet. Limited to 15 students.

**Prerequisites:** ENGL 101 and ENGL 102, and one course between ENGL 270-ENGL 292.

**ENGL 602 - Fiction Workshop: Short Story (3 Credits)**

Instruction in the writing of short fiction taught by a contemporary prose writer. May be repeated once for credit.

**Prerequisites:** ENGL 101 and ENGL 102, and one course between ENGL 270-ENGL 292.

**ENGL 603 - Non-Fiction Prose Workshop (3 Credits)**

Instruction in the writing of the nonfiction essay taught by a contemporary prose writer. May be repeated once for credit.

**Prerequisites:** graduate status in the English department, or permission of instructor for undergraduates.

**ENGL 604 - Seminar in Composition for the Visual Media (3 Credits)**

Writing for the visual arts, the student will write a treatment (prospectus) and one or more multimedia scripts; or one or more teleplays; or a feature-length screenplay. Limited to 15 students.

**Prerequisites:** ENGL 101 and ENGL 102 or equivalent; ENGL 565 or equivalent experience in film as determined by the instructor.

**ENGL 605 - Seminar in Composition for the Visual Media (3 Credits)**

Writing for the visual arts, the student will write a treatment (prospectus) and one or more multimedia scripts; or one or more teleplays; or a feature-length screenplay. Limited to 15 students.

**Prerequisites:** ENGL 101 and ENGL 102 or equivalent; ENGL 565 or equivalent experience in film as determined by the instructor.

**ENGL 606 - Playwriting Workshop (3 Credits)**

Instruction in playwriting taught by a contemporary playwright. May be repeated once for credit.

**Prerequisites:** graduate status in the English department, or permission of instructor for undergraduates.

**ENGL 610 - Fiction Workshop: Book-Length Manuscript (3 Credits)**

Instruction in the writing of book-length manuscripts taught by a contemporary prose writer. May be repeated once for credit.

**Prerequisites:** ENGL 101 and ENGL 102, and one course between ENGL 270- ENGL 292.

**ENGL 611 - Writing the Longer Nonfiction Project (3 Credits)**

Instruction in the writing of a book-length nonfiction memoir or literary journalism project taught by a contemporary prose writer. May be repeated once for credit.

**Prerequisites:** graduate status in the English department, or permission of instructor for undergraduates.

**ENGL 612 - Writing Poetry: Traditional and Modern Forms (3 Credits)**

The writing of traditional and modern poetic forms. Exercises will give practice in composing metered and free verse. Representative masterpieces of traditional and modern poetry will also be studied.

**Prerequisites:** ENGL 101 and ENGL 102, and one course between ENGL 270- ENGL 292.

**ENGL 613 - Writing the Full-Length Play (3 Credits)**

Instruction in the writing of a full-length, two-act play for publication or production. May be repeated once for credit.

**Prerequisites:** graduate status in the English department, or permission of instructor for undergraduates.

**ENGL 615 - Academic and Professional Writing (3 Credits)**

A workshop course in the development and revision of writing for academic and professional audiences.

**Prerequisites:** ENGL 101 and ENGL 102, and one course between ENGL 270- ENGL 292.

**ENGL 616 - Writing Children's and Young Adult Literature (3 Credits)**

Critical study and practical crafting of literature for children and/or young adults, exploring the demands of these genres both through the reading of representative works and relevant secondary sources and through the writing of creative works. Undergraduate students must receive permission of instructor.

**ENGL 620 - Computer Methods for Humanistic Problems (3 Credits)**

Introduction to data processing concepts suitable for research interests in non-numerical areas such as the humanities.

**ENGL 620P - Laboratory for Computer Methods for Humanistic Problems (1 Credit)**

Broad but intensive introduction to computer systems and programming for students in the humanities. No mathematical or scientific background is presumed. Laboratory experience with data-processing equipment; introduction to elementary digital computer programming in an appropriate language.

**Corequisite:** ENGL 620.

**ENGL 650 - Special Topics in Literature (1-3 Credits)**

Course content varies and will be announced in the schedule of classes by title. May be repeated for credit as topics vary.

**Prerequisites:** ENGL 101 and ENGL 102.

**ENGL 680 - Survey of Linguistics (3 Credits)**

Survey of core areas of linguistics and extensions to closely related disciplines. Introduction to the linguistic component of human cognition. Formal description and analysis of the general properties of speech and language, the organization of language in the mind/brain, and cross-linguistic typology and universals.

**Cross-listed course:** ANTH 600, LING 600

**ENGL 690 - Special Topics in Composition (3 Credits)**

Course content varies and will be announced in the schedule of classes by title.

**Prerequisites:** ENGL 101 and ENGL 102.

**ENGL 691 - Teaching of Literature in College (2 Credits)**

Introduction to the methods of teaching literature, with emphasis on current pedagogical practice and theory and applications of electronic media. The course meets during the first seven weeks of the term and provides supervision of graduate students teaching English 101.

**ENGL 692 - Teaching of Composition in College (1 Credit)**

Introduction to the methods of teaching composition, with emphasis on current pedagogical practice and theory and applications of electronic media. The course meets during the first seven weeks of the term and provides supervision of graduate students teaching English 102.

**ENGL 700 - Introduction to Graduate Study of English (3 Credits)**

Lectures, discussions, and practical assignments in the history, principles, and methods of research into writings in English, taught by various members of the department. Recommended for M.A. and Ph.D. students in the first year of course work.

**ENGL 701 - Special Topics in Old English Literature and Culture (3 Credits)**

Selected topics in Old English literature and culture. May be repeated up to five times for credit as topics vary.

**ENGL 704 - Special Topics in Medieval Literature and Culture (3 Credits)**

Selected topics in medieval literature and culture. May be repeated up to five times for credit as topics vary.

**ENGL 706 - Special Topics in 16th and 17th Century British Literature and Culture (3 Credits)**

Selected topics in 16th and 17th century British literature and culture. May be repeated up to five times for credit as topics vary.

**ENGL 707 - Special Topics in 18th Century British Literature and Culture (3 Credits)**

Selected topics in 18th century British literature and culture. May be repeated up to five times for credit as topics vary.

**ENGL 709 - Special Topics in 19th Century British Literature and Culture (3 Credits)**

Selected topics in 19th century British literature and culture. May be repeated up to five times for credit as topics vary.

**ENGL 714 - Special Topics in 20th & 21st Century British Literature and Culture (3 Credits)**

Selected topics in 20th and 21st century British literature and culture. May be repeated up to five times for credit as topics vary.

**ENGL 719 - Special Topics in Colonial American Literature and Culture (3 Credits)**

Selected topics in colonial American literature and culture. May be repeated up to five times for credit as topics vary.

**ENGL 721 - Special Topics in 19th Century American Literature and Culture (3 Credits)**

Selected topics in 19th century American literature and culture. May be repeated up to five times for credit as topics vary.

**ENGL 722 - Special Topics in 20th & 21st Century American Literature and Culture (3 Credits)**

Selected topics in 20th and 21st century American literature and culture. May be repeated up to five times for credit as topics vary.

**ENGL 731 - Special Topics in Children's and Young Adult Literature (3 Credits)**

Selected topics in children's and young adult literature. May be repeated up to five times for credit as topics vary.

**ENGL 733 - Classics of Western Literary Theory (3 Credits)**

Problems of literary theory in texts from the ancients to the 17th century, with an emphasis on the classical tradition.

**Cross-listed course:** CPLT 701

**ENGL 734 - Modern Literary Theory (3 Credits)**

Problems of literary theory from the 18th century to the 1960s.

**Cross-listed course:** CPLT 702

**ENGL 736 - Special Topics in Gender and Sexuality Studies (3 Credits)**

Selected topics in gender and sexuality studies. May be repeated up to five times for credit as topics vary.

**ENGL 739 - Special Topics in Critical Race and Ethnic Studies (3 Credits)**

Selected topics in critical race and ethnic studies. May be repeated up to five times for credit as topics vary.

**ENGL 740 - Special Topics in Southern Literature and Culture (3 Credits)**

Selected topics in literature and culture of the U.S. South. May be repeated up to five times for credit as topics vary.

**ENGL 741 - Special Topics in African American Literature and Culture (3 Credits)**

Selected topics in African American literature and culture. May be repeated up to five times for credit as topics vary.

**ENGL 743 - Special Topics in Women's Literature and Culture (3 Credits)**

Selected topics in women's literature and culture. May be repeated up to five times for credit as topics vary.

**ENGL 746 - Special Topics in Transatlantic Literature and Culture (3 Credits)**

Selected topics in transatlantic literature and culture. May be repeated up to five times for credit as topics vary.

**ENGL 747 - Special Topics in Global Anglophone Literature and Culture (3 Credits)**

Selected topics in global Anglophone literature and culture. May be repeated up to five times for credit as topics vary.

**ENGL 748 - Special Topics in Postcolonial Literature and Culture (3 Credits)**

Selected topics in postcolonial literature and culture. May be repeated up to five times for credit as topics vary.

**ENGL 749 - Special Topics in Performance Studies (3 Credits)**

Selected topics in performance studies. May be repeated up to five times for credit as topics vary.

**ENGL 754 - Special Topics in Film and Media Studies (3 Credits)**

Selected topics in film and media studies. May be repeated up to five times for credit as topics vary.

**ENGL 764 - Special Topics in Theory and Critical Methods (3 Credits)**

Selected topics in theory and critical methods. May be repeated up to five times for credit as topics vary.

**ENGL 765 - Advanced Film Study (3 Credits)**

Methods of film analysis, resources for research, and the major critical theories.

**Cross-listed course:** CPLT 765

**ENGL 766 - Special Topics in Genre, Form, and Aesthetics (3 Credits)**

Selected topics in genre, form, and aesthetics. May be repeated up to five times as topics vary.

**ENGL 776 - Introduction to Bibliography and Textual Studies (3 Credits)**

Introduction to analytical, descriptive, and textual bibliography, and to the principles and practice of editing. Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

**ENGL 781 - History of English Language (3 Credits)**

The historical background of Modern English with attention to the major linguistic and cultural developments which distinguish English from other related languages. No prior knowledge of Old English or Middle English is required. Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

**Cross-listed course:** LING 731

**ENGL 782 - Varieties of American English (3 Credits)**

Social and regional variation in American English since the colonial period. Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

**Cross-listed course:** LING 745

**ENGL 788 - Stylistics (3 Credits)**

Linguistic analysis of literary texts. Linguistic definition of style; stylistic choices as the author's voice. Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

**ENGL 789 - Poetics (3 Credits)**

The question of meaning in poetry with special attention to linguistic structure as the source of that meaning; also prosody and related formal effects. Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

**ENGL 790 - Survey of Composition Studies (3 Credits)**

Comprehensive survey of the history and development of composition studies, and of the present state of knowledge about theories, principles, and practices in the field. Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

**ENGL 791 - Introduction to Research on Written Composition (3 Credits)**

Introduction to the types and methods of research on written composition, both qualitative and quantitative, with intensive analysis of representative exemplars of these types and methods. Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

**ENGL 792 - Classical Rhetoric (3 Credits)**

Survey of ancient Greek and Roman rhetorical theory. Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

**ENGL 793 - Rhetorical Theory and Practice, Medieval to Modern (3 Credits)**

Survey of major theories of rhetoric from medieval to modern times. Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

**ENGL 794 - Modern Rhetorical Theory (3 Credits)**

Survey of 20th-century contributions to rhetorical theory. Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

**ENGL 795 - The Teaching of Business and Technical Writing (3 Credits)**

A study of theory and practice in business, technical, and scientific writing with emphasis on the pedagogical materials and techniques available to the business and technical writing teacher. Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

**ENGL 796 - Special Topics in the Teaching of English (1-3 Credits)**

Exploration of issues relevant to the teaching of literature, composition, rhetoric, or speech communication. May be repeated for credit as topics vary.

**ENGL 797 - Current Scholarship in Rhetoric and Composition (3 Credits)**

Close study of annual issues of recent journals in the field to identify current trends in research and models for scholarly writing.

**ENGL 799 - Thesis Preparation (1-9 Credits)**

Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

**ENGL 803 - Special Topics: Seminar in Literary and Cultural Studies (3 Credits)**

Specialized study in literary and cultural studies. May be repeated up to four times for credit as topics vary.

**ENGL 804 - Special Topics: Seminar in Theory and Critical Methods (3 Credits)**

Specialized study in theory and critical methods. May be repeated up to four times for credit as topics vary.

**ENGL 805 - Special Topics: Seminar in Media Studies (3 Credits)**

Specialized study in digital, print, and/or cinematic media. May be repeated up to four times for credit as topics vary.

**ENGL 831 - Theory of Prose Fiction (3 Credits)**

Various types of prose fiction from folk tales and fables to short stories and novels; including historical changes in fictional forms, the function of technical devices, and modern theories of narrative. Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

**ENGL 832 - Theory of Poetry (3 Credits)**

A study of various aspects of poetry as an art form, including rhythm, meter, sound, color. Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

**ENGL 846 - Studies in Southern Literature (3 Credits)**

Topics selected by the instructor for specialized study.

**ENGL 850 - Studies in British and American Literature (3 Credits)**

Topics selected by the instructor for specialized study. Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

**ENGL 862 - Special Topics in Children's and Young Adult Literature (3 Credits)**

Special topics selected by instructor for specialized study. May be repeated as content varies by title.

**ENGL 870 - Seminar in Bibliography, Textual Criticism, and Editing (3 Credits)**

Seminar in analytical and descriptive bibliography. Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

**ENGL 871 - Seminar in Bibliography, Textual Criticism, and Editing (3 Credits)**

Seminar in textual criticism and editing of specific forms of publication (e.g., manuscripts, plays, poetry, novels). Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.  
**Prerequisites:** ENGL 776 or equivalent.

**ENGL 872 - Seminar in Bibliography, Textual Criticism, and Editing (3 Credits)**

Seminar in textual criticism and editing of particular periods of English or American literature. Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

**Prerequisites:** ENGL 776 or equivalent.

**ENGL 890 - Studies in Rhetoric and Composition (3 Credits)**

Topics selected by the instructor for specialized study. May be repeated as topics vary. Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

**ENGL 895 - Directed Reading and Research (1-3 Credits)**

Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

**ENGL 896 - Directed Reading and Research (1-3 Credits)**

Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

**ENGL 899 - Dissertation Preparation (1-12 Credits)**

Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

**SPCH 543 - Communication, Law, and Society (3 Credits)**

Examines the role of communication in legal and judicial contexts. Focus on case studies that illustrate the theoretical and practical significance of rhetoric in the work of the courts, lawyers, and public advocacy groups.

**SPCH 700 - Introduction to the Advanced Study of Speech Communication & Rhetoric (3 Credits)**

Introduction to theories, concepts, and analysis in critical rhetorical and communication research. Emphasis on rhetoric, public advocacy and discourse, performance, critical theory.

**SPCH 701 - Pedagogies of Speech Communication & Rhetoric (3 Credits)**

Survey of issues, theories, and methods of pedagogy in speech communication, rhetoric, and performance studies.

**SPCH 734 - Theories of Public Argumentation (3 Credits)**

Advanced study of theories and practices of public and cultural argumentation. Emphasis on critical argumentation theories and analysis of public arguments.

**SPCH 736 - Critical Theory & Rhetoric (3 Credits)**

Examination of the role of language, rhetoric, and argumentation in the historical and contemporary project of critical social theory.

**SPCH 741 - Theory and Practice of Rhetorical Criticism (3 Credits)**

Advanced study of theories of rhetorical criticism and the conceptual assumptions that motivate, compose, and justify critical interpretations of rhetorical acts, performances, and events.

**SPCH 744 - Public Advocacy and Civil Society (3 Credits)**

Examination of the rhetorical operations that define, sustain, and reshape historical and contemporary forms of civil society, including modes of public address, community engagement, non-profit advocacy, and political communication.

**SPCH 746 - Rhetoric of Movements (3 Credits)**

Advanced study of the rhetoric of political social movements.

**SPCH 747 - Rhetorical Power, Institutional Discourse, and Recognition (3 Credits)**

Advanced study of institutional discourse and the role of institutional argumentation in the formation and critique of power. Includes directed inquiry into the rhetorical dynamics of consensus-formation, dissent, and recognition as they unfold between institutions, publics, and cultures.

**SPCH 749 - Performance and Cultural Studies (3 Credits)**

Theories and research exploring the mutual contributions of performance and cultural studies. Emphasis on performance as both a subject of critical/cultural inquiry as well as a method of critical/cultural invention.

**SPCH 751 - Performance Criticism (3 Credits)**

Study of critical performance methods and the conceptual and paradigmatic assumptions that motivate, compose, and justify performance as a critical act, criticism as a performative act, and performance events as critical objects.

**SPCH 755 - Theories of Performance, Representation, and Advocacy (3 Credits)**

Exploration of performance as a site of and means for representing and creating social change.

**SPCH 761 - Ethics & Politics of Rhetoric (3 Credits)**

Examination of the ethical and political commitments in the rhetorical tradition. Emphasis on the intersection of rhetorical scholarship with issues in communication ethics and their implications for political rhetoric.

**SPCH 762 - Rhetorics of Materiality, Technology, and Science (3 Credits)**

Study of the rhetorical analysis of scientific and technological public discourse, implications of public science and technological changes for the theory and practice of rhetoric, and the rhetorical construction of sciences and technologies.

**SPCH 764 - Rhetoric, Violence, and the Discourse of Human Rights (3 Credits)**

Advanced study of the rhetorical violence that attends the human condition and its attempted redress through discourses of human rights. Special attention devoted to theories of violence and critical interpretation of legal discourse, human rights doctrine, and humanitarian advocacy.

**SPCH 790 - Special Topics in Speech Communication, Rhetoric, and Performance (3 Credits)**

Selected topics in speech communication, rhetoric, and performance studies. May be repeated as content varies by title.

**SPCH 792 - Classical Rhetorical Theory (3 Credits)**

Survey of ancient Greek and Roman rhetorical theory.

**SPCH 793 - Medieval to Modern Rhetorical Theory (3 Credits)**

Survey of important figures, debates, and perspectives in rhetorical theory from the Medieval period to the 19th century.

**SPCH 794 - Contemporary Rhetorical Theory (3 Credits)**

Survey of major figures, debates, and theories in the field of rhetoric from the 19th century to present.

**SPCH 796 - Independent Study in Speech Communication, Rhetoric, and Performance (1-3 Credits)**

Individually arranged studies in specialized areas of speech communication, rhetoric, or performance.

**SPCH 797 - Special Projects in Speech Communication, Rhetoric, and Performance (1-3 Credits)**

Individually research projects focused on a selected area of speech communication, rhetoric, or performance.

**SPCH 799 - Thesis Preparation (1-9 Credits)**

To be arranged by candidates for the Master of Arts degree with the instructor under whose direction the master's thesis is being written.

## Creative Writing, M.F.A.

### Learning Outcomes

- Students will develop and refine their individual writerly voices, produce literary work of a high quality, and demonstrate a comprehensive understanding of their own aesthetics, as well as the literary models and cultural sources of those aesthetics.
- Students will demonstrate an advanced comprehension of editing and revision techniques and strategies, which include synthesizing challenges, advice and critiques from professors and fellow M.F.A. students.
- Students will demonstrate at least the early stages of professionalization, which may include preparation to publish creative work, performance of work for an audience, experience in literary editing, exposure to creative writing pedagogy, and/or knowledge of academic and alterative careers for creative writers.
- Students will actively engage in a wider literary culture and community, whether at the local, regional, national, or international level.

## Degree Requirements (45 Hours)

The student must choose one of three options within the program: poetry, fiction, or creative non-fiction. In addition to all the basic requirements for admission to the graduate English program, applicants must submit a writing sample in the genre that they wish to pursue (25 pages of fiction or writing for the media; at least 12 poems).

### Workshop Courses (15 Hours)

#### Theory (6 Hours)

- Three hours may be in theory and teaching of composition, exclusive of ENGL 691 and ENGL 692.

#### Literature (9 Hours)

- Select 9 hours

#### Approved Electives (9 Hours)

- Select 9 hours

#### Thesis (6 Hours)

Course	Title	Credits
ENGL 799	Thesis Preparation	1-9
<b>Total Credit Hours</b>		<b>1-9</b>

- A thesis, which will be a book-length work (a novel, a collection of short stories, a group of poems, or a piece of writing for the visual media) of a quality that compares favorably with work being published by university presses and commercial publishers.

#### Oral Exam

- An oral examination on the thesis.

#### Comprehensive Exam

- A three-hour written comprehensive examination in the history and practice of the student's genre.

## English, M.A.

### Learning Outcomes

- Students will demonstrate in-depth knowledge of specific authors and works and/or central issues relevant to their fields of emphasis.
- Students will apply professionally relevant theoretical concepts to the analysis of canonical texts and/or central issues specific to their fields of emphasis.
- Students will demonstrate facility in basic research methods and the use of existing scholarship specific to their fields of emphasis.
- Students will develop in-depth knowledge in their field of emphasis, along with competency in at least one other area of literary and rhetorical studies.

## Degree Requirements (30 Hours)

### English, M.A. with an Emphasis in English and American Literature

The student must select one of the following areas for concentration: English literature before 1660, English literature after 1660, or American literature.

Requirements include the following:

#### Coursework (12 Hours)

- One course in American Literature
- One course in English Literature before 1660
- One course in English Literature after 1660
- One additional course in the Exam Area

#### Five Electives (15 Hours)

Two may be taken outside the department.

#### Recommended Course

Course	Title	Credits
ENGL 700	Introduction to Graduate Study of English	3

#### Thesis (3 Hours)

Course	Title	Credits
ENGL 799	Thesis Preparation	3
<b>Total Credit Hours</b>		<b>3</b>

#### Foreign Language

A reading knowledge of one foreign language.

### English, M.A. with an Emphasis in Composition and Rhetoric

Requirements include the following:

#### Coursework (6 Hours)

Course	Title	Credits
ENGL 790	Survey of Composition Studies	3
ENGL 791	Introduction to Research on Written Composition	3
<b>Total Credit Hours</b>		<b>6</b>

#### Two Courses from the Following (6 Hours)

Course	Title	Credits
Select two of the following:		
ENGL 690	Special Topics in Composition (see workshop course restrictions)	3
ENGL 792	Classical Rhetoric	3
ENGL 793	Rhetorical Theory and Practice, Medieval to Modern	3
ENGL 794	Modern Rhetorical Theory	3
ENGL 795	The Teaching of Business and Technical Writing	3
ENGL 890	Studies in Rhetoric and Composition	3
<b>Total Credit Hours</b>		<b>6</b>

#### English and/or American Literature, 700-800 Level (6 Hours)

No more than one workshop course may be counted in the 30 hours of classroom credits; students wishing to emphasize technical writing should consult the graduate director about special conditions.

#### Electives (9 Hours)

Electives must be approved by the Composition and Rhetoric Committee.

#### Foreign Language

A reading knowledge of one foreign language.

#### Thesis (3 Hours)

Course	Title	Credits
ENGL 799	Thesis Preparation	3
<b>Total Credit Hours</b>		<b>3</b>

## English, M.A. with an Emphasis in Speech Communication

Requirements include the following:

### Coursework (6 Hours)

Course	Title	Credits
SPCH 700	Introduction to the Advanced Study of Speech Communication & Rhetoric	3
SPCH 701	Pedagogies of Speech Communication & Rhetoric	3
<b>Total Credit Hours</b>		<b>6</b>

### Speech Communication (12 Hours)

Four additional courses in speech communication at the 700 or 800-level.

### Electives (9 Hours)

Three electives at the 700 or 800-level reflecting the student's particular professional or academic objectives; electives must be approved in advance by the student's advisor.

### Thesis (3 Hours)

Students may enroll in additional hours of SPCH 799, but only three hours count toward completion of the degree.

Course	Title	Credits
SPCH 799	Thesis Preparation	3
<b>Total Credit Hours</b>		<b>3</b>

## English, Ph.D.

### Learning Outcomes

- Students will demonstrate mastery of all available research methods and existing scholarship specific to their fields of emphasis.
- By the end of their coursework, students will demonstrate in-depth knowledge of their primary scholarly field of emphasis, including extensive knowledge of authors, texts, and central issues specific to a major area of literary and rhetorical studies.
- Students will extend the applicable range of professionally relevant theoretical concepts by using them in the analysis of canonical and/or marginalized texts and/or central issues specific to their fields of emphasis.
- By the end of their coursework, students will demonstrate in-depth knowledge of a secondary scholarly field of emphasis, including extensive knowledge of authors, texts, and central issues specific to a significant area of literary and rhetorical studies.

## Degree Requirements (36 Post-Masters Hours)

### Doctor of Philosophy in English with an Emphasis in English and American Literature (36 Hours <sup>1</sup>)

For admission, the applicant must have a master's degree or its equivalent. Each candidate must have a major and minor field. The major field may be chosen from the following: Medieval, Renaissance, Restoration and 18th-century English literature, 19th-century English literature, 20th-century English literature, colonial and 19th-century American literature, 20th-century American literature. The following may be used for the minor field only: linguistics, comparative literature, criticism theory, women's studies, history of the book and authorship, composition and rhetoric, and Southern literature. Students may choose

to design an ad hoc minor, subject to approval by the Graduate Program Committee. Examples of ad hoc minors approved in the past include religion and literature, children's literature, and computers and literature.

Admission by the Department of English for graduate study does not mean admission as a candidate in the English and American literature Ph.D. program. Students are admitted to such candidacy on the basis of their record and a meeting with the Director of Graduate Studies and the major adviser, to be held at the beginning of the student's third term. Prior to this meeting, the Graduate Director will review the student's class grades with the expectation of at least a 3.0 GPA over the course of the first year of the study. The student will come to the meeting with a completed Program of Study form and an accompanying statement detailing progress thus far and plans for future study. In the event of an unsuccessful review, the student will be put on probation, not be admitted to candidacy, and be required to maintain a 3.5 GPA for each of the following two semesters. Additionally, field faculty will meet at the end of the student's second year in order to make a recommendation to the Graduate Director about the student's future in the program. The Graduate Director will factor this recommendation and the student's GPA into a decision about whether the probationary student should be admitted to candidacy at the end of the second year and allowed to continue the program.

- <sup>1</sup> Students who have taken equivalent graduate courses prior to admission to the PhD program may petition the Graduate Program Committee to transfer up to six hours credit in lieu of courses required for the Ph.D. However, these courses cannot be more than eight years old by the time they receive their degree.

Requirements include the following:

### Program of Study

Each student develops a program of study in consultation with the doctoral advisory committee (in place by the end of the first semester of course work) that includes the following. ENGL 691 and ENGL 692 may not be used to fulfill this requirement.

### Introductory Course (3 Hours)

Course	Title	Credits
ENGL 700	Introduction to Graduate Study of English	3
<b>Total Credit Hours</b>		<b>3</b>

### 800-Level Seminars (6 Hours)

#### Critical Theory (3 Hours)

Course	Title	Credits
Select one of the following:		3
ENGL 734	Modern Literary Theory	
Equivalent Course		
<b>Total Credit Hours</b>		<b>3</b>

### Written Comprehensive Exam

A 72-hour take-home exam that consists of responses to one question in the primary field and one question in the secondary field. The completed exam should not exceed 7,500 words in length.

### Oral Exam

On the Student's Major Field.

**Dissertation Preparation (12 Hours)****Foreign Languages**

Reading proficiency in at least one language other than English, demonstrated in one of the following ways:

1. by passing a reading exam in a language other than English;
2. by passing a graduate-level course in a literature other than English, not in translation, with a grade of B or better;
3. by passing ENGL 701 with a grade of B or better.

Reading proficiency in two languages other than English may be required by the student's doctoral advisory committee if, in its judgment, such proficiency is necessitated by the student's research plans or by professional standards then current in the student's field.

**Doctor of Philosophy in English with an Emphasis in Composition and Rhetoric (42 Hours <sup>1</sup>)**

For admission, the applicant must have a master's degree, or its equivalent, in English, composition and rhetoric, or a related field.

Admission by the Department of English for graduate study does not mean admission as a candidate in the composition and rhetoric Ph.D. program. Students are admitted to such candidacy on the basis of their record and a meeting with the Director of Graduate Studies and the major adviser, to be held at the beginning of the student's third term. Prior to this meeting, the Graduate Director will review the student's class grades with the expectation of at least 3.0 GPA over the course of the first year of study. The student will come to the meeting with a completed Program of Study form and an accompanying statement detailing progress thus far and plans for future study. In the event of an unsuccessful review, the student will be put on probation, not be admitted to candidacy, and be required to maintain a 3.5 GPA for each of the following two semesters. Additionally, field faculty will meet at the end of the student's second year in order to make a recommendation to the Graduate Director about the student's future in the program. The Graduate Director will factor this recommendation and the student's GPA into a decision about whether the probationary students should be admitted to candidacy at the end of the second year and allowed to continue in the program.

- <sup>1</sup> Students who have taken equivalent graduate courses prior to admission to the PhD program may petition the Graduate Program Committee to transfer up to six hours credit in lieu of courses required for the Ph.D. However, these courses cannot be more than eight years old by the time they receive their degree.

Requirements include the following:

**Coursework (9 Hours)**

Course	Title	Credits
ENGL 790	Survey of Composition Studies	3
ENGL 791	Introduction to Research on Written Composition	3
ENGL 890	Studies in Rhetoric and Composition	3
<b>Total Credit Hours</b>		<b>9</b>

**Two Courses (6 Hours)**

Course	Title	Credits
Select two of the following:		
ENGL 792	Classical Rhetoric	6
ENGL 793	Rhetorical Theory and Practice, Medieval to Modern	

ENGL 794	Modern Rhetorical Theory	
<b>Total Credit Hours</b>		<b>6</b>

**Two Courses (6 Hours)**

Course	Title	Credits
Select two of the following:		
ENGL 795	The Teaching of Business and Technical Writing	6
ENGL 796	Special Topics in the Teaching of English	
ENGL 797	Current Scholarship in Rhetoric and Composition	
<b>Total Credit Hours</b>		<b>6</b>

Note: Courses from speech communication, linguistics, English or American literature, or another composition and rhetoric course may be substituted with the approval of the student's academic advisor.

**Specialization (12 Hours)**

To be approved by the department's Committee on Composition and Rhetoric and the graduate director.

**Written Comprehensive Exam**

A 72-hour take-home exam that consists of responses to two questions in the primary field (rhetoric and composition) and one question in the specialization field. The completed exam should not exceed 11,250 words in length.

**Oral Comprehensive Exam**

This exam may be taken no more than twice.

**Foreign Languages**

Reading proficiency in at least one language other than English, demonstrated in one of the following ways:

1. by passing a reading exam in a language other than English;
2. by passing a graduate-level course in a literature other than English, not in translation, with a grade of B or better;
3. by passing ENGL 701 with a grade of B or better.

Reading proficiency in two languages other than English may be required by the student's doctoral advisory committee if, in its judgment, such proficiency is necessitated by the student's research plans or by professional standards then current in the student's field.

**Teaching Experience**

At least one year's experience teaching English composition at the school or college level.

**Dissertation and Defense**

Dissertation and defense, including 12 hours of ENGL 899, dissertation writing.

**Direct-Admission Doctor of Philosophy in English with an Emphasis in English and American Literature (60 Hours)**

Direct admission to the Ph.D. program may be offered to highly-qualified applicants who are completing or have completed their baccalaureate studies. Each candidate must have a major and minor field. The major field may be chosen from the following: Medieval, Renaissance, Restoration and 18th-century English literature, 19th-century English literature, 20th-century English literature, colonial and 19th-century American literature, 20th century American literature. The following may be used for the minor field only: linguistics, comparative literature, criticism theory, women's studies, history of the book and authorship,



composition and rhetoric, and Southern literature. Students may choose to design an ad hoc minor, subject to approval by the Graduate Program Committee. Examples of ad hoc minors approved in the past include religion and literature, children's and young-adult literature, and computers and literature.

Direct admission by the Department of English for graduate study does not mean immediate admission as a candidate in the English and American literature Ph.D. program. Students are admitted to such candidacy on the basis of their record and a written qualifying exam (satisfied by successful completion of the Master's Comprehensive Examination and the readers' recommendation of candidacy). Students should take this qualifying exam no later than the spring term of their second year in the program. A student is allowed only two attempts to pass the admission-to-candidacy exam.

Requirements include the following:

### Program of Study

By the end of the second year of study students, in consultation with their advisors, will submit a PhD Program of Study form that maps out their intentions for the completion of coursework, and submit it to the Director of Graduate Studies. The Program of Study also serves as a statement of intent; this is the moment at which students may either recommit themselves to completing the PhD, or opt out and finish the MA, securing the degree by passage of the MA Comprehensive Exam and the completion of a thesis.

### Years 1-2

#### 12 Hours

- One Course in English Literature, pre-1660
- One Course in English Literature, post-1660
- One Course in American Literature
- One Additional Course in Exam Field

#### 6 Hours

Course	Title	Credits
ENGL 700	Introduction to Graduate Study of English	3
Select one of the following Critical Theory Courses:		3
ENGL 733	Classics of Western Literary Theory	
ENGL 734	Modern Literary Theory	
An equivalent course		
<b>Total Credit Hours</b>		<b>6</b>

### Years 3-6

#### 18 Hours

- Electives (must include two 800-level seminars)

#### 12 Hours

- Dissertation Preparation

### M.A. Comprehensive Examination

Serves as the Ph.D. Qualifying Examination.

### Comprehensive Exam

A comprehensive exam that consists of two written exams, one in the major field and one in the minor field.

### Oral Comprehensive Exam

**Focusing on the student's major field**, this exam may be taken no more than twice. Successful completion of the written and oral comprehensive exams will signal the conferral of the MA degree.

### Dissertation and Defense Foreign Languages

Reading proficiency in at least one language other than English, demonstrated in one of the following ways:

1. by passing a reading exam in a language other than English;
2. by passing a graduate-level course in a literature other than English, not in translation, with a grade of B or better;
3. by passing ENGL 701 with a grade of B or better.

Reading proficiency in two languages other than English may be required by the student's doctoral advisory committee if, in its judgment, such proficiency is necessitated by the student's research plans or by professional standards then current in the student's field.

## Admission to Candidacy

Admission by the Department of English for graduate study does not mean admission as a candidate in the composition and rhetoric Ph.D. program. Students are admitted to candidacy by The Graduate School on the basis of their academic record, an approved program of study, and successful completion of a written qualifying exam—the M.A. three-hour comprehensive exam in composition and rhetoric. Students should take this exam no later than the semester in which they are taking their 15th hour of course work. A student is allowed only two attempts to pass the exam. Students in the M.A. program who apply to and are accepted into the Ph.D. program may request that their M.A. exams be reread as a Ph.D. qualifying exam. In such a case, the rereading will count as one attempt. M.A. exams will not be read for Ph.D. qualifying purposes unless or until the student has been accepted into the Ph.D. program.

## Film and Media Studies

Department Website ([http://www.sc.edu/study/colleges\\_schools/artsandsciences/film\\_and\\_media\\_studies/our-people/](http://www.sc.edu/study/colleges_schools/artsandsciences/film_and_media_studies/our-people/))

Laura Kissel, *Director*

The Film and Media Studies Program (<http://www.cas.sc.edu/film/>) is an interdisciplinary program in the College of Arts and Sciences devoted to the critical study of moving image culture - its history, theory, and criticism. No graduate degree is offered, but courses are open to graduate students.

## Courses

### FAMS 510 - Topics in Film Media Histories (3 Credits)

Intensive study of a specific topic in U.S. film and media studies. May be repeated as content varies by title.

**Prerequisites:** FAMS 240.

### FAMS 511 - Special Topics in Film and Media Studies (3 Credits)

Intensive study of a specific topic in film and media studies. May be repeated as content varies by title.

**Prerequisites:** FAMS 240.

**Cross-listed course:** ARTH 551, MART 591

### FAMS 566 - Topics in US Film and Media (3 Credits)

Intensive study of a specific topic in U.S. film and media studies. May be repeated as content varies by title.

**Prerequisites:** FAMS 240.

**FAMS 598 - Special Topics in Global Film and Media (3 Credits)**

Intensive study of a specific topic concerning films produced in a country other than the United States. May be repeated as content varies by title.

**Prerequisites:** FAMS 240.

**Cross-listed course:** FORL 598, MART 594

**Graduation with Leadership Distinction:** GLD: Global Learning

**FAMS 710 - Advanced Special Topics in Film and Media (3 Credits)**

Advanced study of a specific topic in film and media studies. May be repeated as content varies by title.

## Geography

Department Website (<http://www.cas.sc.edu/geog/>)

Jerry Mitchell, *Chair*

The Department of Geography offers training in fundamental geographic skills and the opportunity for advanced study and research in a variety of fields within the discipline. Areas of faculty interest and competence include economic, human-environmental, physical, political, , and urban geography; geographic education; geographic information science; global positioning systems; and remote sensing. Programs of study lead to the Ph.D., M.A., and M.S. in geography. The department has a strong record of success in graduate placement in private- and public-sector careers as well as in the academic sphere. To assist in its educational role, the department administers the Center for GIS and Remote Sensing, the Hazards Research Laboratory, the Center for Excellence in Geographic Education, and the climate and decision-making program, the Carolinas Integrated Sciences and Assessments.

## Admissions

For the master's degree programs, the department does not require an applicant to have an undergraduate major in geography; rather, it requires evidence of general intellectual ability and a compelling interest in geography. For the Doctor of Philosophy program, a master's degree in geography is normally required. Applicants for all degree programs must submit a brief statement of career goals and probable field(s) of study; at least two letters of recommendation from individuals who have personal knowledge of the applicant's academic experience and abilities; transcripts of all previous academic work; GRE results; and a Graduate Application Summary form, available from the department. Applicants whose native language is not English are also required to submit a satisfactory score on the TOEFL, the IELTS International Academic Course Type 2 exam, or the PTE Academic English proficiency tests. Information on scores is available through the Graduate School Admissions page ([https://www.sc.edu/study/colleges\\_schools/graduate\\_school/apply/international\\_applicants/](https://www.sc.edu/study/colleges_schools/graduate_school/apply/international_applicants/)). The Graduate School does not require TOEFL scores for students who have completed or working on an undergraduate or graduate-level degree from a U.S. university; however, the department prefers to see scores if they are available. . Students are encouraged to enter the program at the beginning of the fall. Applicants requesting financial aid beginning in the fall semester must submit completed applications by January 15; Spring admissions are considered under exceptional circumstances no later than October 15<sup>th</sup>. Details concerning admission can be obtained from the department's graduate director or electronically by accessing the department's Web page at [https://www.sc.edu/study/colleges\\_schools/artsandsciences/geography/index.php](https://www.sc.edu/study/colleges_schools/artsandsciences/geography/index.php) ([https://www.sc.edu/study/colleges\\_schools/artsandsciences/geography/](https://www.sc.edu/study/colleges_schools/artsandsciences/geography/)) .

## Programs

- Geography, M.A. (p. 61)
- Geography, M.S. (p. 62)
- Geography, Ph.D. (p. 63)

## Courses

**GEOG 510 - Special Topics in Geographic Research (3 Credits)**

Selected topics of special interest in geography. May be repeated as content varies by title.

**GEOG 512 - Migration and Globalization (3 Credits)**

A survey of the political, economic, and social causes and consequences of migration. Topics include immigration policy, border control, settlement patterns, transnationalism, multiculturalism, and integration. Selected contemporary and historical cases.

**Prerequisites:** GEOG 210.

**GEOG 515 - Political Geography (3 Credits)**

Concepts of space and power and their relationship to politics, elections, geopolitics, identities, law, economics, populations, and civil society.

**GEOG 516 - Coastal Zone Management (3 Credits)**

Analysis of the competing demands for limited resources in the coastal zone with emphasis on the role of management in the resolution of conflicts over resource use.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Internships

**GEOG 521 - Landscapes of South Carolina (3 Credits)**

An examination of the factors responsible for creating the contemporary South Carolina cultural landscape.

**GEOG 525 - Geographical Analysis of Transportation (3 Credits)**

Analysis of transportation systems and the application of geographic tools to transportation planning.

**GEOG 530 - Environmental Hazards (3 Credits)**

Human and environmental contributions to the generation and management of hazards originating from extreme natural events to technological failures. Contemporary public policy issues at the national and international level.

**GEOG 531 - Quantitative Methods in Geographic Research (3 Credits)**

A survey of basic quantitative approaches for handling and interpreting geographically related data; univariate and bivariate procedures applicable to a variety of problems.

**GEOG 535 - Hazards Analysis and Planning (3 Credits)**

Examination of the geo-spatial aspects of hazards analysis and planning with specific reference to disaster preparedness, recover, mitigation, and resilience.

**Prerequisites:** GEOG 363 and GEOG 530, or equivalents.

**GEOG 538 - Global Food Politics (3 Credits)**

Political, social, and cultural landscapes of food and farming around the world; issues of agricultural production, trade, consumption, and food security.

**Cross-listed course:** ENVR 538

**GEOG 541 - Advanced Cartography (3 Credits)**

Planning, compiling, constructing, and evaluating thematic maps. Theory and practice in scribing, separation and screening, color proofing, and map reproduction. Discussions of the process of map communication and the ways the cartographer can improve that communication.

**Prerequisites:** GEOG 341.

**GEOG 542 - Dynamic Cartography (3 Credits)**

Theories and principles of interactive and animated cartographic design.

**Prerequisites:** GEOG 341.

**GEOG 544 - Geography of the City (3 Credits)**

The influence of political boundaries, historical forces, settlement patterns, and transportation processes on urban life.

**GEOG 545 - Synoptic Meteorology (4 Credits)**

Analysis of synoptic-scale circulation using weather maps, soundings, cross sections, thermodynamic diagrams, numerical models, and imagery.

**Prerequisites:** GEOG 202 or equivalent.

**GEOG 546 - Applied Climatology (4 Credits)**

Analysis of climate applications in natural and human-modified environments. Content may include water resources, solar energy, urban planning, air quality, agriculture, and tourism. Course work includes lab and field experimentation.

**GEOG 547 - Fluvial Geomorphology (3 Credits)**

Introduction to landforms and processes associated with flowing water at the earth's surface. Hydrology, sedimentology, and theories of channel formation and drainage basin evolution.

**GEOG 549 - Water and Watersheds (3 Credits)**

Spatial variation of hydrology, water quality, and water-related hazards, including runoff generation, soil erosion, sedimentation, and flood hazards. Emphasizes a watershed perspective using geographic data and methods.

**Prerequisites:** GEOG 347, GEOL 371, or ECIV 360.

**GEOG 551 - Principles of Remote Sensing (3 Credits)**

Introduction to remote sensing. A variety of imaging systems including black and white, color, and high altitude color infrared photographs, LANDSAT, thermal infrared, and active microwave. Use of remote sensing for studying the extra-terrestrial environment and earth weather systems.

**GEOG 552 - LiDARgrammetric and Photogrammetric Digital Surface Mapping (3 Credits)**

Introduction to fundamental concepts used to map topographic and planimetric Earth surface features using digital LiDAR (LiDARgrammetric) and digital soft-copy photogrammetry (Photogrammetric).

**Prerequisites:** GEOG 363 or GEOG 341 or GEOG 345 or GEOG 551 or GEOG 563.

**GEOG 554 - Spatial Programming (3 Credits)**

Computer programming of spatial problems; spatial statistical analysis, interactive graphics, and computer maps.

**GEOG 556 - WebGIS (3 Credits)**

Web-based Geographic Information Systems (WebGIS), including concepts and principles of WebGIS, web programming fundamentals, web-based mapping techniques, and developing WebGIS applications.

**Prerequisites:** GEOG 363.

**GEOG 560 - Source Materials for Geographic Instruction (3 Credits)**

Introduction to selected materials available for all levels of instruction in geography. Emphasis on the substantive nature of the materials.

**Cross-listed course:** EDSE 505

**GEOG 561 - Contemporary Issues in Geography Education (3 Credits)**

Key concepts of geography and current approaches to teaching geography with specific attention to classroom materials, curriculum reform, cross-curricular integration, learning theory, and the use of geospatial/instructional technology.

**GEOG 562 - Satellite Mapping and the Global Positioning System (3 Credits)**

Technology and use of Global Positioning Systems (GPS). GPS space segment, receiver technologies, range observables, and positioning accuracy. Applications to large/medium scale mapping, remote sensing, and aerial photography.

**Prerequisites:** GEOG 345 or GEOG 363 or GEOG 551.

**GEOG 563 - Advanced Geographic Information Systems (3 Credits)**

Theory and application of geographic information systems including discussions of automated input, storage, analysis, integration, and display of spatial data. Use of an operational geographic information system.

**GEOG 564 - GIS-Based Modeling (3 Credits)**

Geographical information systems for modeling physical/human processes in space and time using raster and vector data. Cartographic modeling concepts, embedded models, and GIS-model coupling.

**GEOG 565 - Geographic Information System (GIS) Databases and Their Use (3 Credits)**

Representation, construction, maintenance, and analysis of spatial data in a geographic information system (GIS) database.

**Prerequisites:** GEOG 363 or GEOG 341 or GEOG 551 or GEOG 563.

**GEOG 566 - Social Aspects of Environmental Planning and Management (3 Credits)**

Geographical approach to environmental problems.

**Prerequisites:** GEOG 343.

**GEOG 567 - Long-Term Environmental Change (3 Credits)**

Climatic changes of the past and their impact on the physical landscape, with an emphasis on the Quaternary period.

**Prerequisites:** A 200-level course in physical geography or geology or equivalent.

**Cross-listed course:** GEOL 567

**GEOG 568 - Human Dimensions of Global Environmental Change (3 Credits)**

Consequences of increasing anthropogenic changes on environmental systems including the sources of change, regional impacts, and social and policy responses.

**Prerequisites:** GEOG 343.

**GEOG 569 - International Development and the Environment (3 Credits)**

Intersections of international development and environmental change; study of general theoretical perspectives balanced with case studies from the Global South.

**Cross-listed course:** ANTH 569

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy, GLD: Global Learning

**GEOG 570 - Geography of Public Land and Water Policy (3 Credits)**

Geography of public land, water, and related public trust resources (wildlife, timber, minerals, fuels, recreation, wetlands, coastal zones, wilderness); historical geography of policy; spatial aspects of current research and management.

**GEOG 571 - Microclimatology (4 Credits)**

Field techniques and processes in the atmospheric boundary layer including radiation, soil heat fluxes, turbulence, momentum, latent and sensible heat fluxes, moisture, and evaporation.

**Prerequisites:** GEOG 202.

**GEOG 573 - Climatic Change and Variability (3 Credits)**

Observations and theories of climatic change and variability as they occur at different space and time scales. Projections of future climates. Techniques used in climatic change research and impact analysis.

**Prerequisites:** GEOG 202 or equivalent.

**GEOG 575 - Digital Techniques and Applications in Remote Sensing (3 Credits)**

Introduction to digital image processing techniques and applications. Image correction, enhancement, spatial and spectral transformation. Land use/land cover classification, and change detection.

**Prerequisites:** GEOG 551 or equivalent.

**GEOG 581 - Globalization and Cultural Questions (3 Credits)**

This course examines cultural understandings of and responses to globalization, examining topics such as its history and theories, migration, economic integration and inequality, identity, social movements, and the environment.

**Cross-listed course:** ANTH 581

**Graduation with Leadership Distinction:** GLD: Global Learning

**GEOG 590 - Beach-Dune Interactions (3 Credits)**

Influence of wind on coastal systems, with emphasis on nearshore currents, sediment transport and bedforms, aeolian transport, and dunes. Minimum Junior standing required.

**Cross-listed course:** MSCI 590

**GEOG 595 - Internship in Geography (1-6 Credits)**

Internship in government agencies, private-sector businesses, and non-profit organizations under the joint supervision of sponsor and departmental. A maximum of three credits may be applied to undergraduate Geography major or to Geography master's degree. May be repeated to a maximum of six credits.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Internships

**Experiential Learning:** Experiential Learning Opportunity

**GEOG 701 - History of Geographic Thought (3 Credits)**

A survey of the development of geographic philosophy and an analysis of geographic methodology.

**GEOG 705 - Directed Individual Studies in Geography (1-3 Credits)**

Directed research topics individually assigned and supervised by graduate faculty. May be repeated for credit.

**GEOG 706 - Selected Topics in Cartography and Remote Sensing (1-3 Credits)**

Special topics are offered in the form of short courses, seminars, and workshops. Students may take these offerings, by permission of the instructor, for variable credit. The course may be taken more than once.

**GEOG 709 - Women Explorers and Travelers (3 Credits)**

Examines in geographical and historical contexts the activities of various women travelers and explorers.

**Cross-listed course:** WGST 709

**GEOG 710 - Seminar in Geography Education (3 Credits)**

Review of recent literature on geography education with an emphasis on the national geography standards, spatial thinking and the use of geospatial technology in pedagogic contexts.

**GEOG 711 - Seminar in Regional Geography (3 Credits)**

An analysis of the total geographic complex of selected major world regions.

**GEOG 712 - Urban Geography (3 Credits)**

An investigation into the concepts of the urban field and the urban region.

**GEOG 713 - Advanced Economic Geography (3 Credits)**

Investigation into the locational aspects and the spatial systems of selected economic activities, from both regional and systematic viewpoints.

**GEOG 720 - World Regional Geography for Teachers (3 Credits)**

The physical and human geography of major world regions with emphasis on basic principles of regional geography. Cannot be used in M.A., M.S., or Ph.D. programs in geography.

**GEOG 721 - Seminar in Systematic Geography (3 Credits)**

Studies of the characteristics, processes, and distributions over the world of the different cultural and physical environmental elements, such as economic, political, or social activities, climate and landforms.

**GEOG 730 - Seminar in Environmental Geography (3 Credits)**

Review of recent geographic literature on nature-society interactions with an emphasis on identifying research themes and methodologies employed by contemporary geographers.

**Prerequisites:** GEOG 530 or GEOG 568.

**GEOG 731 - Seminar in Quantitative Analysis in Geography (3 Credits)**

Advanced quantitative approaches for handling and interpreting geographically related data. Multivariate procedures applicable to a variety of problems will be presented. For each topic the students will analyze data relating to their individual interests.

**Prerequisites:** GEOG 531 or equivalent.

**GEOG 734 - Field Seminar in Third World Development Projects (6 Credits)**

The student works in a developing country for two to four months on projects designed by instructor and funded by the host country.

**GEOG 735 - Seminar in Political Geography (3 Credits)****GEOG 737 - Seminar in Spatial Cognition (3 Credits)**

Selected topics in spatial cognition.

**GEOG 740 - Research Trends in Geography (1 Credit)**

Seminar on research trends and writing research proposals in geography.

**GEOG 741 - Seminar in Cartography (3 Credits)**

A seminar to familiarize students with current experimental techniques, literature, and research topics in cartography.

**GEOG 746 - Seminar in Climatology (3 Credits)**

Major theories, measures of climatic change and variability, climate models, statistical analysis, and climate impacts.

**GEOG 747 - Seminar in Physical Geography (3 Credits)**

Investigation of physical systems and processes at the earth's surface. Topics vary; landforms, hydrology, pedology, biogeography, quaternary science, human impacts on physical systems.

**GEOG 751 - Digital Techniques of Remote Sensing (3 Credits)**

Introduction to the fundamental principles and methods of digital image processing of remotely sensed data. Algorithms are discussed for preprocessing, enhancement, and classification mapping of digital data for agricultural, urban, geological, and environmental problems.

**Prerequisites:** GEOG 551 and course in computer programming.

**GEOG 755 - Remote Sensing Modeling and Analysis (3 Credits)**

Satellite-based information extraction; programming skills for digital image processing; self-developed modeling approaches; quantitative analysis of remote sensing data.

**Prerequisites:** GEOG 575 or equivalent.

**GEOG 763 - Seminar in Geographic Information Systems (3 Credits)**

Theory and application of modern automated approaches to handling geographic data. Includes computer oriented procedures for the input, analysis and display of spatial data. Areas covered range from census address matching to statewide natural resource systems.

**Prerequisites:** GEOG 563.

**GEOG 789 - Area Analysis: Europe, the Latin American Republics, Asia, or the United States (3-6 Credits)**

To provide the student with a substantial understanding and familiarity with the region of specialization; a multidisciplinary approach with an emphasis on geographic, political, and economic issues most significant for each region. Offered for the International Master of Business Administration program.

**GEOG 799 - Thesis Preparation (1-9 Credits)****GEOG 801 - Historical and Contemporary Geographic Thought (3 Credits)**

A survey of (1) the philosophical and intellectual foundations of Geography as a discipline, and (2) contemporary ideas and debates in major subfields of geographic research.

**GEOG 805 - Advanced Directed Individual Studies in Geography (1-3 Credits)**

Advanced directed research by a PhD student on geographical topics to be individually supervised by graduate faculty. This course may be taken for 1-3 credit hours of independent study by a student working closely with a faculty member on a specific research project to be defined and agreed upon between the student and a supervising faculty member.

**GEOG 810 - Advanced Seminar in Human Geography (3 Credits)**

Reading intensive seminar focused on conceptual frontiers and methodological debates in contemporary human geography with a secondary emphasis on intradisciplinary and cross-disciplinary affinities.

**Prerequisites:** any 700-level GEOG seminar course.

**GEOG 811 - Advanced Seminar in Regional Geography (3 Credits)**

Advanced reading and discussion of the physical, economic, social and/or cultural geography of major selected world regions.

**GEOG 830 - Advanced Seminar in Environmental Geography (3 Credits)**

A research seminar where students critically evaluate relevant literature, develop a research proposal, and complete a related research project in environmental geography.

**Prerequisites:** GEOG 730.

**GEOG 841 - Advanced Seminar in Cartography (3 Credits)**

A topic central to cartography will be studied. Students will critically evaluate pertinent literature, develop a research proposal, and complete a related research project.

**GEOG 847 - Advanced Seminar in Physical Geography (3 Credits)**

Research and discussion on various topics in physical geography. Literature varies with seminar topic but will include prevailing theories, data types, and modeling strategies in climatology, meteorology, hydrology, biogeography, soils, or geomorphology.

**Prerequisites:** GEOG 547 or GEOG 746.

**GEOG 851 - Advanced Seminar in Remote Sensing (3 Credits)**

Advanced reading and discussion in the following areas - 1) the theoretical bases of remote sensing; 2) remote sensing of biophysical variables such as plant and soil temperatures and moisture content; 3) advanced principles of optical and digital image processing; and 4) economic aspects of remote sensing of the environment.

**GEOG 863 - Advanced Seminar in Geographic Information Systems (3 Credits)**

A research seminar in which students conduct a detailed analysis of specific aspects of geographical data handling. This will include the design, implementation, and management of an operational geographical information system.

**GEOG 899 - Dissertation Preparation (1-12 Credits)**

## Geography, M.A.

### Learning Outcomes

- Students will demonstrate fluency in key concepts and debates in different subfields of the discipline, including physical/environmental geography, human geography, and geographical techniques.
- Students will formulate and execute an original research project in the form of a master's thesis.
- Master's students must complete at least one GIScience or quantitative methods course in the Geography Department as part of breadth requirements. Advisors may require students to take additional methods courses in Geography or other departments depending on the intended area of research. All courses that appear on the Program of Study must be passed with a grade of B or higher.
- In order to demonstrate their preparedness for professional careers or doctoral study, students should participate in at least 2 professional development activities prior to graduation, including (but not limited to) presentation of a paper at a conference, attendance at teacher-training events and/or career workshops, community, departmental, or university volunteer service, submission of an application for research funding or academic fellowship, submission of a paper for publication, submission of a report to an agency or organization, completion of an internship or other work experience completion of language or other skill training.

### Degree Requirements

Students who enter the M.A. program are expected to complete a majority of their coursework credit hours in human geography and/or environment-society courses. Master's students must have an approved Master's Program of Study (M-POS) form within 12 months of initial enrollment. All courses appearing on the M-POS must have a grade of B or better.

There are two options for this degree:

1. Thesis Option (30 Hours)
2. Non-Thesis Option (36 Hours)

### Thesis Option (30 Hours)

#### Coursework

Course	Title	Credits
GEOG 801	Historical and Contemporary Geographic Thought	3
Select a graduate-level (500-level or above) techniques or methods course with GEOG designator selected with advisor approval		3
Select 24 additional credit hours <sup>1</sup>		24
<b>Total Credit Hours</b>		<b>30</b>

- <sup>1</sup>
- Half the coursework (not including GEOG 799) listed on the M-POS must be at the 700- or 800-level.
  - No more than six (6) credit hours of independent study with any designator may be included on the M-POS.
  - A minimum of one (1) and maximum of six (6) credit hours of GEOG 799 must be included on the M-POS. Students cannot enroll in GEOG 799 until they have an approved thesis proposal.
  - A maximum of six (6) credit hours with non-GEOG designators may be included on the M-POS.

## Thesis

Students will publicly defend their proposal prior to the completion of the third regular semester. During preparation of the thesis, any student who wishes to use University facilities or to confer with faculty must be enrolled in GEOG 799. Students will publicly defend their thesis research.

## Non-Thesis Option (36 Hours)

Students must declare their intention to pursue the non-thesis option no later than the end of the student's third regular semester. Students choosing this option should have an advisor and a second reader for the research paper. The advisor and second reader must be faculty within the Geography Department. Either may be a regular, associate, or term graduate faculty member.

### Coursework

Course	Title	Credits
GEOG 801	Historical and Contemporary Geographic Thought	3
Select a graduate-level (500-level or above) techniques or methods course with GEOG designator selected with advisor approval		3
Select 30 additional credit hours <sup>1</sup>		30
<b>Total Credit Hours</b>		<b>36</b>

- <sup>1</sup>
- Half the coursework listed on the M-POS must be at the 700- or 800-level. GEOG 799 does not count towards this requirement.
  - No more than six (6) credit hours of independent study with any designator may be included on the M-POS.
  - A maximum of six (6) credit hours with non-GEOG designators may be included on the M-POS.

## Research Paper

An extended research paper is written under the guidance the student's advisor. The completed paper will be submitted a minimum of six weeks prior to the Graduate School's "Final Submission Deadline" to the student's advisor and a second reader. Prior to the Graduate School's "Final Submission Deadline," the student must orally present their research paper to their advisor and second reader. The advisor and second reader will evaluate the research paper as "Pass," "Conditional Pass," or "Fail." The student will have two weeks to complete remediation if a "Conditional Pass" or "Fail" is given. The remediated work will be evaluated as "Pass" or "Fail" within two weeks. Students only have one opportunity to remediate. The committee must assign a "Pass" to the paper for the student to pass the comprehensive assessment.

## Geography, M.S.

### Learning Outcomes

- Students will demonstrate fluency in key concepts and debates in different subfields of the discipline, including physical/environmental geography, human geography, and geographical techniques.

- Students will formulate and execute an original research project in the form of a master's thesis.
- Master's students must complete at least one GIScience or quantitative methods course in the Geography Department as part of breadth requirements. Advisors may require students to take additional methods courses in Geography or other departments depending on the intended area of research. All courses that appear on the Program of Study must be passed with a grade of B or higher.
- In order to demonstrate their preparedness for professional careers or doctoral study, students should participate in at least 2 professional development activities prior to graduation, including (but not limited to) presentation of a paper at a conference, attendance at teacher-training events and/or career workshops, community, departmental, or university volunteer service, submission of an application for research funding or academic fellowship, submission of a paper for publication, submission of a report to an agency or organization, completion of an internship or other work experience completion of language or other skill training.

## Degree Requirements

Students who enter the M.S. program are expected to complete a majority of their coursework credit hours in physical geography/ environmental science and/or GIScience courses. Masters students must have an approved Masters Program of Study (M-POS) form within 12 months of initial enrollment. All courses appearing on the M-POS must have a grade of B or better.

There are two options for this degree:

- Thesis Option (30 Hours)
- Non-Thesis Option (36 Hours)

## Thesis Option (36 Hours) Coursework

Course	Title	Credits
GEOG 801	Historical and Contemporary Geographic Thought	3
Select a graduate-level (500-level or above) techniques or methods course with GEOG designator selected with advisor approval		3
Select 24 additional credit hours <sup>1</sup>		24
<b>Total Credit Hours</b>		<b>30</b>

- <sup>1</sup>
- Half the coursework (not including GEOG 799) listed on the M-POS must be at the 700- or 800-level.
  - No more than six (6) credit hours of independent study with any designator may be included on the M-POS.
  - A minimum of one (1) and maximum of six (6) credit hours of GEOG 799 must be included on the M-POS. Students cannot enroll in GEOG 799 until they have an approved thesis proposal.
  - A maximum of six (6) credit hours with non-GEOG designators may be included on the M-POS.

## Thesis

- Students will publicly defend their proposal prior to the completion of the third regular semester. During preparation of the thesis, any student who wishes to use University facilities or to confer with faculty must be enrolled in GEOG 799. Students will publicly defend their thesis research.

## Non-Thesis Option (36 Hours)

Students must declare their intention to pursue the non-thesis option no later than the end of the student's third regular semester. Students choosing this option should have an advisor and a second reader for the research paper. The advisor and second reader must be faculty within the Geography Department. Either may be a regular, associate, or term graduate faculty member.

### Coursework

Course	Title	Credits
GEOG 801	Historical and Contemporary Geographic Thought	3
Select a graduate-level (500-level or above) techniques or methods course with GEOG designator selected with advisor approval		3
Select 30 additional credit hours <sup>1</sup>		30
<b>Total Credit Hours</b>		<b>36</b>

- <sup>1</sup>
- Half the coursework listed on the M-POS must be at the 700- or 800-level. GEOG 799 does not count towards this requirement.
  - No more than six (6) credit hours of independent study with any designator may be included on the M-POS.
  - A maximum of six (6) credit hours with non-GEOG designators may be included on the M-POS.

### Research Paper

- An extended research paper is written under the guidance of the student's advisor. The completed paper will be submitted a minimum of six weeks prior to the Graduate School's "Final Submission Deadline" to the student's advisor and a second reader. Prior to the Graduate School's "Final Submission Deadline," the student must orally present their research paper to their advisor and second reader. The advisor and second reader will evaluate the research paper as "Pass," "Conditional Pass," or "Fail." The student will have two weeks to complete remediation if a "Conditional Pass" or "Fail" is given. The remediated work will be evaluated as "Pass" or "Fail" within two weeks. Students only have one opportunity to remediate. The committee must assign a "Pass" to the paper for the student to pass the comprehensive assessment.

## Geography, Ph.D.

### Learning Outcomes

- Students will demonstrate the ability to think critically and reason scientifically about geographical concepts.
- Students will produce significant contributions to geographical scholarship through research, publication, and dissemination activities.
- Students will be prepared for careers in the field.
- Students will develop competence as instructors.

### Degree Requirements (33 Post-Masters Hours)

The doctoral degree requires a minimum of 33 post-master's degree credit hours comprising a minimum of 21 credit hours of coursework plus a minimum of 12 credit hours of dissertation preparation (GEOG 899).

Doctoral students must file a completed D-POS within the first 24 months of full-time enrollment. The specific course requirements include:

1. GEOG 801 (3 credit hours).
2. A techniques or methods course at the 700-level or above that is appropriate to the student's specialization and selected with advisor approval (3 credit hours). Courses taken at the Master's level cannot be applied toward this requirement.
3. A graduate-level statistics course (3 credit hours). If an equivalent course was taken at the master's level, this requirement will be waived, but the credit hours will not count toward the doctoral degree.
4. Twelve (12) credit hours of Dissertation Preparation (GEOG 899). Students cannot enroll in GEOG 899 until they have an approved dissertation proposal.

### Coursework

Course	Title	Credits
GEOG 801	Historical and Contemporary Geographic Thought	3
Select an advanced techniques or methods course, taken at the 700-level or above, appropriate to the student's specialization and dissertation topic and selected with advisor approval		3
Select a graduate-level statistics course (3 credit hours). If an equivalent course was taken at the master's level, this requirement will be waived, but the credit hours will not count toward the doctoral degree.		3
Select additional courses including at least one course outside of Geography		12
<b>Total Credit Hours</b>		<b>21</b>

The following stipulations apply to doctoral coursework:

1. Half the coursework (not including GEOG 899) listed on the D-POS must be at the 700- or 800-level.
2. No more than 3 credit hours of independent study (e.g., GEOG 705, 706, 805) with any designator may be included on the D-POS.
3. A maximum of 6 credit hours with non-GEOG designators (or 9 credit hours if students take techniques/methods or graduate-level statistics outside of Geography) may appear on the D-POS.
4. During preparation of the dissertation, any student who wishes to use University facilities or to confer with faculty must be enrolled in at least one credit hour of GEOG 899

### Admission to Candidacy

Doctoral students must complete the following to be admitted into candidacy:

1. Full admission into the doctoral program;
2. Approval of D-POS; and
3. The successful completion of the following course requirements (see above) with a grade of B or better: GEOG 801; the techniques or methods course at the 700-level or above; and the graduate-level statistics course (3 credit hours).

### Comprehensive Examination

The comprehensive examination consists of the dissertation proposal, the oral defense of the

proposal, and a written exam. The proposal defense and the written exam must take place within one regular semester (or the equivalent)

of each other. The comprehensive examination may not be given fewer than 60 days before the student receives the degree. Certification of the comprehensive examination for doctoral students remains valid for five years, after which it must be revalidated. Revalidation is not guaranteed.

The comprehensive examination committee must include no fewer than four members and must include one (but no more than one) member from outside USC Geography. Regular and research faculty who have been appointed to associate membership to the USC Graduate Faculty may also serve on or chair a doctoral committee. Faculty members with term appointments may serve on, but may not chair, doctoral committees.

## Dissertation Proposal and Oral Defense

The dissertation proposal must be of a quality commensurate with proposal submitted to a nationally-recognized funding source. Committee members must be given a minimum of two weeks to review the proposal. The oral defense of the proposal, which is open to the public, should be announced at least one week in advance. A copy of the proposal should be placed in the departmental office at this time. The student will have up to one month after the oral proposal defense to complete remediation. Students have only one opportunity to complete the remediation.

## Written Exam

The written exam occurs after coursework is completed or during the final semester of coursework; it can occur before or after the oral proposal defense. Students and individual committee members should agree on concepts and/or reading lists no fewer than 90 days prior to the start of the exam. Each committee member is responsible for evaluating written exam responses corresponding with his/her area of expertise within two weeks of the student's completion of the written exam. Each committee member will assign a grade of Pass, Conditional Pass, or Fail. A Conditional Pass or Fail indicates that a student must undertake remedial work on the exam response. The committee may allow a maximum of one month for the student to complete any remediation. Committee members will have a maximum of two weeks to evaluate the remediated work as Pass or Fail. Students have one opportunity to complete remedial work and must pass every section of the written comprehensive exam in order to pass the exam as a whole.

## Dissertation Committee

The dissertation committee must include no fewer than four members and must include one (but no more than one) member from outside USC Geography. Regular and research faculty who have been appointed to associate membership of the USC Graduate Faculty may also serve on or chair a doctoral committee. Faculty members with term appointments may serve on, but may not chair, doctoral committees. The dissertation committee may or may not have the same members as the comprehensive examination committee.

### Format

Dissertations may be traditional or manuscript style. Manuscript style dissertations must consist at least three manuscripts prepared for, but not necessarily accepted for, publication. The student must be senior author on all three manuscripts. All dissertations must follow the formatting guidelines defined by the Graduate School.

### Defense

The student will submit a complete draft of the dissertation to the committee at least two weeks prior to the defense. The dissertation must be placed in the department office at least one week prior to the defense. The defense will be open to the public and typically involves a short (~30 minute) public talk with questions and answers, followed by a closed

session with the dissertation committee. The dissertation defense should be no fewer than 30 days before graduation date. The committee may allow one month for a student to complete any required remediation. Students have only one opportunity to complete the remediation.

### Teaching Experience

All students must have at least one semester's worth of experience as an instructor of record or as a laboratory instructor.

### Full-Length Research Presentation

All students shall present a 35-45 minute public research presentation. This is a separate requirement (and presentation topic) from the dissertation defense.

## Academic Progress

### Probation

Students must demonstrate satisfactory academic progress at the end of each semester. Students who receive a grade lower than a "B" in a graduate course or who do not demonstrate satisfactory academic progress will be placed on academic probation for one academic semester. Students on probation may lose their funding.

### Termination

Causes for termination may include, but are not limited to, the following:

1. Failure to complete all requirements from the previous degree by the end of the first semester.
2. Failure to have an academic advisor at all times.
3. Receiving two grades lower than a "B" in graduate courses.
4. Academic dishonesty.
5. Failure of the written comprehensive exam.
6. Failure to have an approved dissertation proposal by the end of the fifth regular semester for full-time students.
7. Failure to produce a defensible dissertation.

## History

Department Website ([https://www.sc.edu/study/colleges\\_schools/artsandsciences/history/](https://www.sc.edu/study/colleges_schools/artsandsciences/history/))

Jessica Elfenbein, *Chair*

The Department of History at the University of South Carolina strives to achieve the highest standards of excellence in both conventional and applied history fields. A traditionally excellent Southern history department is complemented by a strong faculty that provides graduates and undergraduates a wide variety of American, European, Atlantic World, Latin American, and non-Western fields and periods from ancient to modern, and themes from Science, Technology, and the Environment to Culture, Identity, and Economic Development (see the Department's website for the most current listing of geographic and thematic fields). The public history program is among the best in the nation and prepares graduate students for the museum and historic preservation job markets.

## Degree Programs

Degrees offered include the M.A. in History, M.A. in Public History, and the Ph.D. in History. In addition, a joint master's program in library and information science and public history is offered. For more information visit: Public History / Library and Information Science, M.A. / M.L.I.S. (p. 473) The Department of History also oversees the Certificate of Graduate Study in Museum Management. Many Ph.D. students opt to



take an M.A. in History or M.A. in Public History as they progress toward the Ph.D.

No more than 12 hours of courses in either the M.A. or Ph.D. programs may be taken at the 500-600 level. All other courses shall be at the 700 or 800 level. Courses taken at the 800 level may be repeated but only with permission of the Committee on Graduate Studies. Thesis or dissertation research and writing courses (799 and 899) may be taken as many times as deemed necessary by the student's advisor and with the approval of the Committee on Graduate Studies.

## Admissions

The history department admits students once a year, in April, although accepted students ordinarily begin work in the fall, with approval from the graduate committee, they may defer enrollment for up to one year. Completed applications shall be received by The Graduate School no later than January 7 of the year they are to be considered.

For the 2012-2013 academic year, there were 180 applicants for our graduate programs; 17 enrolled (ten in the Ph.D. program and seven in the M.A. in Public History program). This class has an average GRE score of 1345 (old scoring scale) or 312 (new scoring scale) on two of the three components of the exam and an average undergraduate GPA of 3.65.

Incoming Ph.D. students who hold a master's degree from another university must complete all of our Ph.D. requirements or demonstrate that they have completed similar course work. The Graduate Committee normally takes previous graduate work in history into account, which may speed the student's progress toward the doctorate.

## Programs

- History, M.A. (p. 68)
- History, Ph.D. (p. 68)
- Museum Management, Certificate (p. 69)
- Public History, M.A. (p. 70)

## Courses

### HIST 562 - The Middle East and the United States: 1800 to the Present (3 Credits)

Political, cultural, and economic ties which have linked the Middle East to the United States. Middle Eastern views of these relationships and their impact on modern Middle Eastern history.

**Graduation with Leadership Distinction:** GLD: Global Learning

### HIST 599 - Topics in History (3 Credits)

Reading and research on selected historical topics. Course content varies and will be announced in the schedule of classes by title.

### HIST 640 - South Carolina History (3 Credits)

South Carolina since colonization.

### HIST 641 - The American South Comes of Age (3 Credits)

Changes in the Southern region since 1940.

### HIST 692 - Historic Preservation Field Experience--Charleston, S.C. (3 Credits)

On-site introduction to historic preservation including research, interpretation, management, and economics of preservation. Offered only in Charleston during summer term.

### HIST 700 - Topics in History (3 Credits)

Reading and research in selected historical subjects.

### HIST 701 - Reading Seminar in Colonial American History (3 Credits)

### HIST 702 - Reading Seminar in American History, 1789-1876 (3 Credits)

### HIST 703 - Reading Seminar in American History since 1876 (3 Credits)

### HIST 704 - Reading Seminar in Ancient History (3 Credits)

### HIST 705 - Reading Seminar in Medieval History (3 Credits)

### HIST 706 - Reading Seminar in Early Modern European History (3 Credits)

### HIST 707A - Reading Seminar in Modern European History, 1789-1900 (3 Credits)

Restricted to graduate students in history.

### HIST 707B - Reading Seminar in European History, 1900-Present (3 Credits)

Restricted to graduate students in history.

### HIST 708 - Reading Seminar in Russian and East European History (3 Credits)

### HIST 709 - Reading Seminar in British History, 1500-1815 (3 Credits)

### HIST 710 - Reading Seminar in British History since 1815 (3 Credits)

### HIST 712 - Reading Seminar in Special Fields (3 Credits)

### HIST 713 - The Age of the Antonines (3 Credits)

A consideration of the political, social, economic, and intellectual developments in the Roman world of the second century A.D.

### HIST 715 - The Crusades (3 Credits)

Holy war and realpolitik in Mediterranean; East and West relations from the 10th through the 15th centuries.

### HIST 716 - Normandy, France, and England, 911-1453 (3 Credits)

The development of the French and English monarchies from the establishment of Normandy to the end of the Hundred Years' War.

### HIST 720 - Introduction to the Study of History (3 Credits)

Introduction to the field for students who intend to become professional historians. Covers debates concerning the writing of history with a focus on recent theoretical and methodological issues. Restricted to M.A. and Ph.D. students in history.

### HIST 721 - England Under the Tudors and Stuarts (3 Credits)

A detailed study of the history of England, 1485-1714.

### HIST 722 - England Under the Tudors and Stuarts (3 Credits)

A detailed study of the history of England, 1485-1714.

### HIST 725 - Modern British History (3 Credits)

A reading course in the literature of British history since 1815.

### HIST 726 - Modern British History (3 Credits)

A reading course in the literature of British history since 1815.

### HIST 727 - European Intellectual History, 1815-1900 (3 Credits)

A reading course in art history, literature, and changing social thought in the 19th century.

### HIST 728 - European Intellectual History, 1900-1960 (3 Credits)

A reading course in art, architecture, the cinema, literature, and social thought in the 20th century.

### HIST 729 - France since 1815 (3 Credits)

Readings in the political, social, economic, and cultural history of modern France.

### HIST 730 - Russia from Peter the Great to Nicholas I (3 Credits)

The history of Russia from 1675-1855.

**HIST 731 - Russia, 1855-1930 (3 Credits)**

A reading course dealing with specific problems of modern Russian history.

**HIST 732 - European Diplomatic History, 1870-1914 (3 Credits)****HIST 733 - Contemporary Europe (3 Credits)****HIST 734 - Empire and Nation in Modern Europe (3 Credits)**

Comparative study of the concepts and dynamics of empire and nation in 19th- and 20th-century Europe.

**HIST 735 - State and Society in Eastern Europe (3 Credits)**

Selected topics in the development of the area in the 19th and 20th centuries.

**HIST 739 - Readings in Pre-Modern Chinese History (3 Credits)**

Selected topics in the history of China from the founding of the Han Dynasty in 202 B.C. to the end of the Ming Dynasty in A.D. 1644.

**HIST 740 - China and the West, 1840-1949 (3 Credits)**

A reading course on political, intellectual, and social changes in China resulting from the increased contacts with the West.

**HIST 741 - Readings in the Social History of Sport (3 Credits)**

A reading and discussion of the analytical and critical literature on sport history.

**Cross-listed course:** PEDU 741

**HIST 744 - French Revolution and Napoleonic Era (3 Credits)**

Reading course in the historical literature of the revolutionary era, including the 18th-century background.

**HIST 745 - Readings in Modern Japanese History (3 Credits)**

Topics include the Meiji Restoration, industrialization, nationhood and nationalism, World War II, and postwar changes.

**HIST 748 - The Middle East and North Africa, 1798-1962 (3 Credits)**

A reading course emphasizing political, intellectual, social, and religious movements in the Ottoman Empire and its successor states. Special attention to the growth of contacts between the Middle East and the West.

**HIST 752 - Readings in American Colonial History (3 Credits)****HIST 753 - The Coming of the Civil War, 1815-1860 (3 Credits)**

A study of the various factors which produced a breakdown of the democratic process in the United States and produced a domestic war.

**HIST 754 - Rise of Industrialism (3 Credits)****HIST 755 - Contemporary United States (3 Credits)****HIST 756 - United States History, 1800-1850 (3 Credits)****HIST 757 - African American Women in Nineteenth and Twentieth Centuries (3 Credits)**

This course will acquaint students with some of the secondary literature in African American women's history from the late nineteenth century through the twentieth century. The course examines the impact of race, gender, and class on the lives of black women and explores the historical relationship between African American women, work, family, community, and politics.

**Cross-listed course:** WGST 757

**HIST 758 - Capital City Field School: Theory and Practice of Historic Preservation (3 Credits)**

Introduction to theory and practice of historic preservation, taught in Columbia through on-campus classes, off-campus meetings with working professionals, and site visits around the Midlands.

**HIST 761 - Southern Intellectual and Cultural History (3 Credits)**

A study of the Southern mind together with an investigation of such other aspects of Southern civilization as are clearly related to the mental life of the region.

**HIST 762 - The New South (3 Credits)**

A survey of the economic, social, and political development of the Southern region since 1876.

**HIST 763 - Victorian America (3 Credits)**

Readings in the social and political history of the United States in the period from Reconstruction to the First World War.

**HIST 764 - History of American Women (3 Credits)**

Selected research topics on the cultural, social, economic, and political roles and contributions of American women.

**Cross-listed course:** WGST 764

**HIST 765 - Readings in American Diplomatic History, 1776-1914 (3 Credits)****HIST 766 - Readings in American Diplomatic History, 1914-present (3 Credits)****HIST 770 - Latin American History (3 Credits)**

Readings in selected topics in Latin American history.

**HIST 772 - Exploring Ethnohistory (3 Credits)**

Cross-cultural study of history. Includes theoretical perspectives and cases from the Americas, Europe, Africa, and Asia.

**Cross-listed course:** ANTH 773

**HIST 773 - History of Mexico (3 Credits)**

Readings in the political, economic and social history of Mexico.

**HIST 774 - Atlantic World History, 15th to 19th Century (3 Credits)**

Analysis of the methodological, conceptual, and historiographical debates dealing with the social, political, and cultural process that linked the continents bordering the Atlantic Ocean from the 15th to the 19th century.

**HIST 775 - Comparative History of Slavery in the Americas from the 15th to the 19th Century (3 Credits)**

Comparative approaches to the methodological, conceptual, and historiographical debates of slavery and the African Diaspora in the Americas, 15th to the 19th century.

**HIST 776 - History of Brazil (3 Credits)**

Readings in the political, economic and social history of Brazil.

**HIST 780 - Readings in Modern Military Thought (3 Credits)**

Major military thought from the French Revolution to the present.

**HIST 781 - History and Theory of Museums (3 Credits)**

Museums as central places for the creation, presentation, and representation of human knowledge and enhancement of civic ritual in modern states. U.S. museums considered in international context.

**HIST 782 - Business History (3 Credits)**

Readings in the modern history of business in Europe and America.

**HIST 783 - History and Theory (3 Credits)**

Examination of theory and case studies highlighting current themes in cultural history. Topics may include memory, ethnicity and race, gender and sexuality, popular culture, and truth and objectivity.

**HIST 784 - Modern British Material Culture (3 Credits)**

Use of material culture by historians of modern Britain including the country house, food and drink, slums and suburbs, the seaside resort, and the public school.

**HIST 785 - Comparative History of Time (3 Credits)**

Historical study of time-consciousness; how different modes of production have stimulated different forms of time-consciousness in American and other cultures.

**HIST 786 - Comparative Applied History, U.S. and U.K. (3 Credits)**

Summer field school in the U.K. to provide comparisons with U.S. theory and practice in archives administration, museum management, and historic preservation.

**HIST 787 - Material Culture Studies (3 Credits)**

Seminar in historical study of material culture; principal disciplinary and theoretical perspectives; emphasis on material culture of North America.

**Cross-listed course:** ANTH 787

**HIST 788 - Memory, History, and Space (3 Credits)**

A seminar in the historical study of buildings, the built environment, and cultural landscape.

**HIST 789 - Historic Site Interpretation (3 Credits)**

An examination of the issues and problems in the interpretation of historic house museums and historic sites, with special emphasis on the development of an interpretive exhibit related to state and local history. Field trips.

**HIST 790 - Archival Administration and Techniques (3 Credits)**

The nature, value, and use of public and private archives; the principles and techniques for preservation, arrangement, description, and reference service for archives, personal papers, and historical manuscripts.

**HIST 791 - Historical Editing (3 Credits)**

An introduction to and a synopsis of the editorial process, including canons of selection and textual criticism; the editorial commitment; annotation; preparing manuscript for the printer; and the one-person editorial project.

**HIST 792 - Historic Preservation (3 Credits)**

An examination of the preservation process, including the history of historic preservation, the development of preservation administrative systems, and preservation research methods and strategies. Field trips.

**HIST 793 - State and Local History (3 Credits)**

An intensive inquiry into the source materials of South Carolina and the unique problems associated with state and local history.

**HIST 794 - Research for Teaching (3 Credits)**

Course to familiarize M.A.T. students with the basic bibliographic aids and printed sources useful for the preparation of lectures.

**HIST 795 - Special Topics: Study Travel in History (1-6 Credits)**

Class time will be spent preparing a project that can be completed by faculty-supervised travel in the United States or abroad. Designed to be offered during summer sessions.

**HIST 796 - European Historiography (3 Credits)**

A course whose purpose is to acquaint students with the development of European historiography, schools of historical thought and interpretation. This course or HIST 797 is required of all history graduate students.

**HIST 797 - American Historiography (3 Credits)**

A course whose purpose is to acquaint students with the development of American historiography, schools of historical thought and interpretation. This course or HIST 796 is required of all history graduate students.

**HIST 798 - Internship in History (3 Credits)**

The application of historical skills in a sponsoring historical or public agency.

**HIST 799 - Thesis Preparation (1-9 Credits)**

For master's candidates.

**HIST 800 - Topics in History Research (3 Credits)**

Writing seminar on selected historical subjects. May be repeated for credit as topics change.

**HIST 801 - Research Seminar in Colonial American History (3 Credits)**

Restricted to M.A. and Ph.D. students in history.

**HIST 802 - Research Seminar in American History, 1789-1876 (3 Credits)**

Restricted to M.A. and Ph.D. students in history.

**HIST 803 - Research Seminar in American History, 1876-present (3 Credits)**

Restricted to M.A. and Ph.D. students in history.

**HIST 804 - Research Seminar in Ancient History (3 Credits)**

Restricted to M.A. and Ph.D. students in history.

**HIST 805 - Research Seminar in Medieval History (3 Credits)**

Restricted to M.A. and Ph.D. students in history.

**HIST 806 - Research Seminar in Early Modern European History (3 Credits)**

Restricted to M.A. and Ph.D. students in history.

**HIST 807 - Research Seminar in Modern European History (3 Credits)**

Restricted to M.A. and Ph.D. students in history.

**HIST 810 - Research Seminar in British History (3 Credits)**

Restricted to M.A. and Ph.D. students in history.

**HIST 811 - Research Seminar in Latin American History (3 Credits)**

Restricted to M.A. and Ph.D. students in history.

**HIST 812 - Research Seminar in East Asian History (3 Credits)**

Restricted to M.A. and Ph.D. students in history.

**HIST 813 - Research Seminar in African History (3 Credits)**

Restricted to M.A. and Ph.D. students in history.

**HIST 814 - Research Seminar in Middle Eastern and Islamic History (3 Credits)**

Restricted to M.A. and Ph.D. students in history.

**HIST 815 - Dissertation Prospectus Seminar (3 Credits)**

Restricted to Ph.D. students in history.

**HIST 816 - Historical Research Methods (3 Credits)**

The historical research process, including the definition of research, the determination, collection, and analysis of historical evidence.

**HIST 899 - Dissertation Preparation (1-12 Credits)****MUSM 700 - Administration and Management of Museums (3 Credits)**

The history and purpose of museums are examined. The basic management functions of museums and related cultural properties are considered.

**MUSM 701 - Exhibition Development (3 Credits)**

Exhibition planning: research, writing, design, budgeting.

**MUSM 702 - Museum Internship (3-6 Credits)**

This course is an internship in an AAM accredited museum. Students work under supervision in a museum setting.

**Prerequisites:** COLA 700 and COLA 701.

**MUSM 703 - Museum Management: Independent Study (3 Credits)**

Independent study in museum practices.

**Prerequisites:** COLA 700 and COLA 701.

**MUSM 704 - Collecting, Collections Management, and Curatorial Practice (3 Credits)**

Professional practice in collections management and care. Legal requirements and ethics of museum collecting. Curatorial collecting strategies and research.

## History, M.A.

### Learning Outcomes

- Students demonstrate excellence with a grade of B+ or above in HIST 700.
- Students successfully complete HIST 720 with a grade of B+ or above.
- Students successfully defend their MA thesis and are prepared for graduation.

### Degree Requirements (30 Hours)

The M.A. in History is offered in the following fields:

- Ancient world
- Medieval world
- Early modern Europe
- Modern Europe
- History of culture, identity, and economic development
- History of science, technology, and environment
- Middle East
- East Asia
- Latin America
- Sub-Saharan Africa
- U.S. to 1877
- U.S. since 1789.

Candidates for the M.A. degree shall file a program of study during their first semester of study and in no case later than 12 months after entering the program.

Candidates for the M.A. in History take a minimum of 30 semester hours, of which not more than 6 hours are for the thesis.

Course selection must take into account the Graduate School regulation for the M.A. that "at least half of the credit hours on the Program of Study, exclusive of thesis preparation (799), must be earned in courses numbered 700 and above.

Credit hours shall be distributed as follows:

#### Four Reading Seminars in the Major Field of Study (12 Hours)

These seminars should be at the HIST 500-797 levels. Students with a major field in U.S. History must take two of the following three courses:

- HIST 701
- HIST 702
- HIST 703

These courses must have advisor approval.

#### Required Introductory Course (3 Hours)

*Required of all entering M.A. students.*

Course	Title	Credits
HIST 720	Introduction to the Study of History	3
<b>Total Credit Hours</b>		<b>3</b>

#### 800-level Research Seminar (3 Hours)

*At least one is required.*

#### Additional Coursework in a Second Field (9 Hours)

##### Thesis Preparation (3 Hours)

Course	Title	Credits
HIST 799	Thesis Preparation	1-9
<b>Total Credit Hours</b>		<b>1-9</b>

### Additional Information

A reading knowledge of one foreign language or competence in an appropriate methodology is required. Choice of the latter must be approved by the Graduate Committee.

The M.A. thesis will be an expanded version of the student's 800-level research seminar paper, revised to the standard of a potentially publishable article-length essay. Normally, students will submit the thesis in the semester after completion of the 800-level research seminar paper, but students who complete their 800-level seminar in their first year may petition the Graduate Committee to submit their thesis during their final semester in the M.A. program. The thesis must be submitted in accordance with the regulations of The Graduate School.

Following successful completion of an 800-level research seminar, students will take an oral comprehensive examination on their thesis. In this examination, students will be asked to place their thesis in historiographic perspective. Normally, students will take the comprehensive examination in the semester after they complete an 800-level seminar. However, students who complete an 800-level seminar in their first year may petition the Graduate Committee to take their M.A. examination during their final semester in the program.

## History, Ph.D.

### Learning Outcomes

- Students will demonstrate competence in three fields of history.
- Students will produce significant contributions to scholarship prior to completing the dissertation.
- Students will produce important doctoral dissertations.
- Students who serve as graduate teaching assistants will develop competence as teachers.
- Students will become familiar with the employment options for which the Ph.D. in History is a valuable credential and will learn the paths most likely to lead to fulfillment of their individual career goals.

### Degree Requirements

Minimum of 60 hours post baccalaureate; minimum of 30 hours post Master's Degree (additional hours post-Master's may be required based on consultation with an advisory committee)

The Ph.D. is offered in the following major fields:

- U.S. to 1877
- U.S. since 1789

- Early modern Europe
- Modern Europe
- Latin America
- History of culture, identity and economic development
- History of science, technology, and environment

Ph.D. candidates will choose three fields of specialization. The major field in which the dissertation is written shall be one in which the Ph.D. is offered. Those fields can also be minor (secondary or tertiary) fields, though trans-national, thematic areas (such as cultural history, southern studies, comparative slavery, women and gender studies, or Atlantic World) can also be designated minor fields. Additionally, the second and third fields may include up to two of the following special fields: African American studies; diplomacy; Latin America; East Asia; sub-Saharan Africa; North Africa; Middle East; public history or one of the component areas of specialization in public history (archives, museum studies, historic preservation); military, legal, or constitutional history; U.S. South; women's history; gender studies; industrialization; labor; rural studies; environmental history; ethnicity; nationalism, or one cognate field in another discipline may be substituted for one of the minor fields.

The major field shall reflect the student's main interest and shall be chronologically and/or geographically defined.

One of the student's two minor fields also may be defined chronologically and/or geographically, provided that it covers a different area and/or time from the student's major field; or it may be a topical, thematic, or comparative field, including culture, identity, economic development.

In order for graduate students to be trained broadly in the discipline of history, the secondary or tertiary field should not both be a subset of the primary field, and clearly distinguishable as a separate field of study. Normally, students will be expected to complete 9 hours of course work in the second field and 6 hours of course work in the third field.

The student's third field can be in any approved field if the student's second field is a topical, thematic, or comparative field; otherwise, it shall be a topical, thematic, comparative field, or cognate field. The student can choose to do one field outside of history—as either the secondary or tertiary field—with an examiner from outside the department.

Ph.D. candidates shall file a program of study immediately after their admission to candidacy, which follows the successful completion of the qualifying examination or comes no later than 24 months after entering the program.

Doctoral students are required to take a minimum of 18 hours of course work beyond the M.A., but additional hours may be specified by their advisor and approved by the Committee on Graduate Studies. Ph.D. students should expect to take at least 12 hours of dissertation preparation.

Credit hours shall be distributed as follows:

### Graduate-Level Reading Seminars (6 Hours)

*Unless taken at the M.A. level.*

The seminars should be in two of the student's fields of study. The student's advisor may substitute other appropriate courses.

### Methodological and Theoretical Training Coursework (6 Hours)

Courses will complement the 700-graduate reading seminars in historiography.

Course	Title	Credits
HIST 720	Introduction to the Study of History	3
HIST 783	History and Theory	3
<b>Total Credit Hours</b>		<b>6</b>

### 800-Level Research Seminar (3 Hours)

Seminar will be in the student's major field and is in addition to the research seminar required for the M.A.

Course	Title	Credits
HIST 815	Dissertation Prospectus Seminar	3
<b>Total Credit Hours</b>		<b>3</b>

### Additional Information

Every Ph.D. student shall prove competency in at least one foreign language or appropriate methodology. Additional languages and/or methodological requirements will be determined by the student's program advisory committee when the chosen fields or research interests demand more.

Written comprehensive examinations in three fields are required and are offered in January, May, and August of each year. Minor-field examinations will be administered independently by the faculty in those areas and will consist of one four-hour examination for each field.

The major field will have two examiners, and there will be two four-hour examinations. All requirements for attaining the degree (except for completion of the dissertation) shall be accomplished prior to taking the comprehensive examination in the major field. This includes the satisfactory completion of the language requirement and the removal of any grades of incomplete.

If a student fails, the exam may be retaken one time and must be administered by the same examiner(s).

Oral examinations covering the major and minor fields will be scheduled after the successful completion of written examinations in all fields.

In order to achieve official ABD status, all students shall orally present and defend a written dissertation proposal to their committee and other interested members of the department. The dissertation prospectus defense will take place while the student is enrolled in HIST 815 or, with the approval of the committee, shortly after completion of the course.

Finally, candidates will prepare for submission a dissertation that is expected to represent a substantial contribution to historical knowledge.

## Museum Management, Certificate

### Learning Outcomes

- Student will demonstrate competencies required for professional practice in the museum field by distinguishing good and bad practices when assessing cases studies. In each class, students will complete assignments requiring them to present their own ideas, and justify their points of view, in both speaking and writing.

- Students will demonstrate their knowledge of the theory behind museum standards and best practices by answering exam questions in their own words. Students will also demonstrate their comprehension through practical application. For example, the instructor for MUSM 704 requires students to fill out condition reports, to move objects from storage to the galleries, and to evaluate environmental levels in storage areas.
- Students will write an exhibition proposal, which includes defining the subject of their exhibition, defining themes to be covered, researching the types of materials to be displayed, classify the objects by type, assess which will best illustrate their interpretative points, and select pieces for inclusion. They also write interpretive materials, design the layout of the gallery, physically install the exhibition, and evaluate the product. Students are also required to present their ideas to an audience of their peers, as well as museum professionals.
- Students are encouraged to propose independent scholarship for inclusion in conference sessions, which will provide students with opportunities to speak about their work demonstrating their research, writing, and public speaking skills.

## Certificate Requirements (18 Hours)

Any matriculated graduate student at the University of South Carolina may apply to the Museum Management Certificate Program. The Certificate of Graduate Study in Museum Management will be awarded upon the completion of 18 semester hours, including one internship project. The content of the project will be designed to suit the needs of the individual student.

All students must complete the core curriculum of 12 semester hours. Six approved hours may be taken in subject areas of graduate degree study such as anthropology, art, business administration, history, library and information science, or public administration. A number of departments have integrated the certificate program within their own areas of study. Up to 6 semester hours are recognized by the Departments of Anthropology and Art, the Public History Program of the Department of History, the School of Library and Information Science, and the Master of Public Administration Program. Specific MUSM courses are listed below.

For more information about this program, write:

Museum Management Program  
McKissick Museum  
University of South Carolina  
Columbia, SC 29208.

### Coursework

Course	Title	Credits
MUSM 700	Administration and Management of Museums	3
MUSM 701	Exhibition Development	3
MUSM 702	Museum Internship	3-6
MUSM 703	Museum Management: Independent Study	3
MUSM 704	Collecting, Collections Management, and Curatorial Practice	3
<b>Total Credit Hours</b>		<b>15-18</b>

## Public History, M.A.

### Learning Outcomes

- All students in the Public History program will demonstrate specific competencies required for professional practice in the public history

field in which they are specializing, including competencies with information and communication technologies, knowledge of public law or professional best practices, and familiarity with the special problems of the particular cultural resources (documents, objects, buildings, sites) with which they will be working in their professional careers.

- Students will gain practical experience in a non-classroom setting, performing work appropriate to their concentration and interests, mentored by a working public history professional through both internships and assistantships.
- Students will produce a comprehensive portfolio of their work as a public history degree student, including a resume, short reflective essay, and public history projects.

## Degree Requirements (30 Hours)

The M.A. in Public History integrates traditional graduate study in history with professional training in the skills used in the public and private sectors. The curriculum offers a choice of two areas of concentration for the major field: historic preservation and museums. In addition, students complete course work in a minor field within the general graduate history curriculum, usually but not exclusively U.S. to 1877 or U.S. since 1789.

A reading knowledge of one foreign language or competence in an appropriate methodology is required. Choice of the latter must be approved by the Graduate Committee.

Candidates for the M.A. in Public History choose a major and a minor field, perform a 145-hour internship, present a portfolio of their work, and write a thesis. A minimum of 30 semester hours, of which 12 hours will be in public history courses, 15 hours will be in the history core, and 3 hours of thesis credits are required.

Course selection must take into account the Graduate School regulation for the M.A. that "at least half of the credit hours on the Program of Study, exclusive of thesis preparation (HIST 799), must be earned in courses numbered 700 and above.

### Major Field (12 Hours)

Students take 6 hours of course work chosen from one of two concentrations, and 6 additional hours of courses with Public History content (and so designated by the Department's Graduate Committee), some of which might be in the concentration, some of which might not.

### Historic Preservation Concentration

*Students must take at least two courses from the list below:*

Course	Title	Credits
HIST 758	Capital City Field School: Theory and Practice of Historic Preservation	3
HIST 788	Memory, History, and Space	3
HIST 792	Historic Preservation	3
HIST 692	Historic Preservation Field Experience—Charleston, S.C.	3
HIST 700	Topics in History	3
HIST 789	Historic Site Interpretation	3
HIST 786	Comparative Applied History, U.S. and U.K.	3
HIST 599	Topics in History	3

### Museums Concentration

*Students must take at least two courses from the list below:*

Course	Title	Credits
HIST 599	Topics in History	3
HIST 692	Historic Preservation Field Experience--Charleston, S.C.	3
HIST 700	Topics in History	3
HIST 781	History and Theory of Museums	3
HIST 786	Comparative Applied History, U.S. and U.K.	3
HIST 787	Material Culture Studies	3
HIST 789	Historic Site Interpretation	3

## Minor Field (15 Hours)

All students are required to take HIST 720 in the first semester it is offered after their enrollment.

Students with a minor field in US History must take two of the following three courses: HIST 701 or HIST 752 and HIST 702.

Students in another field must take two relevant reading seminars approved by their advisor or the Director of Graduate Studies.

All students must take one graduate-level elective course in History at the 500-797-level.

All students must take one semester of HIST 800.

## Thesis Preparation (3 Hours)

3 hours of thesis preparation (HIST 799).

## Internship

Students must complete an internship of at least 145 hours, approved by their advisor.

## Additional Information

The M.A. thesis will be an expanded version of the student's 800-level research seminar paper, revised to the standard of a potentially publishable article-length essay. The thesis must be submitted in accordance with the regulations of The Graduate School. An oral comprehensive examination on the student's thesis will be given after the student's thesis advisor approves the thesis for the defense. In this examination, the student will be asked to place his/her thesis in historiographic perspective.

In addition to the thesis, students will compile a portfolio of their public history work in accordance with departmental policy and will present that portfolio at a public review.

Students must complete an internship of at least 145 hours in a professional capacity. Students must have an internship contract approved in advance of the work by the Director of the Public History program. Students must submit a final report following the conclusion of the internship and must solicit a work report about their performance from their internship supervisor to be sent directly to the Director of the Public History program.

Candidates for the M.A. in Public History shall file a Program of Study no later than 12 months after entering the program. A student in the M.A./M.L.I.S. joint program should prepare and file separate forms for each degree but should submit them together to The Graduate School.

All students enrolled in public history may also enter the Museum Certificate Program coordinated by the University's McKissick Museum or the certificate program in Historical Archaeology and Cultural Resource

Management offered by the Department of Anthropology. Students may apply for dual degree status with the M.A./M.L.I.S. offered in conjunction with the School of Library and Information Science.

Additional information is available at Graduate Dual Degree Programs (p. 463).

## Languages, Literatures, and Cultures

Department Website (<http://www.cas.sc.edu/dllc/>)

Yvonne Ivory, *Graduate Director*

The department offers programs leading to the Master of Arts degree in comparative literature, French, German, or Spanish; the Doctor of Philosophy degree in comparative literature or Spanish; and, in collaboration with the College of Education, the Master of Arts in Teaching degree in foreign languages. There also exist options whereby students may pursue an M.A. in French, German, or Spanish leading to the Ph.D. in comparative literature or linguistics.

The Languages, Literatures, and Cultures Department offers the Foreign Language, M.A.T. (P-12 Certification) (p. 245) degree in conjunction with the College of Education.

## Programs

- Comparative Literature, M.A. (p. 79)
- Comparative Literature, Ph.D. (p. 80)
- French, M.A. (p. 81)
- German, M.A. (p. 82)
- Spanish, M.A. (p. 82)
- Spanish, Ph.D. (p. 83)

## Courses

### ARAB 615 - Intensive Readings in Arabic (3 Credits)

Intensive reading for non-majors. Graduate students fulfill their foreign-language requirement with successful completion of the course. Undergraduates may take the course as an elective only. Grades S/U for graduates and undergraduates.

### ARAB 777 - Supervised Instruction in Teaching Foreign Languages in College (0 Credits)

Supervised direction of foreign language teaching in college. Required of all graduate assistants who are teaching. This course will not count toward the MA or PhD degree.

### CHIN 550 - Advanced Special Topics in Chinese Studies (3 Credits)

Advanced special topics in Chinese studies. May be repeated as content varies by title.

### CHIN 777 - Supervised Instruction in Teaching Foreign Languages in College (0 Credits)

Supervised direction of foreign language teaching in college. Required of all graduate assistants who are teaching. This course will not count toward the MA or PhD degree.

### CLAS 586 - Classical Mythology (3 Credits)

The major Greek and Roman myths, with emphasis on their meaning, functions, and influence on ancient and later Western culture.

### CLAS 598 - Classics of Western Literary Theory (3 Credits)

Problems of literary theory in texts from the ancients to the 17th century, with an emphasis on the classical tradition.

**Cross-listed course:** CPLT 701, ENGL 733

**CLAS 777 - Supervised Instruction in Teaching Foreign Languages in College (0 Credits)**

Supervised direction of foreign language teaching in college. Required of all graduate assistants who are teaching. This course will not count toward the MA or PhD degree.

**CPLT 597 - Special Topics in Comparative Studies in Film and Media (3 Credits)**

Topics in film and media from an international perspective. National cinematic traditions are compared and contrasted. May be repeated as content varies by title.

**Graduation with Leadership Distinction:** GLD: Global Learning

**CPLT 700 - Introduction to Graduate Studies in Languages, Literatures, and Cultures (3 Credits)**

An introduction to graduate studies that includes a survey of contemporary literary theory, an overview of the current state of the profession, and instruction in how to carry out research and write at the graduate level.

**Cross-listed course:** FREN 700, GERM 700, SPAN 700

**CPLT 701 - Classics of Western Literary Theory (3 Credits)**

Problems of literary theory in texts from the ancients to the 17th century, with an emphasis on the classical tradition.

**Cross-listed course:** ENGL 733

**CPLT 702 - Modern Literary Theory (3 Credits)**

Problems of literary theory from the 18th century to the 1960s.

**Cross-listed course:** ENGL 734

**CPLT 703 - Topics in Contemporary Literary Theory (3 Credits)**

Presents an in-depth study of selected schools or trends in contemporary literary theory.

**CPLT 720 - The Periods of Literature (3 Credits)**

The study of one cultural period as an international movement. Topics will vary.

**CPLT 730 - The Literary Genre (3 Credits)**

Study of a genre from its inception to the present and its manifestations in the several literatures. Topics will vary.

**CPLT 740 - Themes in Literature (3 Credits)**

The study of recurrence and mutation in literary themes. Topics will vary.

**CPLT 750 - Cross-Cultural Literary Relations (3 Credits)**

Topics will vary and will be announced (e.g., Anglo-French literary relations, 1740-1900; 20th-century German-American literary relations).

**CPLT 760 - Literature and Translation: Theory and Practice (3 Credits)**

A survey of recent translation theory as it relates to literature, combined with translation analysis and actual translation of literary texts.

**CPLT 765 - Advanced Film Study (3 Credits)**

Methods of film analysis, resources for research, and the major critical theories.

**Cross-listed course:** ENGL 765

**CPLT 777 - Supervised Instruction in Teaching Foreign Languages in College (0 Credits)**

Supervised direction of foreign language teaching in college. Required of all graduate assistants who are teaching. This course will not count toward the MA or PhD degree.

**CPLT 799 - Thesis Preparation (1-9 Credits)****CPLT 850 - The Teaching of Comparative Literature (3 Credits)**

Open to Ph.D. candidates who have passed their comprehensive examinations.

**CPLT 880 - Seminar in Comparative Literature (3 Credits)****CPLT 881 - Seminar in Comparative Literature (3 Credits)****CPLT 882 - Seminar in Comparative Literature (3 Credits)****CPLT 883 - Seminar in Comparative Literature (3 Credits)****CPLT 895 - Research (3 Credits)****CPLT 896 - Research (3 Credits)****CPLT 899 - Dissertation Preparation (1-12 Credits)****FORL 501 - Spanish for Medical Personnel (3 Credits)**

Basic course in health professions. Functional language and lexicon as well as cultural practices for interaction with Hispanic clients.

**Prerequisites:** 2 semesters of college-level Spanish or equivalent.

**FORL 510 - Teaching Second Languages to Young Children (3 Credits)**

To assist prospective teachers of young children in the development of a second language and multicultural learning activities. Practicum sessions are an integral part.

**Prerequisites:** 210 level of a foreign language or its equivalent.

**Cross-listed course:** EDEL 510

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Internships

**FORL 511 - Teaching Foreign Languages in Secondary Schools (3 Credits)**

Current methods, techniques, and materials of instruction appropriate for secondary schools.

**Prerequisites:** 210 level of a foreign language or its equivalent.

**Cross-listed course:** EDSE 575

**FORL 598 - Special Topics in Global Film and Media (3 Credits)**

Intensive study of a specific topic concerning films produced in a country other than the United States. May be repeated as content varies by title.

**Prerequisites:** FAMS 240.

**Cross-listed course:** FAMS 598, MART 594

**FORL 700A - Language Training in International Business I (1-12 Credits)**

An introduction to the fundamentals of Arabic and an intensive study of the culture and specialized language of the business world in which the language is used as may be necessary for I.M.B.A. candidates to function as business specialists in regions other than their native country. Not for graduate credit in a foreign language department.

**FORL 700C - Language Training in International Business I (1-12 Credits)**

An introduction to the fundamentals of Chinese and an intensive study of the culture and specialized language of the business world in which the language is used as may be necessary for I.M.B.A. candidates to function as business specialists in regions other than their native country. Not for graduate credit in a foreign language department.

**FORL 700E - Language Training in International Business I (1-12 Credits)**

An introduction to the fundamentals of English and an intensive study of the culture and specialized language of the business world in which the language is used as may be necessary for I.M.B.A. candidates to function as business specialists in regions other than their native country. Not for graduate credit in a foreign language department.





**FORL 705A - Lang Trng in Intl Bus III (6 Credits)**

Intensive course for students in the I.M.B.A. program, intended to investigate on an advanced level the linguistic and cultural aspects of business and to prepare the student for an internship either in the United States or abroad. Not for major credit in a graduate program in the foreign language departments.

**FORL 705C - Lang Trng in Intl Bus III (6 Credits)**

Intensive course for students in the I.M.B.A. program, intended to investigate on an advanced level the linguistic and cultural aspects of business and to prepare the student for an internship either in the United States or abroad. Not for major credit in a graduate program in the foreign language departments.

**FORL 705E - Lang Trng in Intl Bus III (6 Credits)**

Intensive course for students in the I.M.B.A. program, intended to investigate on an advanced level the linguistic and cultural aspects of business and to prepare the student for an internship either in the United States or abroad. Not for major credit in a graduate program in the foreign language departments.

**FORL 705F - Lang Trng in Intl Bus III (6 Credits)**

Intensive course for students in the I.M.B.A. program, intended to investigate on an advanced level the linguistic and cultural aspects of business and to prepare the student for an internship either in the United States or abroad. Not for major credit in a graduate program in the foreign language departments.

**FORL 705G - Lang Trng in Intl Bus III (6 Credits)**

Intensive course for students in the I.M.B.A. program, intended to investigate on an advanced level the linguistic and cultural aspects of business and to prepare the student for an internship either in the United States or abroad. Not for major credit in a graduate program in the foreign language departments.

**FORL 705I - Lang Trng in Intl Bus III (6 Credits)**

Intensive course for students in the I.M.B.A. program, intended to investigate on an advanced level the linguistic and cultural aspects of business and to prepare the student for an internship either in the United States or abroad. Not for major credit in a graduate program in the foreign language departments.

**FORL 705J - Lang Trng in Intl Bus III (6 Credits)**

Intensive course for students in the I.M.B.A. program, intended to investigate on an advanced level the linguistic and cultural aspects of business and to prepare the student for an internship either in the United States or abroad. Not for major credit in a graduate program in the foreign language departments.

**FORL 705K - Lang Trng in Intl Bus III (6 Credits)**

Intensive course for students in the I.M.B.A. program, intended to investigate on an advanced level the linguistic and cultural aspects of business and to prepare the student for an internship either in the United States or abroad. Not for major credit in a graduate program in the foreign language departments.

**FORL 705P - Lang Trng in Intl Bus III (6 Credits)**

Intensive course for students in the I.M.B.A. program, intended to investigate on an advanced level the linguistic and cultural aspects of business and to prepare the student for an internship either in the United States or abroad. Not for major credit in a graduate program in the foreign language departments.

**FORL 705R - Lang Trng in Intl Bus III (6 Credits)**

Intensive course for students in the I.M.B.A. program, intended to investigate on an advanced level the linguistic and cultural aspects of business and to prepare the student for an internship either in the United States or abroad. Not for major credit in a graduate program in the foreign language departments.

**FORL 705S - Lang Trng in Intl Bus III (6 Credits)**

Intensive course for students in the I.M.B.A. program, intended to investigate on an advanced level the linguistic and cultural aspects of business and to prepare the student for an internship either in the United States or abroad. Not for major credit in a graduate program in the foreign language departments.

**FORL 730 - Principles of Instructed Second Language Acquisition and Foreign Language Teaching (3 Credits)**

An analysis of instructed second language acquisition (SLA). This course explores the historical development and up-to-date findings in foreign/second language research and applies that knowledge to classroom teaching methods. Students will be expected to conduct empirical investigation.

**Prerequisites:** FORL 511 or LING 790.

**Cross-listed course:** LING 792

**FORL 772 - Technology in Foreign Language Education (3 Credits)**

Introduction to technology in language teaching and the connection between language acquisition and the implementation of Internet and multimedia technology.

**Cross-listed course:** EDTE 772, LING 772

**FORL 774A - Teaching Internship (Foreign Languages) (3 Credits)**

Application of effective teaching techniques and organization of instructional settings in foreign languages for K-12.

**Prerequisites:** acceptance to the professional program in education.

**Cross-listed course:** EDTE 774A

**FORL 774B - Teaching Internship (Foreign Languages) (9 Credits)**

Application of effective teaching techniques and organization of instructional settings in foreign languages for K-12.

**Prerequisites:** FORL 774A.

**Corequisite:** EDSE 584.

**FORL 776 - The Teaching of Foreign Languages in College (3 Credits)**

Basic theoretical principles of foreign language teaching in college. Required of all graduate teaching assistants. Required of all M.A.T. students. Other students may use as an elective.

**FREN 501 - Contemporary France (3 Credits)**

Readings in and discussion of the culture of contemporary France.

**Prerequisites:** C or better in both FREN 309 and FREN 310, or equivalents, or a score of F-7 on the French language placement exam. FREN 311 strongly recommended.

**FREN 510 - Current Events in the France and the Francophone World (3 Credits)**

Development of advanced oral skills in French. Study of linguistic and cultural aspects of French language media.

**Prerequisites:** C or better in both FREN 309 and FREN 310, or equivalents, or a score of F-7 on the French language placement exam. FREN 311 strongly recommended.

**FREN 511 - Techniques of Literary Analysis (3 Credits)**

Texts from standard authors, with emphasis on explication de texte.

**Prerequisites:** C or better in each of FREN 309, FREN 310, and FREN 311, or equivalents, or a score of F-7 on the French language placement exam.

**FREN 515 - Advanced French Stylistics (3 Credits)**

Practice in descriptive and narrative composition with special attention to contrastive stylistics; thème et version.

**Prerequisites:** C or better in each of FREN 309, FREN 310, and FREN 311, or equivalents, or a score of F-7 on the French language placement exam.

**FREN 516 - French Phonology (3 Credits)**

The sound system and its functioning in the morphological system of French from the point of view of current phonological theory.

**Cross-listed course:** LING 512

**FREN 517 - French Linguistics (3 Credits)**

The structure, morphology, and syntax of modern French.

**Cross-listed course:** LING 502

**FREN 595 - Special Topics in French (3 Credits)**

Poetry, prose, theatre, cinema, civilization, language, linguistics. Unique opportunities will be announced by title. May be repeated.

**Prerequisites:** C or better in both FREN 309 and FREN 310, or equivalents, or a score of F-7 on the French language placement exam. FREN 311 strongly recommended.

**FREN 615 - Intensive Readings in French (3 Credits)**

Graduate students fulfill their foreign-language reading requirement with successful completion of the course. Undergraduates may take the course as an elective only. Grades S/U for graduates and undergraduates.

**FREN 700 - Introduction to Graduate Studies in Languages, Literatures, and Cultures (3 Credits)**

An introduction to graduate studies that includes a survey of contemporary literary theory, an overview of the current state of the profession, and instruction in how to carry out research and write at the graduate level.

**Cross-listed course:** CPLT 700, GERM 700, SPAN 700

**FREN 715 - History of the French Language (3 Credits)**

Development of the French language from its origins to 1600.

**Cross-listed course:** LING 732

**FREN 720 - La Nouvelle Vague et Après/The New Wave and After (3 Credits)**

Modern French films in their cultural context beginning with the cinema of the Tradition of Quality and the Nouvelle Vague of the late 1950s.

**FREN 730 - Francophone Literatures (3 Credits)**

Literatures in French from Africa and the New World.

**FREN 735 - Francophone Literature from Quebec (3 Credits)**

Introduction to the literature and culture of French-speaking Canada and specifically of Quebec. A survey of influential works will be discussed in relation to their historical and cultural background.

**FREN 740 - Old French Literature (3 Credits)**

French literature from 842 to 1500.

**FREN 750 - Sixteenth-Century French Literature (3 Credits)**

Extensive readings and study in the prose, poetry, and drama of 16th-century literature.

**FREN 760 - Seventeenth-Century French Literature (3 Credits)****FREN 770 - Eighteenth-Century French Literature (3 Credits)****FREN 775 - Seminars on Selected Topics in Foreign Language Education (3 Credits)**

Topics will be identified by title in the schedule of classes. Each topic may be taken only once.

**FREN 776 - The Teaching of Foreign Languages in College (3 Credits)**

Basic principles of foreign language teaching in college combined with practical demonstrations. Note: Required of all graduate assistants. This course will not count toward the 30-hour M.A. or M.A.T. degree.

**FREN 777 - Supervised Instruction in Teaching Foreign Languages in College (0 Credits)**

Supervised direction of foreign language teaching in college. Required of all graduate assistants who are teaching. This course will not count toward the 30-hour M.A. or M.A.T. degree.

**FREN 780 - Nineteenth-Century French Literature (3 Credits)****FREN 790 - Twentieth-Century French Literature (3 Credits)****FREN 795 - French Seminar (3 Credits)**

May be repeated with approval of advisor.

**FREN 796 - Special Projects in French (1-3 Credits)**

Directed research and reading in subjects to be individually assigned. Prior written approval of professor required. May be repeated once for credit.

**FREN 799 - Thesis Preparation (1-9 Credits)****GERM 500 - Survey of German Culture (3 Credits)**

Historical survey of the German contribution to the intellectual and cultural life of Europe. Texts and films in German.

**Prerequisites:** advanced reading ability in German.

**GERM 515 - Introduction to German Linguistics (3 Credits)**

Structural and descriptive linguistics applied to the German language.

**Cross-listed course:** LING 503

**GERM 516 - History of the German Language (3 Credits)**

Development of German in the Germanic, Old High German, Middle High German, and New High German periods. Phonology, morphology, syntax, semantics, and the relationship between dialects and the standard language.

**Cross-listed course:** LING 733

**GERM 517 - Introduction to the Germanic Languages (3 Credits)**

Introduction to historical Germanic linguistics including a survey of the Old Germanic languages (Old English, Old Frisian, Old Saxon, Old High German, Old Norse, Gothic); comparative phonology, morphology, and syntax, typology of modern Germanic languages and dialects; and common Germanic in its Indo-European context.

**Cross-listed course:** LING 533

**GERM 518 - German Sociolinguistics (3 Credits)**

Introduction to the study of variation in Modern German. Traditional German dialectology and dialect geography, language and society, multilingualism in the German-speaking countries, German in contact with other languages.

**Cross-listed course:** LING 548

**GERM 580 - Topics in German Film (3 Credits)**

Examination of recurring themes and issues or of significant periods and influential styles in German film. Course content varies and individual topics will be announced with course title.

**GERM 598 - Selected Topics in German (3 Credits)**

**GERM 615 - Intensive Readings in German (3 Credits)**

Intensive reading for non-majors. Graduate students fulfill their foreign-language requirement with successful completion of the course. Undergraduates may take the course as an elective only by permission of instructor. Grades S/U for graduates and undergraduates.

**GERM 700 - Introduction to Graduate Studies in Languages, Literatures, and Cultures (3 Credits)**

An introduction to graduate studies that includes a survey of contemporary literary theory, an overview of the current state of the profession, and instruction in how to carry out research and write at the graduate level.

**Cross-listed course:** CPLT 700, FREN 700, SPAN 700

**GERM 710 - Middle High German (3 Credits)**

A study of Middle High German language and literature with special emphasis on the lyric and epic poetry of the late 12th and early 13th centuries.

**GERM 711G - Old Germanic Languages - Gothic (3 Credits)**

Reading and translation of texts in of the Old Germanic languages: Old High German 711H, Old Saxon 711S, Old Norse 711N, or Gothic 711G. May be repeated for credit with a different letter suffix from options noted above. Reading knowledge of Moderna German required.

**GERM 711H - Old Germanic Languages - Old High German (3 Credits)**

Reading and translation of texts in of the Old Germanic languages: Old High German 711H, Old Saxon 711S, Old Norse 711N, or Gothic 711G. May be repeated for credit with a different letter suffix from options noted above. Reading knowledge of Moderna German required.

**GERM 711N - Old Germanic Languages - Old Norse (3 Credits)**

Reading and translation of texts in of the Old Germanic languages: Old High German 711H, Old Saxon 711S, Old Norse 711N, or Gothic 711G. May be repeated for credit with a different letter suffix from options noted above. Reading knowledge of Moderna German required.

**GERM 711S - Old Germanic Languages - Old Saxon (3 Credits)**

Reading and translation of texts in of the Old Germanic languages: Old High German 711H, Old Saxon 711S, Old Norse 711N, or Gothic 711G. May be repeated for credit with a different letter suffix from options noted above. Reading knowledge of Moderna German required.

**GERM 720 - The German Renaissance and Baroque (3 Credits)**

Reading and interpretation of significant literary works of the 16th and 17th centuries.

**GERM 730 - The German Enlightenment and its Counter-Currents (3 Credits)**

Reading and discussion of key literary and classical works from specific 18th-century movements, including Enlightenment, Storm and Stress, and Weimar Classicism.

**GERM 740 - German Romanticism (3 Credits)**

The development of German Romanticism, its major literary works and personalities.

**GERM 750 - German Realism (3 Credits)**

German Realism, its major literary works and background.

**GERM 760 - German Literature from 1889 to 1945 (3 Credits)**

Currents of German literature since Naturalism, accompanied by critical reading of characteristic works by major writers of the period.

**GERM 770 - Recent and Contemporary German Literature (3 Credits)**

The development of German literature since World War II, through critical reading and interpretation of major representative works.

**GERM 775 - Seminars on Selected Topics in Foreign Language Education (3 Credits)**

Topics will be identified by title in the schedule of classes. Each topic may be taken only once.

**GERM 776 - The Teaching of Foreign Languages in College (3 Credits)**

Basic principles of foreign language teaching in college combined with practical demonstrations. Required of all graduate assistants. This course will not count toward the 30-hour M.A. or M.A.T degree.

**GERM 777 - Supervised Instruction in Teaching Foreign Languages in College (0 Credits)**

Supervised direction of foreign language teaching in college. Required of all graduate assistants who are teaching. This course will not count toward the M.A. or M.A.T. degree.

**GERM 780 - German Seminar (3 Credits)**

Content Varies.

**GERM 781 - German Seminar (3 Credits)**

Content Varies.

**GERM 790 - Directed Reading and Research (3 Credits)****GERM 799 - Thesis Preparation (1-9 Credits)****GREK 501 - Herodotus (3 Credits)**

Readings from the Histories.

**GREK 502 - Thucydides (3 Credits)**

Readings from the History of the Peloponnesian War.

**GREK 533 - Sophocles (3 Credits)**

Selected plays.

**GREK 534 - Euripides (3 Credits)**

Selected plays.

**GREK 543 - Hesiod and the Homeric Hymns (3 Credits)**

Readings from the Works and Days, the Theogony, and the Homeric Hymns.

**GREK 550 - Greek Seminar (3 Credits)**

Authors and topics not covered in other Greek language courses, chosen to meet the needs of individual students. May be repeated with the approval of the department.

**GREK 560 - Independent Study (1-3 Credits)**

Special projects for independent study and research.

**GREK 561 - Independent Study (1-3 Credits)**

Special projects for independent study and research.

**GREK 614 - Intensive Grammar Review of Ancient Attic Greek (3 Credits)**

Intensive review for nonmajors designed to prepare them for GREK 615.

**GREK 615 - Intensive Readings in Ancient Attic Greek (3 Credits)**

Intensive reading for nonmajors. A review of grammar and syntax with reading of passages from Plato's Apology. Primarily for graduate students to fulfill the foreign-language reading requirement.

**Prerequisites:** GREK 614.

**ITAL 560 - Independent Studies in Italian Literature (1-3 Credits)**

Special topics in Italian literature.

**ITAL 561 - Independent Studies in Italian Literature (1-3 Credits)**

Special topics in Italian literature.

**ITAL 615 - Intensive Readings in Italian (3 Credits)**

Graduate students fulfill their foreign language reading requirement with successful completion of the course. Undergraduates may take the course as an elective only.

**JAPA 500 - Japanese Language in Society (3 Credits)**

Japanese language and communication in its sociocultural context; emphasis on comparison with American English. Taught in English.

**Cross-listed course:** LING 546

**JAPA 777 - Supervised Instruction in Teaching Foreign Languages in College (0 Credits)**

Supervised direction of foreign language teaching in college. Required of all graduate assistants who are teaching. This course will not count toward the MA or PhD degree.

**LATN 501 - Latin Drama (3 Credits)**

Selected plays of Plautus and Terence.

**LATN 502 - Cicero (3 Credits)**

Readings from a variety of Cicero's works to gain a concept of the man as a humanist.

**LATN 504 - Horace (3 Credits)**

Readings from the Odes.

**LATN 508 - Ovid (3 Credits)**

Selected readings from the Metamorphoses.

**LATN 513 - Tacitus (3 Credits)**

Agricola or selections from the Annales.

**LATN 514 - Livy (3 Credits)**

Readings from Ab Urbe Condita.

**LATN 525 - Roman Satire (3 Credits)**

Readings in Horace, Juvenal, and Petronius.

**LATN 530 - Latin Erotic Poetry (3 Credits)**

Readings from the elegies of Catullus, Tibullus, Propertius, and Ovid.

**LATN 537 - Lucretius (3 Credits)**

Readings from the De Rerum Natura.

**LATN 540 - Renaissance Latin (3 Credits)**

An examination of several genres of Latin writing from Europe during the period 1400-1600, emphasizing, but not limited to, Italian writers.

**LATN 551 - History of Latin Literature from the Origins to the Golden Age (3 Credits)**

Readings from the Twelve Tables to Virgil, supplemented by readings in history and scholarship. Designed to prepare majors and honors students for further study.

**LATN 552 - History of Latin Literature in the Silver Age (3 Credits)**

Readings from Ovid to Ammianus, supplemented by readings in history and scholarship. Designed to prepare majors and honors students for further study.

**LATN 560 - Independent Study (1-3 Credits)**

Special projects for independent study and research.

**LATN 561 - Independent Study (1-3 Credits)**

Special projects for independent study and research.

**LATN 580 - Teaching Advanced Latin in Secondary School (3 Credits)**

Methods and materials for teaching the Latin Advanced Placement courses in secondary school.

**LATN 614 - Intensive Grammar Review in Latin (3 Credits)**

Intensive grammar review for non-majors; designed as preparation for LATN 615.

**LATN 615 - Intensive Readings in Latin (3 Credits)**

Intensive reading for non-majors. Graduate students fulfill their foreign-language reading requirement with successful completion of the course. Undergraduates may take the course as an elective only.

**LATN 703 - Medieval Latin (3 Credits)**

Survey of the survival of the classical tradition in the middle ages from the birth of Ammianus Marcellinus to the fall of Constantinople (A.D. 330-1453).

**LATN 775 - Seminars on Selected Topics in Foreign Language Education (3 Credits)**

Topics will be identified by title in the schedule of classes. Each topic may be taken only once.

**LATN 790 - Directed Reading and Research (3 Credits)****PORT 615 - Intensive Readings in Portuguese (3 Credits)**

Intensive reading for non-majors. Graduate students fulfill their foreign-language reading requirements with successful completion of the course. Undergraduates may take the course as an elective only.

**RUSS 518 - Medieval Russian Culture (3 Credits)**

An introduction to the culture of medieval Russia through its written records, folklore, icons, and ancient religious chant.

**RUSS 520 - Russian Modernism: Love, Sex and Politics in Revolutionary Russia (3 Credits)**

An exploration of Russian modernist culture, with particular attention to the themes of social and political change. Authors under discussion include Kuzmin, Bely, and Zamyatin.

**RUSS 530 - Homer in Russia (3 Credits)**

An examination of the influence of Homer's epic poems The Iliad and The Odyssey on Russian culture, as seen in works by Russian writers including Tolstoy, Pasternak, and Brodsky.

**RUSS 540 - Writing Russian National Identity (3 Credits)**

An examination of Russian writers reflecting on Russian national identity, including Solzhenitsyn, Dostoevsky, and Grossman.

**RUSS 598 - Selected Topics in Russian (3 Credits)**

Reading and research on selected topics in Russian. Course content varies and will be announced in the schedule of courses by title.

**RUSS 615 - Intensive Readings in Russian (3 Credits)**

Intensive reading course for non-majors. Primarily for graduate students to fulfill the foreign-language reading requirement. It will not be applied toward the degree language requirements nor will it be accepted as a substitute in the course sequence leading to the various degree requirements.

**RUSS 616 - Intensive Readings in Russian (3 Credits)**

Intensive reading course for non-majors. Primarily for graduate students to fulfill the foreign-language reading requirement. It will not be applied toward the degree language requirements nor will it be accepted as a substitute in the course sequence leading to the various degree requirements.

**Prerequisites:** RUSS 615.

**RUSS 777 - Supervised Instruction in Teaching Foreign Languages in College (0 Credits)**

Supervised direction of foreign language teaching in college. Required of all graduate assistants who are teaching. This course will not count toward the MA or PhD degree.

**RUSS 790 - Directed Reading and Research (1-3 Credits)**

CL: 2020.

**SPAN 500 - Contemporary Spain (3 Credits)**

Analysis and discussion of 20th-century Spanish history and the sociocultural forces that have contributed to define this country's national identity. Taught in Spanish.

**Prerequisites:** SPAN 303 for Undergraduates, Phase II placement exam above SPAN 303.

**Graduation with Leadership Distinction:** GLD: Global Learning

**SPAN 501 - Contemporary Spanish America (3 Credits)**

Analysis and discussion of 20th-century Spanish American history and the sociocultural forces that have contributed to define this area's national identities. Taught in Spanish.

**Cross-listed course:** LASP 501

**SPAN 513 - Introduction to Professional and Technical Translation (3 Credits)**

Introduction to translation and practice of skills required for professional and technical Spanish/English translation.

**Prerequisites:** SPAN 409.

**SPAN 515 - Introduction to Spanish Linguistics (3 Credits)**

Phonology, morphology, and syntax of modern Spanish.

**Prerequisites:** SPAN 303, Phase II placement exam above SPAN 303.

**SPAN 516 - The Structure of Modern Spanish (3 Credits)**

Description of the grammatical structures of Modern Spanish. Intensive study of the theory and practice of word formation and sentence structure of Spanish.

**Cross-listed course:** LING 554

**SPAN 517 - Contrastive English-Spanish Phonetics and Phonology (3 Credits)**

Introduction to the study of phonetics and phonology and their application to the sounds and sound systems of English and Spanish. Includes transcription practice and discussion of relevance to teaching.

**Cross-listed course:** LING 514

**SPAN 518 - Introduction to Spanish Medieval Literature (3 Credits)**

Survey of Spanish literature from its first manifestations to La Celestina. Introduction; early works; the epic; 13th- through 15th-century prose and verse; Berceo, Alfonso X, Juan Ruiz, Marques de Santillana; others.

**Prerequisites:** SPAN 312 for undergraduates.

**SPAN 524 - Renaissance and Golden Age Literature (3 Credits)**

Survey of the works of Garcilaso, the Spanish mystics, Lope, Quevedo, Tirso, Calderon, Gongora and others.

**Prerequisites:** SPAN 312 for undergraduates.

**SPAN 534 - Nineteenth-Century Spanish Literature (3 Credits)**

Survey of the works of the major literary figures of the period.

**Prerequisites:** SPAN 312 for undergraduates.

**SPAN 538 - Twentieth-Century Spanish Literature (3 Credits)**

Survey of major peninsular writers from the Generation of '98 to the present.

**Prerequisites:** SPAN 312 for Undergraduates.

**SPAN 541 - Colonial Spanish-American Literature to Neoclassicism (3 Credits)**

Survey of pre-Columbian poetry and of texts dating from the time of Columbus to the end of the Colonial period.

**Cross-listed course:** LASP 541

**SPAN 543 - Spanish-American Literature from the Independence Through Modernism (3 Credits)**

Survey of the most significant works of the Independence through Modernism.

**Prerequisites:** SPAN 312 for Undergraduates.

**SPAN 550 - Advanced Language Study Abroad (3 Credits)**

Intensive language practice in native environment with special emphasis on oral skills. Instruction by native speakers; extensive community contact and home stay. Prior placement test required.

**SPAN 555 - Spanish-American Literature from Modernism Through 1960 (3 Credits)**

Survey of the most significant works of this period.

**Prerequisites:** SPAN 312 for undergraduates.

**SPAN 557 - Contemporary Spanish-American Literature (3 Credits)**

Survey of the most significant works from 1960 to the present.

**Cross-listed course:** LASP 471

**SPAN 575 - Special Topics in Spanish (3 Credits)**

Course content varies and will be announced in the schedule of classes by title. May be repeated as content varies by title.

**Prerequisites:** D or better in SPAN 312 or graduate standing.

**SPAN 615 - Intensive Readings in Spanish (3 Credits)**

Intensive reading for non-majors. Graduate students fulfill their foreign-language requirement with successful completion of the course.

Undergraduates may take the course as an elective only by permission.

**SPAN 700 - Introduction to Graduate Studies in Languages, Literatures, and Cultures (3 Credits)**

An introduction to graduate studies that includes a survey of contemporary literary theory, an overview of the current state of the profession, and instruction in how to carry out research and write at the graduate level.

**Cross-listed course:** CPLT 700, FREN 700, GERM 700

**SPAN 711 - Introduction to Literary Theory and Criticism (3 Credits)**

Overview of the main theories and methods in analyzing Spanish and Spanish-American literature.

**SPAN 715 - History of the Spanish Language (3 Credits)**

Development of the language from its origins to the present day.

**Cross-listed course:** LING 734

**SPAN 722 - Cervantes (3 Credits)**

Selected topics from among the works of Cervantes, including Don Quixote, the Galatea, the Persiles, the Novelas ejemplares, and his dramatic works.

**SPAN 724 - Renaissance and Baroque Poetry and Drama (3 Credits)**

In-depth study of the works of Lope de Vega, Quevedo, Góngora, Calderón, and others.

**SPAN 730 - Contemporary Spanish Prose Fiction (3 Credits)**

Emphasis on the post-Spanish Civil War narrative.

**SPAN 732 - Nineteenth-Century Spanish Prose and Poetry (3 Credits)**

Intensive reading of major works of Spanish Romanticism and Realism.

**SPAN 733 - Trans-Atlantic Perspectives (3 Credits)**

An exploration of the Inter-connection between Spain and the Americas including issues relating to processes of articulation and assimilation between the Spanish legacy and America's cultures, together with the African dimensions.

**SPAN 734 - Spanish Poetry: Generation of '27 (3 Credits)**

Intensive study of the works of Alberti, Aleixandre, Cernuda, Garc a Lorca, Guill n, Salinas and others.

**SPAN 736 - The Generation of 1898 (3 Credits)**

Essay, verse, drama, and fiction of the major writers of this generation.

**SPAN 745 - Seminar in Spanish-American Drama (3 Credits)**

Selected Spanish-American dramatic works from the colonial period to the present.

**SPAN 746 - Post-Baroque Spanish Drama (3 Credits)**

An application of major European stage theories to the Spanish modern stage (1800-2000).

**SPAN 747 - The Modern Spanish-American Novel (3 Credits)**

Seminar on selected Spanish-American novels from independence through the Hispanic Vanguard.

**SPAN 751 - Twentieth-Century Spanish-American Short Story (3 Credits)**

Seminar on selected Spanish-American novels from independence through the Hispanic Vanguard.

**SPAN 752 - Twentieth-Century Spanish Exile Literature (3 Credits)**

Study of the creative works written by high-profile Spanish writers while in exile (in Mexico, Puerto Rico, Argentina, and the United States) during the Spanish Civil War and ensuing Francoist regime.

**SPAN 763 - Contemporary Spanish-American Narrative (3 Credits)**

Study of the Spanish-American narrative of the 20th century (novel and short story).

**SPAN 765 - Contemporary Spanish-American Poets (3 Credits)**

The works of Vallejo, Mistral, Neruda, Borges, Cardenal, Paz, and others.

**SPAN 767 - Spanish-American Testimonial Literature (3 Credits)**

Study of texts revealing patterns of disenfranchisement and human rights violations. All genres, including films.

**SPAN 769 - Hispanic Women Writers (3 Credits)**

The works of significant women authors in Spain and Spanish America.

**SPAN 771 - Spanish-American Modernism (3 Credits)**

Study of the poetry and prose of the most significant authors of the late 19th and early 20th centuries.

**SPAN 775 - Seminars on Selected Topics in Foreign Language Education (3 Credits)**

Topics will be identified by title in the schedule of classes. Each topic may be taken only once.

**SPAN 776 - The Teaching of Foreign Languages in College (3 Credits)**

Basic principles of foreign language teaching in college combined with practical demonstrations Note: Required of all graduate assistants. This course will not count toward the 30-hour M.A. or M.A.T. requirements.

**SPAN 777 - Supervised Instruction in Teaching Foreign Languages in College (0 Credits)**

Supervised direction of foreign language teaching in college. Required of all graduate assistants who are teaching. This course will not count toward the 30-hour M.A. or M.A.T. degree.

**SPAN 780 - Seminars in Hispanic Literature (3 Credits)**

Topics to be announced each semester.

**SPAN 783 - Seminars on Selected Topics (1-3 Credits)**

Topics will be identified by title in the schedule of classes. Course can be repeated for credit for a maximum of 6 hours.

**SPAN 796 - Independent Study (1-3 Credits)**

Up to a maximum of 3 total hours, if repeated.

**SPAN 799 - Thesis Preparation (1-9 Credits)****SPAN 880 - Seminar on Special Topics in Transatlantic Studies (3 Credits)**

Topics will be identified by title in the schedule of classes. Course can be repeated for credit for a maximum of 6 hours.

**SPAN 881 - Seminar on Special Topics in Spanish-American Literatures and Cultures (3 Credits)**

Topics will be identified by title in the schedule of classes. Course can be repeated for credit for a maximum of 6 hours. Restricted to M.A. and Ph.D. students.

**SPAN 882 - Seminar on Special Topics in Peninsular Spanish Literature and Culture (3 Credits)**

Topics will be identified by title in the schedule of classes. Course can be repeated for credit for a maximum of 6 hours. Restricted to Graduate Students.

**SPAN 899 - Dissertation Preparation (1-12 Credits)**

Work on the research and writing of the Ph.D. dissertation.

## Comparative Literature, M.A.

### Learning Outcomes

- Students will demonstrate basic mastery of the history of literary theory.
- Students will demonstrate advanced linguistic competence in at least one foreign language.
- Students will demonstrate basic mastery of two literatures.
- Students will demonstrate an understanding of a broad literary culture.

### Admission for M.A. (and Concurrent M.A. and Ph.D.)

The following are guidelines, not minimums for acceptance. It is recognized that each student is unique, and applicants are considered on an individual basis. Applicants should have a minimum 3.00 GPA in their undergraduate major, evidence of work in literature, and a foreign language. They should have minimum GRE scores of 500/153 on the verbal section and 4 on the analytical section (or scores of 400/146 and 3.5, respectively, for non-native English speakers). An applicant whose native language is not English is required to submit a satisfactory score on the TOEFL or the IELTS Intl. Academic Course Type 2 exam. The minimum acceptable score on the TOEFL is 80 (iBT), or 570 (paper-based). The minimum acceptable overall band score on the IELTS Intl. Academic Course Type 2 exam is 6.5

### Application Procedure

- Students are invited to go to the Graduate School site (<http://www.gradschool.sc.edu/>) and apply online (<http://gradschool.sc.edu/prospective/apply-grad.asp?page=apply>). Paper applications are no longer available. All material should be sent to the graduate school in one packet. This material includes the following:
  - 3 letters of recommendation from instructors familiar with the student academic work, each sent in a sealed official envelope with the recommender's signature across the seal
  - an undergraduate transcript
  - a 250 word statement of purpose: explain the connection between USC's programs and your personal goals

- a writing sample (in the relevant language; English for non-natives of the English language) of between 1000 and 2500 words. This could be a paper written for an undergraduate course or an essay prepared specifically for the application.
- A five-minute sample of your spoken French, German, or Spanish is required of non-native speakers. Non-natives of English must also demonstrate proficiency in this language by a speech sample. The speech sample should be saved as an mp3 file on a CD.
- Applicants who wish to be considered for an assistantship must apply by January 15.
- Candidates who do not wish to request financial assistance should complete the application process no later than June 1.
- Applications submitted to the Department after June 1 will not be processed for the Fall semester but for the following Spring.

## Degree Requirements (33-36 Hours)

Candidates for the M.A. degree must take graduate-level literature courses in one foreign language and study at least two national literatures. The written portion of the M.A. comprehensive is identical to the Ph.D. qualifying exam. There is also an oral exam. Students will write a thesis on a topic chosen by them in conjunction with their committee and the graduate director. Additional information is available on the Web at <http://www.cas.sc.edu/dllc/Geninfo/grad-all.html>.

There is also an oral exam for students who do not continue on to the Ph.D.

### Comparative Literature (9 Hours)

Course	Title	Credits
CPLT 701	Classics of Western Literary Theory	3
CPLT 702	Modern Literary Theory	3
CPLT 703	Topics in Contemporary Literary Theory	3
<b>Total Credit Hours</b>		<b>9</b>

### First Literature (12 Hours)

Course	Title	Credits
Select four graduate courses		12
<b>Total Credit Hours</b>		<b>12</b>

### Second Literature (6 Hours)

Course	Title	Credits
Select two graduate courses		6
<b>Total Credit Hours</b>		<b>6</b>

### Thesis (6 Hours)

### Foreign Languages (3 Hours)

Required of all graduate teaching assistants.

Course	Title	Credits
FORL 776	The Teaching of Foreign Languages in College	3
<b>Total Credit Hours</b>		<b>3</b>

Note: Requests for further information should be addressed to:

Director  
Comparative Literature Program  
University of South Carolina

Columbia, SC 29208

## Comparative Literature, Ph.D.

### Learning Outcomes

- Students will demonstrate basic mastery of the history of literary theory.
- Students will develop advanced linguistic competence in at least one foreign language.
- Students will demonstrate reading competence in a second foreign language.
- Students will demonstrate a mastery of three literatures, or two literatures and one outside area.
- Students will demonstrate an understanding of a broad literary culture.
- Students will comprehensively evaluate previous scholarship in their field.
- Students will produce a piece of original research and write at a professional level.
- Students will analyze texts.
- Students will complete the PhD program in a timely manner, and will pursue tenure-track job placement as appropriate.

### Admission

Applicants should have a minimum 3.00 GPA in their undergraduate major and 3.50 GPA in graduate course work. They should have minimum GRE scores of 500/153 on the verbal section and 4 on the analytical section (or scores of 400/146 and 3.5, respectively, for non-native English speakers). An applicant whose native language is not English is required to submit a satisfactory score on the TOEFL or the IELTS Intl. Academic Course Type 2 exam. The minimum acceptable score on the TOEFL is 80 (iBT), or 570 (paper-based). The minimum acceptable overall band score on the IELTS Intl. Academic Course Type 2 exam is 6.5. Applicants are asked to submit a writing sample of 3,000 words and a statement of purpose (300 words maximum).

### Application Procedure

- Students are invited to go to the Graduate School site (<http://www.gradschool.sc.edu/>) and apply online (<http://gradschool.sc.edu/prospective/apply-grad.asp?page=apply>). Paper applications are no longer available. All material should be sent to the graduate school in one packet. This material includes the following:
  - 3 letters of recommendation from instructors familiar with the student academic work, each sent in a sealed official envelope with the recommender's signature across the seal
  - an undergraduate transcript
  - a 250 word statement of purpose: explain the connection between USC's programs and your personal goals
  - a writing sample (in the relevant language; English for non-natives of the English language) of between 1000 and 2500 words. This could be a paper written for an undergraduate course or an essay prepared specifically for the application.
- A five-minute sample of your spoken French, German, or Spanish is required of non-native speakers. Non-natives of English must also demonstrate proficiency in this language by a speech sample. The speech sample should be saved as an mp3 file on a CD.
- Applicants who wish to be considered for an assistantship must apply by **January 15**.



- Candidates who do not wish to request financial assistance should complete the application process no later than June 1.
- Applications submitted to the Department after June 1 will not be processed for the Fall semester but for the following Spring.

## Degree Requirements (30 Post-Masters Hours)

Candidates for the Ph.D. degree are required to take 63-66 graduate hours beyond the baccalaureate degree (30 - 33 graduate hours beyond the master's degree), including graduate-level course work in at least one foreign language, and demonstrate reading knowledge in two foreign languages. Each candidate must study three or more national literatures, although students may substitute an outside area for their third literature with the approval of the graduate director. Each student will pass a three-hour qualifying examination in two equal parts: an essay on literary theory and an explication of a passage in the student's first foreign literature. The comprehensive examination will consist of three two-hour written exams on each of three reading lists that the student will draw up in conjunction with the committee, followed by a one-hour oral exam. Students whose first literature is not English may write one of their essays in the language of that literature. Each student will write a dissertation on a topic chosen in conjunction with the committee and the graduate director.

### Comparative Literature (15 Hours)

5 graduate courses to include the following:

Course	Title	Credits
CPLT 701	Classics of Western Literary Theory	3
CPLT 702	Modern Literary Theory	3
CPLT 703	Topics in Contemporary Literary Theory	3
Select two more CPLT Graduate courses		6
<b>Total Credit Hours</b>		<b>15</b>

### Primary Literature (18 Hours)

Course	Title	Credits
Select six graduate courses		18
<b>Total Credit Hours</b>		<b>18</b>

### Second Literature (12 Hours)

Course	Title	Credits
Select four graduate courses		12
<b>Total Credit Hours</b>		<b>12</b>

### Third Literature (6 Hours)

Course	Title	Credits
Select two graduate courses		6
<b>Total Credit Hours</b>		<b>6</b>

### Foreign Languages (3 Hours)

Required of all graduate teaching assistants.

Course	Title	Credits
FORL 776	The Teaching of Foreign Languages in College	3
<b>Total Credit Hours</b>		<b>3</b>

## Dissertation (12 Hours)

Note: Requests for further information should be addressed to:

Director  
Comparative Literature Program  
University of South Carolina  
Columbia, SC 29208

## French, M.A.

### Learning Outcomes

- Students will analyze and discuss texts in French, both orally and in writing.
- Students will evaluate previous scholarship on French and/or Francophone literary and cultural expression.
- Students will demonstrate the ability to read competently in a second language.

### Admission

Admission requirements include complete transcripts from all post-secondary institutions, three letters of recommendation, satisfactory GRE scores (described below), and an undergraduate major (or its equivalent) in French (for candidates who hold an undergraduate degree from a North American institution). They should have minimum GRE scores of 500/153 on the verbal section and 4 on the analytical section (or scores of 400/146 and 3.5, respectively, for non-native English speakers). Applicants to the interdisciplinary M.A.T. program may present a minimum score of 396 on the Miller Analogies Test in lieu of GRE scores. Candidates should have a minimum overall GPA of 2.75, with a minimum GPA of 3.00 in French. An applicant whose native language is not English is required to submit a satisfactory score on the TOEFL or the IELTS Intl. Academic Course Type 2 exam. The minimum acceptable score on the TOEFL is 80 (iBT), or 570 (paper-based). The minimum acceptable overall band score on the IELTS Intl. Academic Course Type 2 exam is 6.5.

Three letters of recommendation from previous French instructors are required for inclusion in the candidate's application. Applicants are asked to submit a writing sample of 3,000 words, written in French (written in English for students whose native language is French), and a statement of purpose (300 words maximum) written in English. In order to test French speaking skills, a five-minute sample of spoken French is also required of non-native speakers. The file should be saved as an MP3 file on a CD.

Applicants who wish to be considered for an assistantship must apply by **January 15**.

Applications submitted to the Department after June 1 will not be processed for the Fall semester but for the following Spring.

In order to pursue the Master of Arts in French, candidates may be required to make up such deficiencies as may be shown by a diagnostic examination. The department reserves the right to require its degree candidates to audit or enroll in undergraduate courses when this appears to be advisable.

## Degree Requirements (33 Hours)

The M.A. (languages, literatures, and cultures option) requires, in addition to course work, a written and oral comprehensive examination based on a reading list; demonstration of a reading knowledge in a second foreign language. Candidates who elect to write an M.A. thesis will take

27 semester hours of course work, at least 18 of which must be taken in 700-level or above courses. In addition, they will submit a thesis (6 hours of FREN 799) and will present a final oral defense of the thesis.

Candidates who elect to replace the M.A. thesis with extra course work must complete 33 hours of graduate-level courses (of which at least 24 must be at the 700 level or above), and they must submit a substantial research project, typically a revised and expanded version of a paper written for one of the M.A. courses.

Candidates, except for those minoring in linguistics, must take FREN 516 and FREN 517.

FORL 776 (3 hours) is required of all graduate teaching assistants.

The M.A. (language instruction option) is designed for college graduates who already hold a professional teaching certificate in French and who wish to earn a master's degree adapted to the needs of teachers. The M.A. (language instruction option) requires reading knowledge of a second foreign language; 33 hours of graduate-level course work (of which at least half must be at the 700 level or above), with 21 hours in French (including FREN 700), 9 hours in professional education, and 3 hours of elective credit in a course that addresses current issues and concerns of teachers; and successful completion of a comprehensive written and oral examination based on a reading list.

## German, M.A.

### Learning Outcomes

- Students will demonstrate basic mastery of the literature, culture, and intellectual traditions of the German speaking countries.
- Students will demonstrate basic mastery of literary and cultural theory and research methods.
- Students will demonstrate near-native competence in the German language, both orally and written.
- Students will demonstrate familiarity with the history and structure of the German language.
- Students will demonstrate knowledge of a second language sufficient for reading and research purposes.
- Graduate teaching assistants will demonstrate applied and theoretical knowledge of second language acquisition as part of their professional development.

### Admission

Generally, applicants should have minimum GRE scores of 500/153 on the verbal section and 4 on the analytical section (or scores of 400/146 and 3.5, respectively, for non-native English speakers). A minimum score of 396 on the Miller Analogies Test may be submitted in lieu of GRE scores for the M.A.T. An applicant whose native language is not English is required to submit a satisfactory score on the TOEFL or the IELTS Intl. Academic Course Type 2 exam. The minimum acceptable score on the TOEFL is 80 (iBT), or 570 (paper-based). The minimum acceptable overall band score on the IELTS Intl. Academic Course Type 2 exam is 6.5.

Three letters of recommendation from previous German instructors are required for inclusion in the candidate's application. Applicants are asked to submit a writing sample of 3,000 words, written in German (written in English for students whose native language is German), and a statement of purpose (300 words maximum). In order to test German speaking

skills, a five-minute sample of spoken German is also required of non-native speakers. The file should be saved as an MP3 file on a CD.

Applicants who wish to be considered for an assistantship must apply by **January 15**.

Applications submitted to the Department after June 1 will not be processed for the Fall semester but for the following Spring.

In order to pursue the Master of Arts in German, candidates may be required to make up any such deficiencies demonstrated on a diagnostic examination. The background required in any foreign language is that normally completed by an undergraduate major in the field concerned. The department reserves the right to require its candidates for the degree of Master of Arts to take special examinations on any undergraduate courses when advisable.

### Degree Requirements (33 Hours)

The three basic requirements for the degree of Master of Arts in German consist of: 33 semester hours of course work, a written and oral comprehensive examination, and demonstration of a reading knowledge in a second foreign language. Students who write a thesis must take a total of 33 semester hours, of which no more than 6 may be thesis credits (GERM 799) and at least 18 must be in non-thesis 700 level courses; there is a final oral examination for students who write a thesis. Students who do not write a thesis must submit an enhanced seminar paper; they are required to take a total of 33 semester hours of course work, at least 24 of which must be in 700-level courses.

FORL 776 (3 hours) is required of all graduate teaching assistants.

The final draft of the thesis signed by the professors concerned must be filed with The Graduate School not less than 20 days before the end of the final semester. GERM 799 may be included as part of the Master of Arts programs in the department.

## Spanish, M.A.

### Learning Outcomes

- Students will demonstrate advanced, graduate-level Spanish language competence in the courses they take at both the 500- and 700-level. In these courses both oral and written skills are measured. Students are required to present orally research on a topic and engage other students in class discussion. Additionally, they will further demonstrate these skills by passing a comprehensive examination that is given in Spanish. Those students who choose to write a thesis in Spanish (language in which it is written is left to the discretion of the thesis director and the student) will demonstrate graduate-level Spanish language competence. Those students who take the non-thesis option will demonstrate graduate-level Spanish language competence by submitting a paper from one of the additional language courses they choose.
- Students will produce original research which will demonstrate their use of appropriate graduate-level discourse in Spanish pertinent to the topic at hand.
- Students will demonstrate their understanding of the mechanics of the Spanish language (phonetics, structure, relations to other languages, and linguistic/regional variations) by conducting research and interviews and by participating in classroom discussions and presentations on related topics.

- Students will demonstrate reading knowledge in an additional foreign language.

## Admission

To be accepted into the M.A. and M.A.T. programs in Spanish, candidates must hold a B.A. degree in Spanish from an accredited college or university. Graduates of foreign university programs where Spanish is the official language may be able, with permission of the graduate director, to substitute this experience for a Spanish major. A minimum overall GPA of 2.75 on a 4.00 scale indicates candidates possess the capability to pursue graduate studies in Hispanic languages, literatures, and cultures. This is demonstrated by means of official college or university transcripts to be forwarded to this University. Also, three letters of recommendation from previous Spanish instructors are required for inclusion in the candidate's application.

In order to pursue the Master of Arts in Spanish, the candidate should have minimum GRE scores of 500/153 on the verbal section and 4 on the analytical section (or scores of 400/146 and 3.5, respectively, for non-native English speakers). A minimum score of 396 on the Miller Analogies Test may be submitted in lieu of GRE scores for the M.A.T. An applicant whose native language is not English is required to submit a satisfactory score on the TOEFL or the IELTS Intl. Academic Course Type 2 exam. The minimum acceptable score on the TOEFL is 80 (iBT), 230 (computer-based) or 570 (paper-based). The minimum acceptable overall band score on the IELTS Intl. Academic Course Type 2 exam is 6.5.

Three letters of recommendation from previous Spanish instructors are required for inclusion in the candidate's application. Applicants are asked to submit a writing sample of 2500 words, written in Spanish (in English for those students whose native language is Spanish), and 300 word maximum statement of purpose. In order to test Spanish speaking skills, a five-minute sample of spoken Spanish is also required of non-native speakers. The file should be saved as an MP3 file on a CD. For those who native language is Spanish, a sample of spoken English is required submitted in the same format.

In order to pursue the Master of Arts in Spanish, candidates may be required to make up any such deficiencies demonstrated on a diagnostic examination. The background required in any foreign language is that normally completed by an undergraduate major in the field concerned. The Department reserves the right to require its candidates for the degree of Master of Arts to take special examination on any undergraduate courses when advisable.

If a prospective student is seeking a departmental assistantship, all application materials as indicated above must be received by the Graduate School and the Dept. of Languages, Literatures and Cultures by January 15. Applications submitted to the Department after June 1 will not be processed for the Fall semester but for the following Spring.

## Degree Requirements (30 Hours)

The following requirements are specific to the degree programs in Spanish.

### Spanish, M.A. Thesis Option

To receive the M.A. in Spanish (thesis option), a student must complete the following:

### Graduate Coursework in Spanish (30 Hours)

Course	Title	Credits
SPAN 515	Introduction to Spanish Linguistics	3
SPAN 700	Introduction to Graduate Studies in Languages, Literatures, and Cultures	3
<b>Total Credit Hours</b>		<b>6</b>

Note: With permission of the graduate director, one graduate course in another foreign language, linguistics, comparative literature, or women's and gender studies may be taken as a cognate.

### Reading Knowledge of a Second Language

Demonstrate a reading knowledge of a second language by passing the exam administered in the foreign language 615 courses.

### Advanced Oral and Written Knowledge of Spanish

Demonstrate both oral and written control of Spanish at the advanced level.

### Comprehensive Examination

Successfully complete a comprehensive examination.

### Thesis

Present and successfully defend an M.A. thesis.

### Spanish, M.A. Non-Thesis Option

To receive the M.A. in Spanish (non-thesis option), a student must complete the following:

### Graduate Coursework in Spanish (30 Hours)

Course	Title	Credits
SPAN 515	Introduction to Spanish Linguistics	3
SPAN 700	Introduction to Graduate Studies in Languages, Literatures, and Cultures	3
SPAN 715	History of the Spanish Language	3
<b>Total Credit Hours</b>		<b>9</b>

### Reading Knowledge of a Second Language

Demonstrate a reading knowledge of a second language by passing the exam administered in the foreign language 615 courses.

### Advanced Oral and Written Knowledge of Spanish

Demonstrate both oral and written control of Spanish at the advanced level.

### Comprehensive Examination

Successfully complete a comprehensive examination.

## Graduate Teaching Assistants

The following is required for all graduate teaching assistants:

Course	Title	Credits
FORL 776	The Teaching of Foreign Languages in College	3
<b>Total Credit Hours</b>		<b>3</b>

## Spanish, Ph.D.

### Learning Outcomes

- Students will demonstrate near-native linguistic competence in Spanish as it pertains to all graduate courses (including all examinations) that are part of the Program of Study.
- Students will produce original research on the literature and cultures of Spain, Latin America and the Hispanic cultures around the world, both orally and in writing at a near-native level of stylistic, critical and theoretical discourse.
- Students will conduct research and produce original scholarship within a specific theoretical and critical framework.
- Doctoral Candidates will present original papers at conferences (and eventually submit their scholarship for publication), submit manuscripts for future publication, and be encouraged to write pertinent grant proposals.

## Admission

To be admitted to the Ph.D. program in Spanish, candidates typically have an M.A. in Spanish or related fields. A total of 30 credit hours may be approved toward the doctoral program. The Graduate Advisor in Spanish is responsible for the approval of the credit hours and for designing individual programs of study.

Students with an M.A. in a related field may need to take a Proficiency Test to show verbal, written and reading skills in Spanish. Exceptions may be considered when the student's first language is Spanish.

Students who desire to pursue the Ph.D. in Spanish may enroll concurrently in the M.A. program in Spanish. In order to be admitted to the doctoral program, they must pass a Qualifying Examination during their third semester of M.A. work.

## Degree Requirements (33-36 Post-Masters Hours)

Beyond the B.A., candidates for the Ph.D. are required to take 66-69 graduate hours. They must demonstrate a reading knowledge in one other language. This requirement may be satisfied by coursework in another program of the DLLC (with such courses not included in the total number of required credit hours of approved doctoral work). Each doctoral candidate must take 24 credit hours of approved coursework, and 12 hours of Dissertation preparation (beyond the M.A.). With the approval of the Graduate (Academic) Advisor, student may substitute 6 credit hours of graduate course work in another area related to their field of study. Each student will pass a six hour Comprehensive Examination, and present any analytical commentary of a text in the student's major area of concentration. There will be an oral exam (to be given within two weeks after successfully passing the written exams). A Comprehensive Examination Committee will design questions based upon reading lists pertinent to all parts of the Examination. Each student will write a dissertation on a topic which will be chosen in consultation with the Dissertation Committee and the Graduate Advisor in Spanish.

### Students Admitted with a B.A.

Students with a B.A. and who are admitted to the doctoral program should complete 54 hours of graduate coursework, and 12 additional credit hours of the following:

Course	Title	Credits
SPAN 899	Dissertation Preparation	12
<b>Total Credit Hours</b>		<b>12</b>

### Students Admitted with an M.A.

Students who have not completed the following courses (or equivalents) as part of the M.A. degree must complete the following:

Course	Title	Credits
SPAN 700	Introduction to Graduate Studies in Languages, Literatures, and Cultures	3
SPAN 711	Introduction to Literary Theory and Criticism	3
SPAN 715	History of the Spanish Language	3
<b>Total Credit Hours</b>		<b>9</b>

### Graduate Teaching Assistants

The following is required of all graduate teaching assistants:

Course	Title	Credits
FORL 776	The Teaching of Foreign Languages in College	3
<b>Total Credit Hours</b>		<b>3</b>

Note: Students who have completed similar courses during their M.A. training at another institution will be exempt from this course.

### Dissertation Requirement

In order to obtain the Ph.D. in Spanish, candidates should write a Dissertation that makes a relevant contribution to current scholarship in their chosen field. The candidate must designate as Doctoral Advisor a Graduate Faculty member of the Spanish program.

The proposal for the Dissertation and the composition of the Dissertation Committee should be endorsed by the Doctoral Advisor and approved by the Graduate Advisor in Spanish. A Prospectus will be presented and defended (after passing the Comprehensive Examination and no later than two semesters thereafter).

## Linguistics

Department Website (<http://www.cas.sc.edu/ling/>)

Mila Tasseva-Kurktchieva, *Director*

Elaine Chun, *Graduate Director*

Linguistics at South Carolina has an interdisciplinary focus, while providing our graduate students with a strong background in linguistics theory. Students are trained to pursue research and teach in a wide range of linguistic sub-disciplines. The program affords students the opportunity to take coursework or pursue specializations in areas such as English/French/German/Spanish linguistics, historical linguistics, linguistic anthropology, philosophy of language, phonology, psycholinguistics, second/foreign language acquisition and teaching, semantics, sociolinguistics and syntax.

The Linguistics program collaborates with departments including Anthropology; English Language and Literature; Languages, Literatures, and Cultures; Philosophy; Psychology; the English Programs for Internationals; Communication Sciences and Disorders; Computer Science and Engineering; and Education. We are committed to building bridges with many disciplines and to illuminating the important role of language and the study of language in all aspects of our lives.

The Program offers an M.A. and Ph.D. degrees in Linguistics, as well as a Certificate of Graduate Studies in Teaching English as a Second Language (TESOL).

## Programs

- Linguistics, M.A. (p. 88)
- Linguistics, Ph.D. (p. 90)
- Teaching English to Speakers of Other Languages, Certificate (p. 91)

## Courses

### LING 502 - French Linguistics (3 Credits)

The structure, morphology, and syntax of modern French.

**Cross-listed course:** FREN 517

### LING 503 - Introduction to German Linguistics (3 Credits)

Structural and descriptive linguistics applied to the German language.

**Cross-listed course:** GERM 515

### LING 504 - Introduction to Spanish Linguistic (3 Credits)

Phonology, morphology, and syntax of modern Spanish.

### LING 505 - Interdisciplinary Topics in Linguistics (3 Credits)

Topics selected by the instructor for specialized study. Course content varies and will be announced in the schedule of classes title. May be repeated with different title.

### LING 512 - French Phonology (3 Credits)

The sound system and its functioning in the morphological system of French from the point of view of current phonological theory.

**Cross-listed course:** FREN 516

### LING 514 - Contrastive English-Spanish Phonetics and Phonology (3 Credits)

Introduction to the study of phonetics and phonology and their application to the sounds and sound systems of English and Spanish. Includes transcription practice and discussion of relevance to teaching.

**Cross-listed course:** SPAN 517

### LING 521 - Advanced English Grammar (3 Credits)

Practical survey of the syntactic structures of English; usage, social and regional variation emphasis on data.

**Prerequisites:** LING 421/ENGL 450 or LING 600/ENGL 680.

### LING 527 - Introduction to Mathematical Methods in Linguistics (3 Credits)

Introduction to mathematical mechanisms that play a prominent role in the formalization of syntactic and semantic theories, showing how they are applied to an understanding of the working parts of human language. The topics covered include: set theory, logic, English as a formal language, and languages & grammars.

### LING 530 - Language Change (3 Credits)

Major ways in which phonetics, phonology, syntax, morphology, and semantics change through language history; social factors which promote innovation.

### LING 533 - Introduction to the Germanic Languages (3 Credits)

Introduction to historical Germanic linguistics including a survey of the Old Germanic languages (Old English, Old Frisian, Old Saxon, Old High German, Old Norse, Gothic); comparative phonology, morphology, and syntax, typology of modern Germanic languages and dialects; and common Germanic in its Indo-European context.

**Cross-listed course:** GERM 517

### LING 540 - Topics in Language and Culture (3 Credits)

Introduction to sociolinguistic issues, focusing on a single language.

Course content varies and will be announced by title. May be repeated twice as topics vary.

### LING 541 - Language and Gender (3 Credits)

Approaches to gender and language emphasizing the social grounding of both; how language reflects sociocultural values and is a tool for constructing different types of social organization.

**Cross-listed course:** ANTH 555, WGST 555

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy, GLD: Professional and Civic Engagement Leadership Experiences

### LING 542 - Research in Language Conflict and Language Rights (3 Credits)

Research into the parameters governing linguistic conflicts and language rights issues, involving a close examination of the nexes of language and: individual and ethnic identity, culture, dialects, bilingualism. Examination of regional, national, and international case studies, with particular attention to nationalism, language revitalization, and language planning.

**Cross-listed course:** POLI 542

### LING 543 - Discourse, Gender, and Politics of Emotion (3 Credits)

Anthropological approach to issues of discourse, gender, and emotion. Issues under consideration include the social control, force, and forms of emotional discourse and the relationship between emotion and culture from gender-oriented perspectives.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

### LING 545 - Anthropological Approaches to Narrative and Performance (3 Credits)

The ways people from various cultures reflect on, reinforce, and construct their social realities through narrating, which will be considered as both artistic expression and social action.

**Cross-listed course:** ANTH 553

### LING 546 - Japanese Language in Society (3 Credits)

Japanese language and communication in its socio-cultural context; emphasis on comparison with American English. Taught in English.

**Cross-listed course:** JAPA 500

### LING 548 - German Sociolinguistics (3 Credits)

Introduction to the study of variation in Modern German. Traditional German dialectology and dialect geography, language and society, multilingualism in the German-speaking countries, German in contact with other languages.

**Cross-listed course:** GERM 518

### LING 554 - The Structure of Modern Spanish (3 Credits)

Description of the grammatical structures of Modern Spanish. Intensive study of the theory and practice of word formation and sentence structure of Spanish.

**Cross-listed course:** SPAN 516

### LING 556 - Language and Globalization (3 Credits)

Anthropological approach to issues of language and globalization. Linguistic consequences of globalization under consideration include communicative patterns, linguistic change, and language and political economy.

**Cross-listed course:** ANTH 556

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy, GLD: Global Learning, GLD: Professional and Civic Engagement Leadership Experiences

**LING 565 - Philosophy of Language (3 Credits)**

An examination of concepts and problems such as meaning, reference, analyticity, definition, and the relation between logic and philosophy.

**Prerequisites:** PHIL 202.

**Cross-listed course:** PHIL 517

**LING 567 - Psychology of Language (3 Credits)**

Theories of speech perception, linguistic theories of syntax and semantics, the brain mechanisms underlying language, the development of language in children, and the role of language in thought.

**Cross-listed course:** PSYC 506

**LING 570 - Introduction to Language Development (3 Credits)**

The language acquisition process in normal children, including the development of semantics, morphology, syntax, phonology, and pragmatics; American dialects and bilingualism.

**Prerequisites:** COMD 501 and COMD 507.

**Cross-listed course:** COMD 570

**LING 600 - Survey of Linguistics (3 Credits)**

Survey of core areas of linguistics and extensions to closely related disciplines. Introduction to the linguistic component of human cognition. Formal description and analysis of the general properties of speech and language, the organization of language in the mind/brain, and cross-linguistic typology and universals.

**Cross-listed course:** ANTH 600, ENGL 680

**LING 627 - Introduction to Semantics and Pragmatics (3 Credits)**

An introduction to the study of linguistic meaning, including the following topics: meaning, reference, and truth; the connections among language, thought, and reality; word meaning and sentence meaning; possible worlds and modality; thematic roles; meaning and context; presupposition and implicature; speech acts; formal semantics; and cognitive semantics.

**Prerequisites:** LING 300, LING 301, or LING 600.

**LING 650 - Introduction to Morphology (3 Credits)**

Foundations of generative morphology, focusing on morphological data collection and analysis; the structure of the lexicon; and the interfaces between morphology and phonology, semantics, and syntax.

**Prerequisites:** LING 300, LING 301, or LING 600.

**LING 701 - Quantitative Approaches to Linguistic Analysis (3 Credits)**

Description, visualization, and basic statistical analysis of both discrete and continuous linguistic data from various linguistic subfields using R.

**LING 710 - Introduction to Phonology (3 Credits)**

The phonetic basis of phonology; phonological structure; lexical representation; cross-linguistic survey of major types of phonological processes; emphasis on data analysis.

**Prerequisites:** LING 600.

**LING 711 - Phonological Theory (3 Credits)**

Advanced study of theoretical issues in phonology.

**Prerequisites:** LING 600 and LING 710.

**LING 712 - Articulatory and Acoustic Phonetics (3 Credits)**

Physical and anatomical mechanisms for producing speech, phonetic representations and models of speech perception and prosody, acoustic characteristics of the speech signal, use of international phonetic alphabet symbols (IPA) to describe speech sounds in the world's languages, training in experimental and field methods in phonetic research.

**Prerequisites:** LING 600.

**LING 720 - Introduction to Syntax (3 Credits)**

Foundations of generative grammar, focusing on the syntax of English; universal principles of basic clause structure and derived constructions; emphasis on syntactic argumentation and cross-linguistic generalization.

**Prerequisites:** LING 600.

**LING 721 - Syntactic Theory (3 Credits)**

Advanced exploration of a principled model of the syntactic component of universal grammar and the interface between this module and semantic interpretations and lexical information. Competing hypotheses are compared.

**Prerequisites:** LING 600 and LING 720.

**LING 728 - Semantic Theory (3 Credits)**

The formal study of linguistic meaning, including the following topics: Fregean truth-conditional semantics; lexical decomposition; predication and modification; lambda abstraction; generalized quantification; intentional and extensional contexts; tense, aspect, and modality; propositional attitudes; and indexicality.

**Prerequisites:** LING 600 or LING 627.

**Cross-listed course:** PHIL 719

**LING 729 - Pragmatic Theory (3 Credits)**

Study of formal approaches to pragmatic phenomena such as focus, presupposition, and implicature; examination of deictic, contextual and perspectival expressions; survey of pragmatic frameworks such as Relevance Theory and Discourse Representation Theory; study of information structural properties of natural languages, including topic-comment structure, given-new contrasts, definiteness versus indefiniteness.

**Prerequisites:** LING 600 or LING 627.

**Cross-listed course:** PHIL 717

**LING 730 - Historical Linguistics (3 Credits)**

Innovation in phonology, morphology, syntax, and semantics; evidence from texts, social and regional dialects; emphasis on theories of language change.

**Prerequisites:** LING 600 and LING 610.

**LING 731 - History of English Language (3 Credits)**

The historical background of Modern English with attention to the major linguistic and cultural developments which distinguish English from other related languages. No prior knowledge of Old English or Middle English is required.

**Cross-listed course:** ENGL 781

**LING 732 - History of the French Language (3 Credits)**

Development of the French language from its origins to 1600.

**Cross-listed course:** FREN 715

**LING 733 - History of the German Language (3 Credits)**

Development of German in the Germanic, Old High German, Middle High German, and New High German periods. Phonology, morphology, syntax, semantics, and the relationship between dialects and the standard language.

**Cross-listed course:** GERM 516

**LING 734 - History of the Spanish Language (3 Credits)**

Development of the language from its origins to the present day.

**Cross-listed course:** SPAN 715

**LING 739 - The Evolution of Linguistic Theory, Practice, and Methods (3 Credits)**

Introduces basic resources of discipline and focuses on the development of linguistics in terms of dominant issues and analytical methodology with emphasis on paradigm shifts.

**Prerequisites:** LING 600, LING 610, LING 620.

**LING 740 - Introduction to Sociolinguistics (3 Credits)**

An examination of choices speakers in the same community make between styles, dialects, and languages; their association with social group memberships; speakers' perceptions of interpersonal relationships.

**Prerequisite or Corequisite:** LING 600.

**LING 741 - African American English (3 Credits)**

Linguistic approaches to the history, structure, and use of African American English.

**LING 742 - Language and Race (3 Credits)**

Sociolinguistic examination of the relationship between language and race, including ethnolects, identity construction, linguistic appropriation, linguistic racism, and antiracism in everyday and institutional contexts.

**LING 743 - Analysis of Conversation (3 Credits)**

Types of interactive organization found within conversation and the methods and procedures used by participants to achieve order.

**Cross-listed course:** ANTH 756

**LING 744 - Language Contact Phenomena (3 Credits)**

The structural effects of contact between speakers of more than one language on the language involved. Borrowing, code-switching, convergence, language death, development of pidgins and creoles.

**Prerequisites:** LING 600.

**LING 745 - Varieties of American English (3 Credits)**

Social and regional variation in American English since the colonial period.

**Cross-listed course:** ENGL 782

**LING 746 - Sociophonetics (3 Credits)**

The intersection between variation in phonetic/phonological form and social factors (such as a speaker's region, age, group identity, ethnic background, sexual orientation, level of education, etc.), acoustic production of variation, effects of sociophonetic variation on speech perception, on language change, and on language acquisition.

**LING 747 - Language as Social Action (3 Credits)**

Examines language as a social, cultural, and political matrix. Topics include ideology, gender, race, power, agency, and resistance. Students will apply linguistic theories in their own analyses of everyday speech.

**Cross-listed course:** ANTH 747

**LING 748 - Introduction to Linguistic Anthropology (3 Credits)**

A comprehensive introduction to linguistic anthropology, its relationship(s) to sociolinguistics, discourse analysis, and conversation analysis. Contributions made to social theory and theories of language and discourse will be understood.

**Prerequisites:** LING 600.

**Cross-listed course:** ANTH 748

**LING 765 - Studies in Philosophy of Language (3 Credits)**

Examination of concepts such as meaning, reference, analyticity, and translational indeterminacy; evaluation of accounts of speech acts, the semantics of propositional attitudes, and metaphor and other pragmatic phenomena.

**Cross-listed course:** PHIL 718

**LING 772 - Technology in Foreign Language Education (3 Credits)**

Introduction to technology in language teaching and the connection between language acquisition and the implementation of Internet and multimedia technology.

**Cross-listed course:** EDTE 772, FORL 772

**LING 780 - Discourse Analysis (3 Credits)**

Underlying principles of how phonological, syntactic, and lexical features are organized above the sentence level; alternative choices of these features and how they contribute to the speaker's/writer's goals.

**Prerequisites:** LING 600.

**LING 782 - Language Ideology: The Political Economy of Language Beliefs and Practices (3 Credits)**

Linguistic anthropological approaches that examine how ideological systems mediate social structures and linguistic /discursive forms and functions. Topics range from language and political economy, identity and identifications, institutions, and nation-building/nationalism.

**Cross-listed course:** ANTH 782

**LING 790 - Second Language Acquisition (3 Credits)**

Study of current theory and research in second language acquisition and exploration of relationships between such work and classroom second language learning and teaching. Examination of research techniques used in applied linguistics.

**Prerequisite or Corequisite:** LING 600.

**LING 791 - Theory and Methodology in Second Language Acquisition (3 Credits)**

Current issues and research in adult second language acquisition, with special attention to developments in theory and to methodological issues and considerations.

**Prerequisites:** LING 600, LING 790.

**LING 792 - Principles of Instructed Second Language Acquisition and Foreign Language Teaching (3 Credits)**

An analysis of instructed second language acquisition (SLA). This course explores the historical development and up-to-date findings in foreign/ second language research and applies that knowledge to classroom teaching methods. Students will be expected to conduct empirical investigation.

**Prerequisites:** FORL 511 or LING 790.

**Cross-listed course:** FORL 730

**LING 795 - Principles and Strategies for Teaching ESOL (3 Credits)**

Survey of teaching ESOL, including theoretical principles and practical strategies for approaches, methods, techniques, and materials as they concern elementary, secondary, and postsecondary learners.

**LING 796 - Teaching Reading and Writing to ESOL Learners: Theory and Practice (3 Credits)**

This course surveys research on the mental processes and linguistic contexts involved in reading and writing in a second language. Pedagogical implications for elementary, secondary, and postsecondary learners are discussed.

**Cross-listed course:** EDRD 796

**LING 798 - Practicum in Teaching ESOL (3 Credits)**

Observation and supervised teaching of English to speakers of other languages in an individually designed classroom setting. Course may be taken up to 3 times.

**Prerequisites:** LING 600, LING 795.

**LING 799 - Thesis Preparation (1-9 Credits)**

**LING 805 - Topics in Linguistics (3 Credits)**

Topics selected by the instructor for specialized study. May be repeated as topics vary.

**LING 806 - Directed Reading and Research (1-3 Credits)****LING 820 - Seminar in Syntax (3 Credits)**

Advanced exploration in syntactic theory, involving either cross-theoretical examination of specific linguistic phenomena or in-depth study of a particular theoretical model.

**LING 830 - Seminar in Historical Linguistics (3 Credits)**

Special topics in historical and comparative linguistics, such as historical phonology or syntax, Indo-European linguistics, and comparative Germanic or Romance linguistics.

**LING 840 - Seminar in Language Variation (3 Credits)**

Current theories relevant to specialized consideration of the social functions of linguistic choices at any level of analysis; variation as a reflection of region and social group membership or interpersonal relationships.

**LING 890 - Seminar in Language Acquisition (3 Credits)**

Special topics in the acquisition of language such as first language acquisition of English or other languages, cross-linguistic effects on acquisition, or issues in acquisition theory.

**LING 891 - Seminar in English for Speakers of Other Languages (ESOL) (3 Credits)**

Special topics in teaching English to speakers of other languages (ESOL), such as materials design, program design and evaluation, or teaching a particular language skill.

**LING 899 - Dissertation Preparation (1-12 Credits)**

## Linguistics, M.A.

The M.A. in Linguistics at UofSC is a degree in general linguistics. Our M.A. program is designed to provide students with the broadest possible background in linguistics and encourages them to take advantage of the wide range of opportunities presented by the Program's faculty and to discover connections between the various subdisciplines of the field. It is possible for all credit hours earned in a graduate certificate program in TESOL at UofSC to apply to this degree. Please speak to an advisor to see how these hours apply in your situation.

## Learning Outcomes

- Students will demonstrate knowledge of general linguistics, including phonological and syntactic structure, and proficiency in problem-solving skills.
- Students will demonstrate effective oral communication of basic linguistic knowledge and knowledge in the core areas of phonology and syntax.
- Students will demonstrate knowledge of a subdiscipline in the field of linguistics and its application to general linguistics.

## Degree Requirements (30 Hours minimum)

### Non-Thesis Option

#### Coursework (36 Hours minimum)

Candidates must take a minimum of 12 courses (36 credit hours) of graduate work, to include the following:

#### Core Courses (9 Hours)

Course	Title	Credits
LING 710	Introduction to Phonology	3
LING 720	Introduction to Syntax	3
One more graduate-level core linguistics course in one of the following: phonetics, phonology, morphology, syntax, semantics or pragmatics (including LING 600: Survey of Linguistics) <sup>1</sup>		3
<b>Total Credit Hours</b>		<b>9</b>

<sup>1</sup> Including LING 600.

Note: Other courses may be used to satisfy this requirement pending the approval of the student's advisor and the graduate director. Students may choose depth (another syntax or phonology course) or breadth (another core area).

#### Special Field (9 Hours)

- M.A. students should take at least 3 courses (9 credit hours) in a LING area approved by the student's advisor.

#### Secondary Field (9 Hours)

- M.A. students should take at least 3 LING courses (9 credit hours) in an area outside of their special field.

#### Elective Courses (9 Hours)

- M.A. students should take 3 additional LING courses approved by the student's advisor (9 hours). Permission is required for the inclusion of any non-LING course in the program of study.

Note: LING 806: The Graduate School's official policy on independent study is to allow up to 6 hours towards the M.A.

#### Special Note on Grades

Graduate students whose GPA falls below 3.00 will be placed on academic probation by The Graduate School and allowed one calendar year in which to raise the cumulative GPA to at least 3.00. Students who do not reach a cumulative 3.00 grade point average during the probationary period will be suspended from graduate study and will not be permitted to enroll for further graduate course work as a degree or a nondegree student.

#### Foreign Language Requirement

The study of languages is a necessary tool for linguists and candidates must demonstrate knowledge of at least one foreign language. This can be accomplished in one of the following ways:

- successful completion of an intensive reading course in a language - approved by The Graduate School - while a graduate student at UofSC (e.g., FORL 615),
- successful completion of a course at the intermediate level of language proficiency no more than six years prior to award of the degree,
- a passing grade on a language reading proficiency examination administered by the UofSC Department of Language, Literatures, and Cultures,
- completing 6 hours of coursework in a non-Indo-European language with a grade of at least a B.

Students seeking the master's degree will have three opportunities to pass the language course or satisfy the reading proficiency examination. Nonnative speakers of English may select English as a foreign language,



upon submission of the Certification in English as a Foreign Language for Masters and Doctoral Programs.

### Comprehensive Examination

Students must pass a comprehensive exam that includes an oral component in which students must demonstrate effective oral communication of their knowledge of general linguistics and the core areas of phonology and syntax as they apply to the student's primary field. Students will be examined by a committee of two Linguistics Program faculty members, typically including the faculty advisor and a faculty member representing the student's special field.

Students who pursue the non-thesis M.A. option will submit to their comprehensive exam committee one written work product from one of their specialization courses that will serve as the foundation for the oral examination.

The exam committee will produce an overall rating of Pass/Fail by assessing basic knowledge of general linguistics; basic knowledge of phonology; basic knowledge of syntax; ability to apply knowledge to a given problem.

The oral examination should be scheduled **no later than the middle of the fourth/last semester**. Upon successful completion of an oral comprehensive examination, the examination committee chair will inform the Graduate Director.

### Thesis Option

#### Coursework (30 Hours minimum)

Candidates must take a minimum of 10 courses (30 credit hours) of graduate work, to include the following:

#### Core Courses (9 Hours)

Course	Title	Credits
LING 710	Introduction to Phonology	3
LING 720	Introduction to Syntax	3
One more graduate-level core linguistics course in one of the following: phonetics, phonology, morphology, syntax, semantics or pragmatics (including LING 600: Survey of Linguistics) <sup>1</sup>		3
<b>Total Credit Hours</b>		<b>9</b>

<sup>1</sup> Including LING 600.

Note: Other courses may be used to satisfy this requirement pending the approval of the student's advisor and the graduate director. Students may choose depth (another syntax or phonology course) or breadth (another core area).

#### Special Field (6 Hours)

- M.A. students should take at least 2 courses (6 credit hours) in a LING area approved by the student's advisor.

#### Elective Courses (12 Hours)

- M.A. students should take four LING courses outside of the special field plus approved by the student's advisor (12 hours). Permission is required for the inclusion of any non-LING course in the program of study.

Note: LING 806: The Graduate School's official policy on independent study is to allow up to 6 hours towards the M.A.

#### Thesis Hours (3 Hours)

Course	Title	Credits
LING 799	Thesis Preparation	3
<b>Total Credit Hours</b>		<b>3</b>

Only 3 hours of LING 799 may appear on the student's Program of Study. Any additional credits needed to complete the thesis should be taken under LING 806.

Note: Students who proceed from the M.A. to the Ph.D. will need to take one more core course to satisfy the Ph.D. core requirements if LING 600 was counted as an M.A. core requirement.

#### Special Note on Grades

Graduate students whose GPA falls below 3.00 will be placed on academic probation by The Graduate School and allowed one calendar year in which to raise the cumulative GPA to at least 3.00. Students who do not reach a cumulative 3.00 grade point average during the probationary period will be suspended from graduate study and will not be permitted to enroll for further graduate course work as a degree or a nondegree student.

#### Foreign Language Requirement

The study of languages is a necessary tool for linguists and candidates must demonstrate knowledge of at least one foreign language. This can be accomplished in one of the following ways:

- successful completion of an intensive reading course in a language - approved by The Graduate School - while a graduate student at UofSC (e.g., FORL 615),
- successful completion of a course at the intermediate level of language proficiency no more than six years prior to award of the degree,
- a passing grade on a language reading proficiency examination administered by the UofSC Department of Language, Literatures, and Cultures,
- completing 6 hours of coursework in a non-Indo-European language with a grade of at least a B.

Students seeking the master's degree will have three opportunities to pass the language course or satisfy the reading proficiency examination. Nonnative speakers of English may select English as a foreign language, upon submission of the Certification in English as a Foreign Language for Masters and Doctoral Programs.

#### Comprehensive Examination

Students must pass a comprehensive exam that includes an oral component in which students must demonstrate effective oral communication of their knowledge of general linguistics and the core areas of phonology and syntax as they apply to the student's primary field. Students will be examined by a committee of two Linguistics Program faculty members, typically the faculty advisor and a faculty member representing the student's special field.

Students who pursue the thesis M.A. option must successfully **defend the thesis proposal**, demonstrating knowledge of previous research in the field and methods for data collection and analysis. The written thesis proposal serves as the foundation for the oral examination. This should normally be completed (by full-time students) **in the 3rd semester**.

The exam committee will produce an overall rating of Pass/Fail by assessing basic knowledge of general linguistics; basic knowledge of phonology; basic knowledge of syntax; basic knowledge of the

subfield; ability to apply knowledge to a given problem. Upon successful completion of an oral comprehensive examination, the examination committee chair will inform the Associate Director.

### Thesis Requirement

In their fourth semester M.A. students should do the following:

- File an M.A. Thesis Form with the Program Office (usually before the start of the 3rd semester for full-time students). This must be done before the student may register for LING 799.
- Develop a thesis proposal (under the supervision of their thesis director) and defend this as part of their Comprehensive Exam. This should be done (by full-time students) in the 3rd semester.
- Write thesis (in the 4th semester) and have it approved by director and reader.

## Linguistics, Ph.D.

The mission of the Ph.D. Program in Linguistics is to train students to pursue research and teach in the areas of general linguistics and a chosen subfield. The Ph.D. in Linguistics at USC typically involves a much broader range of coursework than what is found at more traditional Linguistics Departments and Programs in the United States. The program does not focus on the training of theoretical linguists, but instead sees its mission as that of training historical linguists, language acquisition specialists, sociolinguists, and others, who can apply linguistic theory to the pursuit of their research. Thus, it is typical for a student in this program to use current syntactic theory in investigations into language contact or language variation, or to apply phonological theory to research on second language acquisition.

The Ph.D. course requirements (see degree requirements) involve six core courses, plus a primary field of study of at least 12 hours, and either a secondary field of 9-12 hours or at least 9 hours breadth requirement outside the primary field. **Approved special fields are the following: linguistic anthropology, English/French/German/Spanish linguistics, historical linguistics, philosophy of language, phonological theory, psycholinguistics, second/foreign language acquisition, sociolinguistics, syntactic theory, and teaching English as a second/foreign language.**

The secondary field may consist entirely of LING-designated courses; however, it also could include both LING-designated courses and courses from other departments. A student may also choose a secondary field made up entirely of courses from a cooperating department. Examples include English Composition and Rhetoric, Medieval and Early Modern English Literature, Experimental Psychology, Philosophy, or Communication Sciences and Disorders. It is possible for all credit hours earned in a graduate certificate program in TESOL at USC to apply to this degree. Please speak to an advisor to see how these hours apply in your situation.

## Learning Outcomes

- Students will demonstrate knowledge of theory and research in core areas of linguistics.
- Students will demonstrate advanced knowledge in a subdiscipline in the field of linguistics.
- Students will demonstrate the ability to formulate and conduct a plan of linguistic research that advances the state of knowledge in the area of inquiry.
- Students will progress through the program in a timely manner and find suitable employment in the field of linguistics (or in a profession

where their linguistic skills are being meaningfully used) at the completion of their doctoral degree.

## Degree Requirements (60 Post-Baccalaureate Hours)

### Core Courses (18 Hours)

Course	Title	Credits
LING 710	Introduction to Phonology	3
LING 720	Introduction to Syntax	3
LING 711	Phonological Theory	3
or LING 721	Syntactic Theory	
Select three more graduate level core linguistics courses in phonetics, phonology, morphology, syntax, semantics, and/or pragmatics <sup>1</sup>		9
<b>Total Credit Hours</b>		<b>18</b>

<sup>1</sup> Exclusive of LING 600. Other courses may be used to satisfy this requirement pending the approval of the student's advisor and the graduate director.

Note: Students who proceed from the M.A. to the Ph.D. will need to take one more course to satisfy the Ph.D. core requirement if LING 600 was counted as an M.A. core requirement.

### Primary Field (12 Hours)

- Ph.D. students should take at least 4 courses (12 credit hours) in an area approved by the student's Ph.D. committee.

### Secondary Field or Breadth Requirement (9-12 Hours)

- Students may decide on a secondary field in which they will take 3-4 courses (9-12 credit hours). Alternatively, students who do not wish to declare a secondary field will take course work in Linguistics outside of their primary field of at least nine hours.

### Methodology (3-6 Hours)

Students are required to take at least 1 and up to 2 approved methodology courses. Approved courses include any Linguistic methodology course, in addition to the following courses offered by other departments:

Course	Title	Credits
BIOS 700	Introduction to Biostatistics	3
EDRM 710	Educational Statistics I	3
EDRM 711	Educational Statistics II	3
PSYC 709	Basic Quantitative Methods in the Analysis of Behavioral Data I	3
PSYC 710	Basic Quantitative Methods in the Analysis of Behavioral Data II	3
STAT 515	Statistical Methods I	3
STAT 516	Statistical Methods II	3

### Elective Courses (0-6 Hours)

- Up to 2 courses (6 credit hours) approved by the program, in elective LING courses. Additional credit hours may be taken in coursework approved by the student's Ph.D. committee.

## Dissertation Hours (12-30 Hours)

Course	Title	Credits
LING 899	Dissertation Preparation	1-12
<b>Total Credit Hours</b>		<b>1-12</b>

Note: LING 806: The Graduate School's official policy on independent study is to allow up to 9 hours towards the Ph.D.

## Foreign Language Requirement

Candidates must demonstrate knowledge of two approved languages other than their native language. For the second language, a student may, with the approval of the student's advisor and the graduate director, substitute a research methods, statistics, or computer science course. Demonstrating knowledge of a foreign language can be accomplished in one of the following ways:

- successful completion of an intensive reading course in a language - approved by The Graduate School - while a graduate student at UofSC (e.g., FORL 615),
- successful completion of a course at the intermediate level of language proficiency no more than six years prior to award of the degree,
- a passing grade on a language reading proficiency examination administered by the UofSC Department of Language, Literatures, and Cultures,
- completing 6 hours of coursework in a non-Indo-European language with a grade of at least a B.
- 3 credits of a research methods class (NOTE: if a student claims a research methods course as a substitute for a foreign language requirement they cannot claim the same course as fulfilling the research methods requirement)

If a student claims a research methods course as a substitute for the second foreign language that is required, that course cannot be used to fulfill the research methods requirement.

Nonnative speakers of English may select English as a foreign language, upon submission of the following Certification In English as a Foreign Language for Masters and Doctoral Programs ([https://www.sc.edu/study/colleges\\_schools/graduate\\_school/documents/gcie.certification.in.english.pdf](https://www.sc.edu/study/colleges_schools/graduate_school/documents/gcie.certification.in.english.pdf)).

The Department of Languages, Literatures, and Cultures has further information about Graduate Reading Proficiency Exams ([https://www.sc.edu/study/colleges\\_schools/artsandsciences/dllc/study/graduate/grad\\_reading\\_exam.php](https://www.sc.edu/study/colleges_schools/artsandsciences/dllc/study/graduate/grad_reading_exam.php)).

## Teaching English to Speakers of Other Languages, Certificate

The TESOL Certificate Program provides a firm grounding in both linguistics and pedagogical theory paired with practical teaching experience. It prepares future teachers of English as a second or foreign language to apply their skills in settings around the world. Because the TESOL Certificate is a six-course program and because all six graduate courses from this certificate may apply towards an M.A., a student can earn a TESOL Certificate in conjunction with an M.A. in Linguistics with just one additional year's coursework.

The Certificate Program has close relationships with the English Programs for Internationals (EPI) at South Carolina, which is among

the top-ranked adult ESL programs in the nation. EPI faculty members typically are responsible for the instruction in pedagogically-oriented ESL theory courses, as well as for the practical training component of the Certificate Program.

## Learning Outcomes

- Students will demonstrate knowledge of general linguistics and proficiency in problem-solving skills.
- Students will demonstrate understanding of second language acquisition theories.
- Students will demonstrate professional competencies in planning, implementing, and assessing English as second language instruction appropriate for specific groups and settings.

## Certificate Requirements (18 Hours)

The program in linguistics offers a graduate certificate in teaching English to speakers of other languages (TESOL) — a six-course, 18-semester-hour program. There are two tracks, the EFL track for post-secondary ESOL and EFL (English as a Foreign Language) teaching and the K-12 ESOL track for elementary and secondary ESOL teaching. Course requirements for each track are as follows:

### EFL Track

*Primarily for post-secondary ESOL and EFL teaching*

#### Required Courses (12 Hours)

Course	Title	Credits
LING 600	Survey of Linguistics	3
LING 790	Second Language Acquisition	3
LING 795	Principles and Strategies for Teaching ESOL	3
LING 798	Practicum in Teaching ESOL	3
<b>Total Credit Hours</b>		<b>12</b>

#### Elective Courses (6 Hours)

Course	Title	Credits
Select one of the following:		3
LING 514	Contrastive English-Spanish Phonetics and Phonology	
LING 791	Theory and Methodology in Second Language Acquisition	
LING 796	Teaching Reading and Writing to ESOL Learners: Theory and Practice	
LING 890	Seminar in Language Acquisition	
LING 891	Seminar in English for Speakers of Other Languages (ESOL)	
EDRD 811	Cultural Perspective on Psychological and Social Foundations of Literacy Learning	
EDRM 723	Classroom Assessment Methods	
ENGL 790	Survey of Composition Studies	
Or any other course in English as a second language or in second language acquisition		
Select one additional LING course <sup>1</sup>		3
<b>Total Credit Hours</b>		<b>6</b>

<sup>1</sup> Selected in consultation with the academic advisor.

## K-12 ESOL Track

For elementary and secondary ESOL teaching

### Required Courses (12 Hours)

Course	Title	Credits
LING 600	Survey of Linguistics	3
LING 795	Principles and Strategies for Teaching ESOL	3
LING 796	Teaching Reading and Writing to ESOL Learners: Theory and Practice	3
LING 798	Practicum in Teaching ESOL <sup>1</sup>	3
<b>Total Credit Hours</b>		<b>12</b>

- <sup>1</sup> The practicum may be waived based on one year's experience teaching ESOL and replaced with an elective course. It is recommended that the practicum, if waived, be replaced with one of the following courses:
- LING 514
  - LING 791
  - LING 891

### Elective Courses (6 Hours)

Course	Title	Credits
Select one course from two of the following areas:		6
<b>1. English Grammar/Structure</b>		
<b>2. Second Language Acquisition for Teachers of Elementary and Secondary Learners</b>		
LING 790	Second Language Acquisition	
<b>3. Cultural Diversity in Education</b>		
EDTE 811	Developing Integrated Curricula	
<b>4. Testing/Assessment for Language Minority Learners</b>		
EDRM 723	Classroom Assessment Methods	
<b>Total Credit Hours</b>		<b>6</b>

## Additional Information

For this program, no courses may be transferred from another university, although up to 9 semester hours of overlapping course work from another program at the University of South Carolina may count toward completion of the certificate. For full-time students, the certificate course work and practicum can be completed in one academic year.

## Mathematics

Department Website (<http://www.math.sc.edu/>)

Anton R. Schep, *Chair*

The Department of Mathematics has evolved into one of the premier centers in the Southeast for mathematics research and education. Its masters and doctoral programs have been cited for excellence by the S.C. Commission on Higher Education. With its internationally renowned faculty and supportive atmosphere, the department provides a stimulating environment for graduate studies. As the face of mathematics changes, the department responds with appropriate curriculum additions and revisions.

The department's degree programs provide first the core fundamentals, and then the specialized expertise and interdisciplinary skills required of the modern mathematician. Training for those who wish to pursue a career in teaching, those who plan mathematics-related careers in

business, government, or industry, and those who wish to obtain the intensive training that will lead them into the contemporary research community is available.

The Department of Mathematics offers programs leading to the Master of Arts, Master of Science, and Doctor of Philosophy, including a Ph.D. option of a Concentration in Applied and Computational Mathematics. This Concentration emphasizes core mathematics that leads to the frontiers of research both within applied and computational mathematics and cuts across disciplinary boundaries.

The department also offers programs leading to the Master of Mathematics and, in conjunction with the College of Education, a program leading to the degree of Master of Arts in Teaching. A description of the basic M.A.T. requirements appears in the College of Education section of the Graduate Studies Bulletin.

For more comprehensive general information, see the website <http://www.math.sc.edu/graduate> (<http://www.math.sc.edu/graduate/>). Inquires concerning individual cases should be directed to:

Director of Graduate Studies  
Department of Mathematics  
University of South Carolina  
Columbia, SC 29208  
email: [graddir@math.sc.edu](mailto:graddir@math.sc.edu)

## Degree Requirements (General)

There are certain requirements imposed by the Graduate School on all programs. We reiterate only the most pertinent ones here; others appear elsewhere in this Bulletin, and are routinely fulfilled over the course of the program of study.

The M.S. and M.A. degrees require 30 approved credit hours of course work, at least half of which (excluding the thesis) must be taken at the 700 level or above. In addition, a Comprehensive Examination taken upon conclusion of the program is required. Both the M.S. and the M.A. degrees require a thesis (3 credits of MATH 799).

Each candidate for the Ph.D. degree is required to complete a minimum of 60 hours of course work beyond the baccalaureate degree, including 12 credit hours of graduate course work separate from the course work covered by the Admission to Candidacy and Comprehensive Examinations (see below) and 12 credit hours of dissertation work (MATH 899). The Ph.D. program has three examinations: Admission to Candidacy, Comprehensive, and Doctoral Defense.

Note that "credit hours" are not earned if a course is taken on an "Audit" basis. Courses labeled 7xx-I may not be used to satisfy M.S., M.A., or Ph.D. requirements except in rare circumstances, and only by special permission. These courses are designed for the M.M. and M.A.T. programs.

## Admission

For admission into the M.S., M.A., or Ph.D. degree programs, applicants must have a bachelor's degree from an approved institution and should have an undergraduate foundation in mathematics equivalent to that of a major in mathematics at the University of South Carolina. At a minimum, this should include a course in abstract algebra (equivalent to MATH 546) and one in advanced calculus (equivalent to MATH 554). A one year sequence in each is desirable. A minimum B (3.0) average in all college-level math courses is required for full admission. Applicants who do not

have this preparation may be conditionally admitted and placed in such undergraduate courses as necessary to strengthen their backgrounds.

Applicants should submit an official transcript from each school or college previously attended, at least two letters of recommendation from persons familiar with their abilities in mathematics, and an official report of scores achieved on the GRE. A GRE score of at least 700 on the quantitative portion is expected. Applicants whose native language is not English are also required to submit a satisfactory score on the iBT TOEFL exam. The minimum score for admission to the program is 88. A minimum iBT TOEFL score of 100 is required for consideration for a teaching assistantship; there are also minimum levels for each sub-category (listening, speaking, reading, writing), which can be viewed on the departmental website. The GRE Mathematics Subject Exam is not required, but a strong score enhances the probability of admission with assistantship and the possibility of a supplemental fellowship.

For admission to the M.M. or M.A.T. degree programs, applicants must have a bachelor's degree from an approved institution and have completed multivariable calculus (Calculus III, equivalent to MATH 241). Further, it is desirable that they have completed six credit hours in mathematics beyond multivariable calculus. At least a B (3.0) average for all college level mathematics courses is expected. Applicants with background deficiencies may be admitted on a conditional basis and placed in certain dual undergraduate/graduate courses to strengthen their foundation. Course work below the 500-level can not be used toward these degrees. Applicants should submit an official transcript from each school or college previously attended, at least two letters of recommendation from persons familiar with their abilities in mathematics, and a report of scores achieved on the GRE. A combined GRE score of 1000 is expected, with at least 550 on the quantitative portion.

Application materials should be submitted as much as possible online at <http://www.gradschool.sc.edu/apply.htm>, or be mailed to:

The Graduate School  
University of South Carolina  
Columbia, SC 29208

## Programs

- Mathematics, M.A. (p. 100)
- Mathematics, M.M. (p. 100)
- Mathematics, M.S. (p. 101)
- Mathematics, Ph.D. (p. 101)

## Courses

### MATH 511 - Probability (3 Credits)

Probability and independence; discrete and continuous random variables; joint, marginal, and conditional densities, moment generating functions; laws of large numbers; binomial, Poisson, gamma, univariate, and bivariate normal distributions.

**Prerequisites:** C or better in MATH 241.

**Corequisite:** MATH 241.

**Cross-listed course:** STAT 511

### MATH 514 - Financial Mathematics I (3 Credits)

Probability spaces. Random variables. Mean and variance. Geometric Brownian Motion and stock price dynamics. Interest rates and present value analysis. Pricing via arbitrage arguments. Options pricing and the Black-Scholes formula.

**Prerequisites:** C or better in MATH 241.

**Cross-listed course:** STAT 522

### MATH 515 - Financial Mathematics II (3 Credits)

Convex sets. Separating Hyperplane Theorem. Fundamental Theorem of Asset Pricing. Risk and expected return. Minimum variance portfolios. Capital Asset Pricing Model. Martingales and options pricing. Optimization models and dynamic programming.

**Prerequisites:** C or better in MATH 514 or STAT 522.

**Cross-listed course:** STAT 523

### MATH 520 - Ordinary Differential Equations (3 Credits)

Differential equations of the first order, linear systems of ordinary differential equations, elementary qualitative properties of nonlinear systems.

**Prerequisites:** C or better in MATH 344 or MATH 544.

### MATH 521 - Boundary Value Problems and Partial Differential Equations (3 Credits)

Laplace transforms, two-point boundary value problems and Green's functions, boundary value problems in partial differential equations, eigenfunction expansions and separation of variables, transform methods for solving PDE's, Green's functions for PDE's, and the method of characteristics.

**Prerequisites:** C or better in MATH 520 or in both MATH 241 and MATH 242.

### MATH 522 - Wavelets (3 Credits)

Basic principles and methods of Fourier transforms, wavelets, and multiresolution analysis; applications to differential equations, data compression, and signal and image processing; development of numerical algorithms. Computer implementation.

**Prerequisites:** C or better in MATH 344 or MATH 544.

### MATH 523 - Mathematical Modeling of Population Biology (3 Credits)

Applications of differential and difference equations and linear algebra modeling the dynamics of populations, with emphasis on stability and oscillation. Critical analysis of current publications with computer simulation of models.

**Prerequisites:** C or better in MATH 142, BIOL 301, or MSCI 311 recommended.

### MATH 524 - Nonlinear Optimization (3 Credits)

Descent methods, conjugate direction methods, and Quasi-Newton algorithms for unconstrained optimization; globally convergent hybrid algorithm; primal, penalty, and barrier methods for constrained optimization. Computer implementation of algorithms.

**Prerequisites:** C or better in MATH 241 and one of MATH 344 or MATH 544.

### MATH 525 - Mathematical Game Theory (3 Credits)

Two-person zero-sum games, minimax theorem, utility theory, n-person games, market games, stability.

**Prerequisites:** C or better in MATH 544 or in both MATH 300 and MATH 344.

**MATH 526 - Numerical Linear Algebra (4 Credits)**

Matrix algebra, Gauss elimination, iterative methods; overdetermined systems and least squares; eigenvalues, eigenvectors; numerical software. Computer implementation. Credit may not be received for both MATH 526 and MATH 544. Three lectures and one laboratory hour per week.

**Prerequisites:** C or better in MATH 142.

**MATH 527 - Numerical Analysis (3 Credits)**

Interpolation and approximation of functions; solution of algebraic equations; numerical differentiation and integration; numerical solutions of ordinary differential equations and boundary value problems; computer implementation of algorithms.

**Prerequisites:** C or better in MATH 520 or in both MATH 242 and MATH 344.

**Cross-listed course:** CSCE 561

**MATH 528 - Mathematical Foundation of Data Science and Machine Learning (3 Credits)**

Unconstrained and constrained optimization, gradient descent methods for numerical optimization, supervised and unsupervised learning, various reduced order methods, sampling and inference, Monte Carlo methods, deep neural networks.

**Prerequisites:** C or better in MATH 344 or MATH 544.

**MATH 531 - Foundations of Geometry (3 Credits)**

The study of geometry as a logical system based upon postulates and undefined terms. The fundamental concepts and relations of Euclidean geometry developed rigorously on the basis of a set of postulates. Some topics from non-Euclidean geometry.

**Prerequisites:** C or better in MATH 300.

**MATH 532 - Modern Geometry (3 Credits)**

Projective geometry, theorem of Desargues, conics, transformation theory, affine geometry, Euclidean geometry, non-Euclidean geometries, and topology.

**Prerequisites:** C or better in MATH 300.

**MATH 533 - Elementary Geometric Topology (3 Credits)**

Topology of the line, plane, and space, Jordan curve theorem, Brouwer fixed point theorem, Euler characteristic of polyhedra, orientable and non-orientable surfaces, classification of surfaces, network topology.

**Prerequisites:** C or better in MATH 241 and MATH 300.

**MATH 534 - Elements of General Topology (3 Credits)**

Elementary properties of sets, functions, spaces, maps, separation axioms, compactness, completeness, convergence, connectedness, path connectedness, embedding and extension theorems, metric spaces, and compactification.

**Prerequisites:** C or better in MATH 241 and MATH 300.

**MATH 540 - Modern Applied Algebra (3 Credits)**

Finite structures useful in applied areas. Binary relations, Boolean algebras, applications to optimization, and realization of finite state machines.

**Prerequisites:** MATH 300.

**MATH 541 - Algebraic Coding Theory (3 Credits)**

Error-correcting codes, polynomial rings, cyclic codes, finite fields, BCH codes.

**Prerequisites:** C or better in MATH 544 or in both MATH 300 and MATH 344.

**MATH 544 - Linear Algebra (3 Credits)**

Vectors, vector spaces, and subspaces; geometry of finite dimensional Euclidean space; linear transformations; eigenvalues and eigenvectors; diagonalization. Throughout there will be an emphasis on theoretical concepts, logic, and methods. MATH 544L is an optional laboratory course where additional applications will be discussed.

**Prerequisites:** C or better in MATH 241 and MATH 300.

**MATH 544L - Linear Algebra Lab (1 Credit)**

Computer-based applications of linear algebra for mathematics students. Topics include numerical analysis of matrices, direct and indirect methods for solving linear systems, and least squares method (regression). Typical applications include theoretical and practical issues related to discrete Markov processes, image compression, and linear programming. Credit not allowed for both MATH 344L and 544L.

**Prerequisite or Corequisite:** C or better or concurrent enrollment in MATH 544.

**MATH 546 - Algebraic Structures I (3 Credits)**

Permutation groups; abstract groups; introduction to algebraic structures through study of subgroups, quotient groups, homomorphisms, isomorphisms, direct product; decompositions; introduction to rings and fields.

**Prerequisites:** C or better in MATH 544.

**MATH 547 - Algebraic Structures II (3 Credits)**

Rings, ideals, polynomial rings, unique factorization domains; structure of finite groups; topics from: fields, field extensions, Euclidean constructions, modules over principal ideal domains (canonical forms).

**Prerequisites:** C or better in MATH 546.

**MATH 548 - Geometry, Algebra, and Algorithms (3 Credits)**

Polynomials and affine space, Grobner bases, elimination theory, varieties, and computer algebra systems.

**Prerequisites:** C or better in MATH 300 and in one of MATH 344 or MATH 544.

**MATH 550 - Vector Analysis (3 Credits)**

Vector fields, line and path integrals, orientation and parametrization of lines and surfaces, change of variables and Jacobians, oriented surface integrals, theorems of Green, Gauss, and Stokes; introduction to tensor analysis.

**Prerequisites:** C or better in MATH 241.

**MATH 551 - Introduction to Differential Geometry (3 Credits)**

Parametrized curves, regular curves and surfaces, change of parameters, tangent planes, the differential of a map, the Gauss map, first and second fundamental forms, vector fields, geodesics, and the exponential map.

**Prerequisites:** C or better in MATH 241 and MATH 300.

**MATH 552 - Applied Complex Variables (3 Credits)**

Complex integration, calculus of residues, conformal mapping, Taylor and Laurent Series expansions, applications.

**Prerequisites:** C or better in MATH 241.

**MATH 554 - Analysis I (3 Credits)**

Least upper bound axiom, the real numbers, compactness, sequences, continuity, uniform continuity, differentiation, Riemann integral and fundamental theorem of calculus.

**Prerequisites:** C or better in MATH 300 and either at least one of MATH 511, MATH 520, MATH 534, MATH 550, or MATH 552.

**MATH 555 - Analysis II (3 Credits)**

Riemann-Stieltjes integral, infinite series, sequences and series of functions, uniform convergence, Weierstrass approximation theorem, selected topics from Fourier series or Lebesgue integration.

**Prerequisites:** C or better in MATH 554.

**MATH 561 - Introduction to Mathematical Logic (3 Credits)**

Syntax and semantics of formal languages; sentential logic, proofs in first order logic; Godel's completeness theorem; compactness theorem and applications; cardinals and ordinals; the Lowenheim-Skolem-Tarski theorem; Beth's definability theorem; effectively computable functions; Godel's incompleteness theorem; undecidable theories.

**Prerequisites:** C or better in MATH 300.

**MATH 562 - Theory of Computation (3 Credits)**

Basic theoretical principles of computing as modeled by formal languages and automata; computability and computational complexity.

**Prerequisites:** C or better in CSCE 350 or MATH 300.

**Cross-listed course:** CSCE 551

**MATH 570 - Discrete Optimization (3 Credits)**

Discrete mathematical models. Applications to such problems as resource allocation and transportation. Topics include linear programming, integer programming, network analysis, and dynamic programming.

**Prerequisites:** C or better in MATH 300 and in one of MATH 544 or MATH 344.

**MATH 574 - Discrete Mathematics I (3 Credits)**

Mathematical models; mathematical reasoning; enumeration; induction and recursion; tree structures; networks and graphs; analysis of algorithms.

**Prerequisites:** C or better in MATH 300.

**MATH 575 - Discrete Mathematics II (3 Credits)**

A continuation of MATH 574. Inversion formulas; Polya counting; combinatorial designs; minimax theorems; probabilistic methods; Ramsey theory; other topics.

**Prerequisites:** C or better in MATH 574.

**MATH 576 - Combinatorial Game Theory (3 Credits)**

Winning in certain combinatorial games such as Nim, Hackenbush, and Domineering. Equalities and inequalities among games, Sprague-Grundy theory of impartial games, games which are numbers.

**Prerequisites:** C or better in MATH 300 or MATH 374.

**MATH 580 - Elementary Number Theory (3 Credits)**

Divisibility, primes, congruences, quadratic residues, numerical functions. Diophantine equations.

**Prerequisites:** C or better in MATH 300.

**MATH 587 - Introduction to Cryptography (3 Credits)**

Design of secret codes for secure communication, including encryption and integrity verification: ciphers, cryptographic hashing, and public key cryptosystems such as RSA. Mathematical principles underlying encryption. Code-breaking techniques. Cryptographic protocols.

**Prerequisites:** C or better in CSCE 145 or MATH 241, and at least one of CSCE 355, MATH 300, or MATH 374.

**Cross-listed course:** CSCE 557

**MATH 599 - Topics in Mathematics (1-3 Credits)**

Recent developments in pure and applied mathematics selected to meet current faculty and student interest.

**MATH 602 - An Inductive Approach to Geometry (3 Credits)**

This course is designed for middle-level pre-service mathematics teachers. This course covers geometric reasoning, Euclidean geometry, congruence, area, volume, similarity, symmetry, vectors, and transformations. Dynamic software will be utilized to explore geometry concepts. This course cannot be used for credit toward a major in mathematics.

**Prerequisites:** C or better in MATH 122 or MATH 141 or equivalent.

**MATH 603 - Inquiry Approach to Algebra (3 Credits)**

This course introduces basic concepts in number theory and modern algebra that provide the foundation for middle level arithmetic and algebra. Topics include: algebraic reasoning, patterns, inductive reasoning, deductive reasoning, arithmetic and algebra of integers, algebraic systems, algebraic modeling, and axiomatic mathematics. This course cannot be used for credit towards a major in mathematics.

**Prerequisites:** C or higher in MATH 122 or MATH 141 or equivalent.

**MATH 650 - AP Calculus for Teachers (3 Credits)**

A thorough study of the topics to be presented in AP calculus, including limits of functions, differentiation, integration, infinite series, and applications. Not intended for degree programs in mathematics.

**Prerequisites:** current secondary high school teacher certification in mathematics and a C or better in at least 6 hours of calculus.

**MATH 700 - Linear Algebra (3 Credits)**

Vector spaces, linear transformations, dual spaces, decompositions of spaces, and canonical forms. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 701 - Algebra I (3 Credits)**

Algebraic structures, sub-structures, products, homomorphisms, and quotient structures of groups, rings, and modules. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 701I - Foundations of Algebra I (3 Credits)**

An introduction to algebraic structures; group theory including subgroups, quotient groups, homomorphisms, isomorphisms, decomposition; introduction to rings and fields. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 241 or equivalent.

**MATH 702 - Algebra II (3 Credits)**

Fields and field extensions. Galois theory, topics from, transcendental field extensions, algebraically closed fields, finite fields. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 701.

**MATH 702I - Foundations of Algebra II (3 Credits)**

Theory of rings including ideals, polynomial rings, and unique factorization domains; structure of finite groups; fields; modules. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 701I or equivalent.

**MATH 703 - Analysis I (3 Credits)**

Compactness, completeness, continuous functions. Outer measures, measurable sets, extension theorem and Lebesgue-Stieltjes measure. Integration and convergence theorems. Product measures and Fubini's theorem. Differentiation theory. Theorems of Egorov and Lusin.  $L_p$ -spaces. Analytic functions: Cauchy-Riemann equations, elementary special functions. Conformal mappings. Cauchy's integral theorem and formula. Classification of singularities, Laurent series, the Argument Principle. Residue theorem, evaluation of integrals and series. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 703I - Foundations of Analysis I (3 Credits)**

The real numbers and least upper bound axiom; sequences and limits of sequences; infinite series; continuity; differentiation; the Riemann integral. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 241 or equivalent.

**MATH 704 - Analysis II (3 Credits)**

Compactness, completeness, continuous functions. Outer measures, measurable sets, extension theorem and Lebesgue-Stieltjes measure. Integration and convergence theorems. Product measures and Fubini's theorem. Differentiation theory. Theorems of Egorov and Lusin.  $L_p$ -spaces. Analytic functions: Cauchy-Riemann equations, elementary special functions. Conformal mappings. Cauchy's integral theorem and formula. Classification of singularities, Laurent series, the Argument Principle. Residue theorem, evaluation of integrals and series. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 704I - Foundations of Analysis II (3 Credits)**

Sequences and series of functions; power series, uniform convergence; interchange of limits; limits and continuity in several variables. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 703I or equivalent.

**MATH 705 - Analysis III (3 Credits)**

Signed and complex measures, Radon-Nikodym theorem, decomposition theorems. Metric spaces and topology, Baire category, Stone-Weierstrass theorem, Arzela-Ascoli theorem. Introduction to Banach and Hilbert spaces, Riesz representation theorems. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 703, MATH 704.

**MATH 708 - Foundations of Computational Mathematics I (3 Credits)**

Approximation of functions by algebraic polynomials, splines, and trigonometric polynomials; numerical differentiation; numerical integration; orthogonal polynomials and Gaussian quadrature; numerical solution of nonlinear systems, unconstrained optimization. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 554 or equivalent upper level undergraduate course in Real Analysis.

**MATH 709 - Foundations of Computational Mathematics II (3 Credits)**

Vectors and matrices; QR factorization; conditioning and stability; solving systems of equations; eigenvalue/eigenvector problems; Krylov subspace iterative methods; singular value decomposition. Includes theoretical development of concepts and practical algorithm implementation. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 544 or MATH 526, or equivalent upper level undergraduate courses in Linear Algebra.

**MATH 710 - Probability Theory I (3 Credits)**

Probability spaces, random variables and distributions, expectations, characteristic functions, laws of large numbers, and the central limit theorem. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** STAT 511, STAT 512, or MATH 703.

**Cross-listed course:** STAT 810

**MATH 711 - Probability Theory II (3 Credits)**

More about distributions, limit theorems, Poisson approximations, conditioning, martingales, and random walks. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Cross-listed course:** STAT 811

**MATH 712I - Probability and Statistics (3 Credits)**

This course will include a study of permutations and combinations; probability and its application to statistical inferences; elementary descriptive statistics of a sample of measurements; the binomial, Poisson, and normal distributions; correlation and regression. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 720 - Applied Mathematics I (3 Credits)**

Modeling and solution techniques for differential and integral equations from sciences and engineering, including a study of boundary and initial value problems, integral equations, and eigenvalue problems using transform techniques, Green's functions, and variational principles. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 555 and MATH 520 or equivalent.

**MATH 721 - Applied Mathematics II (3 Credits)**

Foundations of approximation of functions by Fourier series in Hilbert space; fundamental PDEs in mathematical physics; fundamental equations for continua; integral and differential operators in Hilbert spaces. Basic modeling theory and solution techniques for stochastic differential equations. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 720.

**MATH 722 - Numerical Optimization (3 Credits)**

Topics in optimization; includes linear programming, integer programming, gradient methods, least squares techniques, and discussion of existing mathematical software. Graduate standing or consent of the department. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.



**MATH 723 - Differential Equations (3 Credits)**

Elliptic equations: fundamental solutions, maximum principles, Green's function, energy method and Dirichlet principle; Sobolev spaces: weak derivatives, extension and trace theorems; weak solutions and Fredholm alternative, regularity, eigenvalues and eigenfunctions. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 703/MATH 704.

**MATH 724 - Differential Equations II (3 Credits)**

Detailed study of the following topics: method of characteristics; Hamilton-Jacobi equations; conservation laws; heat equation; wave equation; linear parabolic equations; linear hyperbolic equations. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 723.

**MATH 725 - Approximation Theory (3 Credits)**

Approximation of functions; existence, uniqueness and characterization of best approximants; Chebyshev's theorem; Chebyshev polynomials; degree of approximation; Jackson and Bernstein theorems; B-splines; approximation by splines; quasi-interpolants; spline interpolation. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisite or Corequisite:** MATH 703.

**MATH 726 - Numerical Differential Equations I (3 Credits)**

Elliptic equations: fundamental solutions, maximum principles, Green's function, energy method and Dirichlet principle; Sobolev spaces: weak derivatives, extension and trace theorems; weak solutions and Fredholm alternative, regularity, eigenvalues and eigenfunctions. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 708/MATH 709.

**MATH 727 - Numerical Differential Equations II (3 Credits)**

Ritz and Galerkin weak formulation. Finite element, mixed finite element, collocation methods for elliptic, parabolic, and hyperbolic PDEs, including development, implementation, stability, consistency, convergence analysis, and error estimates.

**Prerequisites:** MATH 726.

**MATH 728 - Selected Topics in Applied Mathematics (3 Credits)**

All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 729 - Nonlinear Approximation (3 Credits)**

Nonlinear approximation from piecewise polynomial (spline) functions in the univariate and multivariate case, characterization of the approximation spaces via Besov spaces and interpolation, Newman's and Popov's theorems for rational approximation, characterization of the approximation spaces of rational approximation, nonlinear n-term approximation from bases in Hilbert spaces and from unconditional bases in  $L_p$  ( $p > 1$ ), greedy algorithms, application of nonlinear approximation to image compression.

**Prerequisites:** MATH 703.

**MATH 730 - General Topology I (3 Credits)**

Topological spaces, filters, compact spaces, connected spaces, uniform spaces, complete spaces, topological groups, function spaces. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 731 - General Topology II (3 Credits)**

Topological spaces, filters, compact spaces, connected spaces, uniform spaces, complete spaces, topological groups, function spaces. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 732 - Algebraic Topology I (3 Credits)**

The fundamental group, homological algebra, simplicial complexes, homology and cohomology groups, cup-product, triangulable spaces. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 730 or MATH 705, and MATH 701.

**MATH 733 - Algebraic Topology II (3 Credits)**

The fundamental group, homological algebra, simplicial complexes, homology and cohomology groups, cup-product, triangulable spaces. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 730 or MATH 705, and MATH 701.

**MATH 734 - Differential Geometry (3 Credits)**

Differentiable manifolds; classical theory of surfaces and hypersurfaces in Euclidean space; tensors, forms and integration of forms; connections and covariant differentiation; Riemannian manifolds; geodesics and the exponential map; curvature; Jacobi fields and comparison theorems, generalized Gauss-Bonnet theorem. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 550.

**MATH 735 - Lie Groups (3 Credits)**

Manifolds; topological groups, coverings and covering groups; Lie groups and their Lie algebras; closed subgroups of Lie groups; automorphism groups and representations; elementary theory of Lie algebras; simply connected Lie groups; semisimple Lie groups and their Lie algebras.

All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 705 or MATH 730.

**MATH 736I - Modern Geometry (3 Credits)**

Synthetic and analytic projective geometry, homothetic transformations, Euclidean geometry, non-Euclidean geometries, and topology. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 241 or equivalent.

**MATH 737 - Introduction to Complex Geometry (3 Credits)**

Algebraic geometry over the complex numbers, using ideas from topology, complex variable theory, and differential geometry.

**Prerequisite or Corequisite:** MATH 701.

**MATH 738 - Selected Topics in Geometry and Topology (3 Credits)**

Course content varies and will be announced in the schedule of classes by title. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 739 - Introduction to Complex Geometry II (3 Credits)**

Algebraic geometry over the complex numbers, using ideas from topology, complex variable theory, and differential geometry.

**Prerequisites:** MATH 737.

**MATH 741 - Algebra III (3 Credits)**

Theory of groups, rings, modules, fields and division rings, bilinear forms, advanced topics in matrix theory, and homological techniques.

**Prerequisites:** MATH 702.

**MATH 742 - Representation Theory (3 Credits)**

Representation and character theory of finite groups (especially the symmetric group) and/or the general linear group, Young tableaux, the Littlewood Richardson rule, and Schur functors.

**Prerequisites:** MATH 702.

**MATH 743 - Lattice Theory (3 Credits)**

Sublattices, homomorphisms and direct products of lattices; freely generated lattices; modular lattices and projective geometries; the Priestley and Stone dualities for distributive and Boolean lattices; congruence relations on lattices. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 740.

**MATH 744 - Matrix Theory (3 Credits)**

Extremal properties of positive definite and hermitian matrices, doubly stochastic matrices, totally non-negative matrices, eigenvalue monotonicity, Hadamard-Fisher determinantal inequalities. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 700.

**MATH 746 - Commutative Algebra (3 Credits)**

Prime spectrum and Zariski topology; finite, integral, and flat extensions; dimension; depth; homological techniques, normal and regular rings. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 701.

**MATH 747 - Algebraic Geometry (3 Credits)**

Properties of affine and projective varieties defined over algebraically closed fields, rational mappings, birational geometry and divisors especially on curves and surfaces, Bezout's theorem, Riemann-Roch theorem for curves. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 701.

**MATH 748 - Selected Topics in Algebra (3 Credits)**

Course content varies and will be announced in the schedule of classes by title. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 750 - Fourier Analysis (3 Credits)**

The Fourier transform on the circle and line, convergence of Fejer means; Parseval's relation and the square summable theory, convergence and divergence at a point; conjugate Fourier series, the conjugate function and the Hilbert transform, the Hardy-Littlewood maximal operator and Hardy spaces. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 703 and MATH 704.

**MATH 751 - The Mathematical Theory of Wavelets (3 Credits)**

The L1 and L2 theory of the Fourier transform on the line, bandlimited functions and the Paley-Weiner theorem, Shannon-Whittaker Sampling Theorem, Riesz systems, Mallat-Meyer multiresolution analysis in Lebesgue spaces, scaling functions, wavelet constructions, wavelet representation and unconditional bases, nonlinear approximation, Riesz's factorization lemma, and Daubechies' compactly supported wavelets.

**Prerequisites:** MATH 703.

**MATH 752 - Complex Analysis (3 Credits)**

Normal families, meromorphic functions, Weierstrass product theorem, conformal maps and the Riemann mapping theorem, analytic continuation and Riemann surfaces, harmonic and subharmonic functions. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 703, MATH 704.

**MATH 752I - Complex Variables (3 Credits)**

Properties of analytic functions, complex integration, calculus of residues, Taylor and Laurent series expansions, conformal mappings. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 241 or equivalent.

**MATH 754 - Several Complex Variables (3 Credits)**

Properties of holomorphic functions of several variables, holomorphic mappings, plurisubharmonic functions, domains of convergence of power series, domains of holomorphy and pseudoconvex domains, harmonic analysis in several variables. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 703 and MATH 704.

**MATH 755 - Applied Functional Analysis (3 Credits)**

Banach spaces, Hilbert spaces, spectral theory of bounded linear operators, Fredholm alternatives, integral equations, fixed point theorems with applications, least square approximation. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 703.

**MATH 756 - Functional Analysis I (3 Credits)**

Linear topological spaces; Hahn-Banach theorem; closed graph theorem; uniform boundedness principle; operator theory; spectral theory; topics from linear differential operators or Banach algebras. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 704.

**MATH 757 - Functional Analysis II (3 Credits)**

Linear topological spaces; Hahn-Banach theorem; closed graph theorem; uniform boundedness principle; operator theory; spectral theory; topics from linear differential operators or Banach algebras. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 704.

**MATH 758 - Selected Topics in Analysis (3 Credits)**

Course content varies and will be announced in the schedule of classes by title. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 760 - Set Theory (3 Credits)**

An axiomatic development of set theory: sets and classes; recursive definitions and inductive proofs; the axiom of choice and its consequences; ordinals; infinite cardinal arithmetic; combinatorial set theory. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 761 - The Theory of Computable Functions (3 Credits)**

Models of computation; recursive functions, random access machines, Turing machines, and Markov algorithms; Church's Thesis; universal machines and recursively unsolvable problems; recursively enumerable sets; the recursion theorem; the undecidability of elementary arithmetic. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 762 - Model Theory (3 Credits)**

First order predicate calculus; elementary theories; models, satisfaction, and truth; the completeness, compactness, and omitting types theorems; countable models of complete theories; elementary extensions; interpolation and definability; preservation theorems; ultraproducts. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 768 - Selected Topics in Foundations of Mathematics (3 Credits)**

Course content varies and will be announced in the schedule of classes by title. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 770 - Discrete Optimization (3 Credits)**

The application and analysis of algorithms for linear programming problems, including the simplex algorithm, algorithms and complexity, network flows, and shortest path algorithms. No computer programming experience required. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 774 - Discrete Mathematics I (3 Credits)**

An introduction to the theory and applications of discrete mathematics. Topics include enumeration techniques, combinatorial identities, matching theory, basic graph theory, and combinatorial designs. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 775 - Discrete Mathematics II (3 Credits)**

A continuation of MATH 774. Additional topics will be selected from: the structure and extremal properties of partially ordered sets, matroids, combinatorial algorithms, matrices of zeros and ones, and coding theory. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 774.

**MATH 776 - Graph Theory I (3 Credits)**

The study of the structure and extremal properties of graphs, including Eulerian and Hamiltonian paths, connectivity, trees, Ramsey theory, graph coloring, and graph algorithms. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 777 - Graph Theory II (3 Credits)**

Continuation of MATH 776. Additional topics will be selected from: reconstruction problems, independence, genus, hypergraphs, perfect graphs, interval representations, and graph-theoretical models. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 776.

**MATH 778 - Selected Topics in Discrete Mathematics (3 Credits)**

Course content varies and will be announced in the schedule of classes by title. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 780 - Elementary Number Theory (3 Credits)**

Diophantine equations, distribution of primes, factoring algorithms, higher power reciprocity, Schnirelmann density, and sieve methods. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 780I - Theory of Numbers (3 Credits)**

Elementary properties of integers, Diophantine equations, prime numbers, arithmetic functions, congruences, and the quadratic reciprocity law. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 241 or equivalent.

**MATH 782 - Analytic Number Theory I (3 Credits)**

The prime number theorem, Dirichlet's theorem, the Riemann zeta function, Dirichlet's L-functions, exponential sums, Dirichlet series, Hardy-Littlewood method partitions, and Waring's problem. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 580 and MATH 552.

**MATH 783 - Analytic Number Theory II (3 Credits)**

The prime number theorem, Dirichlet's theorem, the Riemann zeta function, Dirichlet's L-functions, exponential sums, Dirichlet series, Hardy-Littlewood method partitions, and Waring's problem. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 580 and MATH 552.

**MATH 784 - Algebraic Number Theory (3 Credits)**

Algebraic integers, unique factorization of ideals, the ideal class group, Dirichlet's unit theorem, application to Diophantine equations. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 546 and MATH 580.

**MATH 785 - Transcendental Number Theory (3 Credits)**

Thue-Siegel-Roth theorem, Hilbert's seventh problem, diophantine approximation. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 580.

**MATH 788 - Selected Topics in Number Theory (3 Credits)**

Course content varies and will be announced in the schedule of classes by title. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 790 - Graduate Seminar (1 Credit)**

Although this course is required of all candidates for the master's degree it is not included in the total credit hours in the master's program. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 791 - Mathematics Pedagogy I (0-1 Credits)**

First of two required math pedagogy courses for graduate assistants in the department. Pedagogical topics include assessment theory, discourse, theory, lesson planning, and classroom management. Applications assist graduate students with syllabus/lesson/assessment creation, teacher questioning, midcourse evaluations, and student learning and engagement. This course will replace the University's requirement for GRAD 701. Restricted to Mathematics graduate students teaching at some capacity.

**MATH 792 - Mathematics Pedagogy II (0-1 Credits)**

Second of two required math pedagogy courses for graduate assistants in the department. Pedagogical topics include student-learning and reflection theories, sociomathematical norms, and constructivism. Applications assist graduates with lesson/revision/reflection, student-centered investigations, curriculum problem solving and metacognition. This course will replace the University's requirement for GRAD 701. Restricted to Mathematics graduate students teaching at some capacity.  
**Prerequisites:** Satisfactory grade in MATH 791.

**MATH 797 - Mathematics into Print (3 Credits)**

The exposition of advanced mathematics emphasizing the organization of proofs and the formulation of concepts; computer typesetting systems for producing mathematical theses, books, and articles.

**MATH 798 - Directed Readings and Research (1-6 Credits)**

Full admission to graduate study in mathematics. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 799 - Thesis Preparation (1-9 Credits)**

For master's candidates. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 890 - Graduate Seminar (1-3 Credits)**

A review of current literature in specified subject areas involving student presentations. Content varies and will be announced in the schedule of classes by title. Minimum of 3 credit hours required of all doctoral students. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 899 - Dissertation Preparation (1-12 Credits)**

For doctoral candidates.

## Mathematics, M.A.

The M.A. is designed primarily for students who wish to enter a Ph.D. program in mathematics. A student's program of study for this degree is usually narrower than the M.S. in scope but more intense in content. Course work for the degree is regarded as preparatory for the Ph.D.

### Learning Outcomes

- MM students will demonstrate an understanding of algebra, calculus, statistics and geometry as taught at the secondary level, and the basic elements of group theory, ring theory, and real analysis, that is, the material of core curriculum courses listed above. MS and MA students will master the material of the core curriculum courses listed above, as well as the foundational material of their specialty. The level of problem formulation and solution, and written expository skill, should reach a level adequate for the writing of a thesis. [Note: specific topics could be itemized here as in the PhD plan, but since the three degrees have such different programs of study, this would probably be excessively lengthy.]

- All students who are GTA's will demonstrate teaching proficiency in the settings described in the Curriculum above.

## Degree Requirements (30 Hours)

The M.A. degree requires a thesis and 30 approved semester hours of graduate mathematics course work, including the three-credit thesis course, MATH 799. All courses in the student's program must be numbered 700 and above (excluding 7xx-I courses) and must include a one-year sequence in real and complex analysis (MATH 703 - MATH 704) and one of the one-year sequences in abstract algebra (MATH 701 - MATH 702) or in the foundations of computational mathematics (MATH 708 - MATH 709). These courses form the core of the student's program and provide the topics upon which the Masters Comprehensive Examination (Admission to Candidacy) is based; a "master's pass" or "pass" is required.

The thesis for this degree is generally a short monograph (to be bound and delivered to the department), the content of which is drawn from several current research papers, possibly including the student's original contributions, which could lead to topics of suitable depth for a Ph.D. dissertation. The thesis is subject to the approval of the thesis committee, consisting of the major professor and a second reader. The student is invited to present the thesis to the department in a seminar format.

## Mathematics, M.M.

The department offers two degree programs for students who wish to emphasize secondary and junior college mathematics education—the M.A.T. and the M.M. degrees. Courses at the 700-level specifically designed for these programs are designated by the letter I adjoined to the course number. These courses are generally offered in the late afternoon during the academic year and during the summer to provide area teachers the opportunity to work toward a degree on a part-time basis.

The Master of Mathematics degree is designed primarily for students who seek a broad, thorough training in mathematics which includes course work specifically designed to meet the needs of secondary-school teachers for whom SC certification is not an issue, and for those intending to teach at the junior/community college level.

### Learning Outcomes

- MM students will demonstrate an understanding of algebra, calculus, statistics and geometry as taught at the secondary level, and the basic elements of group theory, ring theory, and real analysis, that is, the material of core curriculum courses listed above. MS and MA students will master the material of the core curriculum courses listed above, as well as the foundational material of their specialty. The level of problem formulation and solution, and written expository skill, should reach a level adequate for the writing of a thesis. [Note: specific topics could be itemized here as in the PhD plan, but since the three degrees have such different programs of study, this would probably be excessively lengthy.]
- All students who are GTA's will demonstrate teaching proficiency in the settings described in the Curriculum above.

## Degree Requirements (30 Hours)

The M.M. degree requires 30 approved semester hours of graduate course work, up to 6 hours of which may be outside the departments of mathematics, computer science, and statistics. A core of four courses

is required of all students: MATH 701I, MATH 702I, MATH 703I, and MATH 704I.

In addition, students must include in their program (if similar courses have not been taken previously) a course in geometry (chosen from MATH 531 or MATH 736I) and a course in linear algebra (MATH 526 or MATH 544). To ensure breadth in the program of study, the remaining course work should include courses in discrete mathematics, number theory, and probability and statistics.

Each candidate for the M.M. degree is required to pass a written Comprehensive Examination, which is based primarily on the four core courses. The examination will consist of two, two-to-three hour written examinations. Students should take the Comprehensive Examination immediately upon completion of the core courses

## Mathematics, M.S.

The M.S. is designed primarily for students who seek broad and intensive preparation for teaching in a junior college or working in industry.

### Learning Outcomes

- MM students will demonstrate an understanding of algebra, calculus, statistics and geometry as taught at the secondary level, and the basic elements of group theory, ring theory, and real analysis, that is, the material of core curriculum courses listed above. MS and MA students will master the material of the core curriculum courses listed above, as well as the foundational material of their specialty. The level of problem formulation and solution, and written expository skill, should reach a level adequate for the writing of a thesis.
- All students who are GTA's will demonstrate teaching proficiency in the settings described in the Curriculum above.

### Degree Requirements (30 Hours)

The M.S. degree requires a thesis and 30 approved semester hours of graduate course work, including satisfactory completion of the three-credit thesis course MATH 799, MATH 703, and at least one of MATH 701, MATH 708, and MATH 709. The courses in the student's program should be numbered 700 and higher. However, in special circumstances some 500-level courses, or 7xx-I courses, may be approved for a student's program if the courses supplement 700-level course work. In general, a student's M.S. program should be fairly broad in scope and should include courses of both a pure and applied nature.

The thesis for this degree is generally a short monograph (to be bound and delivered to the department), the content of which is drawn from several research papers in an area of interest to the student. The thesis is subject to the approval of the thesis committee, consisting of the major professor and a second reader.

Upon conclusion of the program, each M.S. degree candidate either undergoes an oral examination administered by the thesis committee (the "defense", which includes an oral presentation of the thesis and also serves as the Masters Comprehensive Exam), or obtains a pass on the Masters Comprehensive Examination (a "master's pass" on the Admission to Candidacy Examination). Students who follow the second path are invited to present the thesis in a seminar format.

## Mathematics, Ph.D.

The Ph.D degree in mathematics at the University of South Carolina serves to prepare students for professional careers in academic research, college and university teaching, business, industry, and government.

### Learning Outcomes

- Students will demonstrate mastery of the core mathematical areas of analysis and either abstract algebra or foundations of computational mathematics. Students will not only master content in these areas, but they will also develop and hone expository skills approaching the level necessary for them to write a dissertation.
- Students will select a research problem or problems in consultation with their dissertation advisor (major professor). Students will then write a dissertation on the results of their research, consisting of publishable contributions that build on the existing literature.
- We expect all students to write cogent and convincing mathematics, using contemporary presentation standards.
- The Department expects graduates to be able to orally communicate sophisticated mathematics at the level of a professional mathematician.
- Students will demonstrate proficient teaching in a variety of settings. These include, for example, serving as a teaching assistant for calculus I or II, or serving as instructor of record for college algebra, pre-calculus, calculus for business and social sciences, finite math, discrete math, calculus I, II, III, or elementary differential equations.

### Degree Requirements (60 Post-Baccalaureate Hours)

The PhD is designed to produce a skilled, professional mathematician who is trained to conduct research in mathematics, function effectively as a classroom teacher at the college level, or become a professional practitioner in an industrial, business, government, or national laboratory setting.

Each candidate for the PhD degree is required to complete a minimum of 60 hours of course work beyond the baccalaureate degree, including 12 credit hours of dissertation research and writing (MATH 899). Students are advised by a doctoral committee. This committee is generally chaired by the major professor (dissertation supervisor) and consists of at least four members, one from outside the department. The core members are writers of the student's Comprehensive Exams.

Students pursuing the PhD degree in mathematics are required to take three examinations: the Admission to Candidacy, Comprehensive, and Doctoral Defense Examinations.

The Admission to Candidacy Examination in mathematics consists of two four-hour written examinations and is administered with two options. The first examination for both options is based primarily, but not exclusively, on the content of the one-year sequence in real and complex analysis (MATH 703 - MATH 704). The second examination for the first option is based primarily, but not exclusively, on the subject matter of the one-year sequence in abstract algebra (MATH 701 - MATH 702). The second examination for the second option is based primarily, but not exclusively, on the subject matter of the one-year sequence in the foundations of computational mathematics (MATH 708 - MATH 709). Two attempts of the Admission to Candidacy Examination are allowed. The first attempt should occur before the start of the second year. The second attempt must be made at the next scheduled examination.

Exceptions to the time constraint for unusual cases may be petitioned to the Graduate Director. Note that the exams are based upon the content of the various courses; it is not required that the well-prepared student take all, or even any, of these courses, although it is generally advisable to do so. Students need only be admitted to candidacy once: if a student passes the exam based upon one of the options, say MATH 708 - MATH 709 (or respectively MATH 701 - MATH 702); but later wishes to specialize in an area for which the other option is more appropriate, then the content of MATH 701 - MATH 702 (or respectively MATH 708 - MATH 709) should be learned either by taking these courses or by independent study.

The PhD Comprehensive is an in-depth examination consisting of a written part administered in three sessions of four hours each and an oral component. The written portion of the examination must either include the subject matter of one year sequences numbered 710 or higher selected from two (or, exceptionally, three) of the eight areas listed in the Graduate Handbook, or, for the Concentration in ACM, from Groups 1 and 2 as described in the Graduate Handbook. In both cases, the subject matter of the student's research area should be tested in depth. The oral portion of the comprehensive will be based on the student's program of study and may include topics not covered by either the Admission to Candidacy Examination or the written portion of the Comprehensive Examination.

The Comprehensive Examination may be repeated only once. All portions of the examination must be completed within three weeks. As a general rule, the exam is offered twice each year, once in August and again in January, and should be taken after candidates have completed all or most of the courses required in their program, and before commencement of dissertation research. The examination must be completed at least 60 days prior to the receipt of the degree.

To complete the program, the student must write a dissertation, under the direction of a member of the graduate faculty, and defend the content of the dissertation in a final examination before the doctoral committee. It is expected that the content of the student's dissertation will be a significant contribution to the body of current research and will be published in a reputable journal.

To ensure breadth of mathematical training, each student is required to satisfactorily complete (B or better) 12 credit hours of course work in subject areas not covered by the Comprehensive Examination. Directed reading courses (MATH 798) may not be used to satisfy this requirement. Particular courses may be stipulated by the student's doctoral committee. The selection of the courses is subject to approval by the Graduate Director.

## Doctor of Philosophy Degree: Concentration in Applied and Computational Mathematics (ACM)

Within the course, exam, and dissertation framework of the PhD, a student may, by selecting courses with some care, complete a program of study with an ACM Concentration; this will be denoted as an "Area of Emphasis" on the final transcript. It is still possible, of course, to write a dissertation in an ACM area without participating in the formal concentration. The concentration is distinguished from the ordinary Ph.D. by three year-long sequences (18 credit hours). It is strongly recommended that the Admission to Candidacy Examination be based upon MATH 703 - MATH 704 and MATH 708 - MATH 709. If admission to candidacy is achieved by passing the exam based upon MATH 703

- MATH 704 and MATH 708 - MATH 709, then it is expected that the student either take MATH 708 - MATH 709 (6 credit hours) or learn this material independently. The ACM Concentration is also distinguished by the courses upon which the Comprehensive Exam is based. Two year-long sequences (12 credit hours) must be chosen from the ACM areas Groups 1 and 2 as described in the Graduate Handbook. The third sequence is not restricted.

The breadth requirement for the ACM Concentration is the same as for the ordinary PhD (12 credit hours drawn from subjects not covered by the Comprehensive Examination). A well-rounded program of study will normally encompass four different subjects, as listed in the Graduate Handbook. These should be selected in consultation with major professor, doctoral committee, and Graduate Director.

## Philosophy

Department Website (<http://www.cas.sc.edu/phil/>)

Michael Dickson, *Chair*

The USC Department of Philosophy is an intellectually active and pluralistic community offering a congenial environment for graduate study. We host numerous invited speakers, workshops, and major conferences. The history of philosophy is foundational in the undergraduate and graduate programs and is a crucial part of the methodology of the faculty. The department has significant clusters of faculty who work in two special areas of research:

- The history and philosophy of science: We emphasize issues and methods that are closely tied to the actual content of the sciences, whether contemporary or historical. The faculty has particular strengths in the philosophy of physics, chemistry, mathematics, medicine, engineering, and technology.
- Theoretical and practical ethics: We see normative issues as intertwined with a host of other philosophical, scientific, and historical issues. The faculty has particular strengths in normative ethical theory, bioethics, engineering ethics, environmental ethics, and the ethics of emerging technologies.

Additionally, individual faculty members have research and teaching interests in the following areas: ancient philosophy, early modern philosophy, American pragmatism, twentieth century analytic philosophy, existentialism and phenomenology, contemporary European social philosophy, philosophy of language and mind, and philosophy of logic. The department collaborates with other units within the College of Arts and Sciences, including biology, chemistry, classics, comparative literature, history, linguistics, physics, psychology, religious studies, and women's studies. Individual faculty members also work in collaboration with other units across campus, including the School of Medicine, the School of the Environment, and the Consortium for Science, Technology, Environment, and Medicine in Society.

## Deadlines

Students are normally admitted to the program only in the fall semester. The absolute deadline for applying for the fall semester is July 1. However, to receive full consideration for financial assistance, applications should be completed before January 15. Applicants who do not meet the January deadline will still be considered for and may even be awarded support, but opportunities become increasingly limited after this date.

## Admissions

The philosophy department admits new students into the M.A. and Ph.D. programs in the fall semester of each year. Applications for admission are reviewed during the previous spring term. Normally, to be admitted with full standing into either program, a student will have completed 18 hours of course work in philosophy above the introductory level. Applicants must also have met the general admission requirements of The Graduate School.

Applicants should arrange for three letters of recommendation, transcripts, and GRE scores to be sent to The Graduate School. Applicants whose native language is not English should also arrange for TOEFL or IELTS Intl. exam scores to be sent to The Graduate School. In addition, all applicants should send a sample of philosophical writing (maximum length 6,000 words) and a brief statement of purpose (400 words) to the department.

Letters of recommendation should come from persons familiar with the applicant's academic achievement and potential and should specifically address the applicant's potential for success in a graduate degree program.

Transcripts of prior undergraduate and graduate work must show sufficient promise of ability to do graduate work. Hence the department looks for GPAs in the range from 3.00 to 4.00 for all undergraduate work and 3.50 to 4.00 for all graduate work (on a 4.00 scale).

We look for GRE scores above 1250 on the verbal reasoning and quantitative reasoning portions of the exam. Scores of at least 5 on the analytical writing section are generally acceptable.

Applicants whose native language is not English are required to submit a satisfactory score on the TOEFL or the IELTS Intl. Academic Course Type 2 exam. For admission to the Ph.D. program, applicants should submit a TOEFL score of at least 590 PBT or 96 IBT. For admission to the M.A. program, applicants must achieve a minimum score of 570 PBT or 80 IBT, which is also the minimum requirement for entrance into The Graduate School. The minimum acceptable overall band score on the IELTS Intl. Academic Course Type 2 exam is 6.5.

Evidence of high potential from several parts of an applicant's file may occasionally outweigh a low test score or a low GPA.

Students whose undergraduate major was not philosophy may be considered for admission on a conditional basis. If admitted, special programs will be arranged to provide them with the background necessary for graduate study. Unsuccessful applicants to the Ph.D. program who do not already have a master's degree in philosophy will automatically be considered for admission to the M.A. program.

## Programs

- Philosophy, M.A. (p. 106)
- Philosophy, Ph.D. (p. 107)

## Courses

### PHIL 501 - British Empiricism (3 Credits)

A historical and critical survey of the British philosophers of experience. Principal concentration is on Locke, Berkeley, and Hume.

**Prerequisites:** C or better in PHIL 304.

### PHIL 502 - Continental Rationalism (3 Credits)

A critical and historical study of the 17th-century European philosophers. The works of Descartes, Spinoza, and Leibniz are emphasized.

**Prerequisites:** C or better in PHIL 304.

### PHIL 503 - Analytic Philosophy (3 Credits)

A critical study of recent and contemporary works in philosophical analysis, and an evaluation of the purposes, methods, and results of this movement.

**Prerequisites:** C or better on 3 hours in philosophy beyond the 100 level.

### PHIL 504 - Phenomenology and Existentialism (3 Credits)

A critical study of some fundamental themes in phenomenology and the philosophy of existence. Emphasis is placed on an intensive study of selected works of such writers as Kierkegaard, Jaspers, Husserl, and Heidegger.

**Prerequisites:** C or better in PHIL 304 or PHIL 305.

### PHIL 505 - Plato (3 Credits)

An intensive study of selected Dialogues by Plato.

**Prerequisites:** C or better in PHIL 301.

### PHIL 506 - Aristotle (3 Credits)

An intensive study of some of the more important of Aristotle's works.

**Prerequisites:** C or better in PHIL 301.

### PHIL 507 - Medieval Philosophy (3 Credits)

A historical and critical study of the works of the leading medieval philosophers.

**Prerequisites:** C or better in PHIL 303.

### PHIL 508 - Hume (3 Credits)

An intensive study of the philosophical writings of Hume, especially A Treatise of Human Nature.

**Prerequisites:** C or better in PHIL 304.

### PHIL 509 - Kant (3 Credits)

An intensive study of the work of Kant, especially the Critique of Pure Reason.

**Prerequisites:** C or better in PHIL 304.

### PHIL 510 - Theory of Knowledge (3 Credits)

An examination of some representative theories of truth, meaning, probability, and perception.

**Prerequisites:** C or better in 3 hours in philosophy beyond the 100 level.

### PHIL 511 - Symbolic Logic (3 Credits)

A presentation and philosophical examination of the fundamentals of modern symbolic logic.

**Prerequisites:** C or better in PHIL 115.

### PHIL 512 - Philosophy of Science (3 Credits)

A critical examination of methods and concepts of the sciences. Topics include scientific revolutions, the unity of science, experimentation, explanation, and evidence.

**Prerequisites:** C or better in 3 hours in philosophy beyond the 100 level.

### PHIL 513 - Philosophy of History (3 Credits)

A philosophical examination of historical inquiry. Theories of historical development. The logical problems of historical explanation.

**Prerequisites:** C or better in 3 hours in philosophy beyond the 100 level.

**PHIL 514 - Ethical Theory (3 Credits)**

Survey of recent and historical developments in ethical theory with special emphasis on the meaning of ethical language and the forms of reasoning employed in discussing moral values.

**Prerequisites:** C or better in PHIL 320.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

**PHIL 515 - Philosophy of Religion (3 Credits)**

A critical study of selected problems in the philosophy of religion. Emphasis is placed on problems relating to the existence of God, religious knowledge, and the language of religion.

**Prerequisites:** C or better in 3 hours in philosophy beyond the 100 level.

**PHIL 516 - Advanced Aesthetics (3 Credits)**

Detailed examination of the literature on aesthetics.

**Prerequisites:** C or better in 3 hours in philosophy beyond the 100 level.

**PHIL 517 - Philosophy of Language (3 Credits)**

An examination of concepts and problems such as meaning, reference, analyticity, definition, and the relation between logic and philosophy.

**Prerequisites:** C or higher in PHIL 114 or PHIL 511.

**Cross-listed course:** LING 565

**PHIL 518 - Philosophy of the Social Sciences (3 Credits)**

The goals of inquiry and problems such as objectivity, reduction, value freedom, and ideology.

**Prerequisites:** C or better in 3 hours in philosophy beyond the 100 level.

**PHIL 519 - Metaphysics (3 Credits)**

Major issues in classical and modern metaphysics. Topics include the idea of first philosophy, being, substance, the problem of universals, essentialism, causation, time and space, and metaphysical method.

**Prerequisites:** C or better in PHIL 350 or PHIL 351 or PHIL 360.

**PHIL 520 - Philosophy of Mind (3 Credits)**

The concept of mind, the mind-body problem, emotions and cognition, the possibility of artificial minds, theories of embodied cognition.

**Prerequisites:** C or better in PHIL 350 or PHIL 351 or PHIL 360.

**PHIL 521 - Mathematical Logic (3 Credits)**

Axiomatic development of logic and the set-theoretic foundations of mathematics.

**Prerequisites:** C or better in PHIL 511.

**PHIL 522 - Introduction to Semantics (3 Credits)**

Introduction to the study of linguistic meaning, including the following topics: meaning, reference, and truth; the connections among language, thought, and reality; word meaning and sentence meaning; possible worlds and modality; thematic roles; meaning and context; presupposition and implicature; speech acts; formal semantics; and cognitive semantics.

**Prerequisites:** C or better in any of LING 300, LING 301, LING 600, PHIL 114, PHIL 511.

**PHIL 523 - Advanced Topics in Logic (3 Credits)**

Philosophical problems about logic, the development of philosophical logics, and the problems surrounding them.

**Prerequisites:** C or better in PHIL 511.

**PHIL 524 - Philosophy of Biology (3 Credits)**

Examination of major conceptual, theoretical, and methodological issues in biological science. Topics include reductionism, units of selection, adaptationism, relations between evolutionary and developmental biology and between biology and society.

**Prerequisites:** C or better in 3 hours of Philosophy beyond the 100 level.

**PHIL 526 - Hellenistic Philosophy (3 Credits)**

Survey of the major schools and trends in Hellenistic philosophy: Epicureans, Stoics, Academic Skeptics. Topics include eudaimonism, hedonism, monism, teleology, and the criterion of truth.

**Prerequisites:** C or better in PHIL 301 or PHIL 302.

**PHIL 527 - Virtues, Acts, and Consequences (3 Credits)**

Recent contributions to three central strands of ethical theory: virtue theory, deontology, and utilitarianism; historical roots and recent developments.

**Prerequisites:** C or better in PHIL 320.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

**PHIL 528 - Concepts of Evidence (3 Credits)**

Systematic approaches to data analysis—Bayesian, Fisherian and decision theoretic—will be critically appraised. Applications of these theories to some problems of inductive logic: the paradoxes of confirmation, the role of simplicity, and the probability of inductive generalizations.

**Prerequisites:** C or better in PHIL 350 or PHIL 351 or PHIL 360.

**PHIL 532 - Social Justice (3 Credits)**

Recent theories of distributive justice and their application to such issues as redistribution of wealth, reverse discrimination, and the conflict between liberty and equality. Authors include Rawls, Nozick, Hayek, and Popper.

**Prerequisites:** C or better in PHIL 320 or PHIL 321 or PHIL 322 or PHIL 330 or PHIL 331.

**Graduation with Leadership Distinction:** GLD: Community Service, GLD: Diversity and Social Advocacy, GLD: Global Learning

**PHIL 534 - Contemporary European Social Philosophy (3 Credits)**

An examination of European social philosophy associated with either the Frankfurt School of Social Research or contemporary French Poststructuralism.

**Prerequisites:** C or better in 3 hours in philosophy beyond the 100 level.

**PHIL 535 - Ecofeminism (3 Credits)**

An exploration of the connections between oppression of women and oppression of nature.

**Prerequisites:** 3 hours in philosophy beyond the 100 level.

**Cross-listed course:** WGST 535

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy, GLD: Professional and Civic Engagement Leadership Experiences

**PHIL 536 - Language and Interpretation in Contemporary European Philosophy (3 Credits)**

Selected contemporary European philosophical movements, their views on language, and their approach to interpretation: hermeneutics, structuralism, poststructuralism.

**Prerequisites:** C or better in PHIL 114.



**PHIL 540 - Renaissance Philosophy (3 Credits)**

Humanism (e.g., Petrarca), Platonism (e.g., Pico and Ficino), Aristotelianism (e.g., Pomponazzi), philosophies of nature (e.g., Telesio, Campanella, and Bruno), and Nicholas of Cusa, Erasmus, Montaigne, and Suarez.

**Prerequisites:** C or better in PHIL 301 or PHIL 302 or PHIL 303.

**PHIL 550 - Health Care Ethics (3 Credits)**

An exploration of the ethical dimensions of patient care in the clinical setting.

**Prerequisites:** C or better in PHIL 320 or PHIL 321 or PHIL 322 or PHIL 330 or PHIL 331.

**PHIL 598 - Readings in Philosophy (3 Credits)**

Prerequisite: 6 hours in philosophy beyond the 100 level.

**PHIL 701 - Studies in Ancient Philosophy (3 Credits)****PHIL 705 - Studies in 17th- and 18th-Century Philosophy (3 Credits)****PHIL 706 - Studies in Continental Philosophy (3 Credits)**

Study of the works of one or more major contemporary continental philosophers.

**PHIL 707 - Studies in 19th-Century Philosophy (3 Credits)****PHIL 709 - Studies in 20th-Century Philosophy (3 Credits)****PHIL 710 - Ethics and the Health Sciences (1-4 Credits)**

Students are introduced to formal and informal codes of professional conduct of various health science disciplines and understand the implications of these distinctions for interdisciplinary research, clinical practice, and administration.

**PHIL 711 - Studies in Ethics (3 Credits)****PHIL 712 - Studies in Theory of Knowledge (3 Credits)****PHIL 714 - Philosophy of Science (3 Credits)****PHIL 715 - Ethics in Criminal Justice (3 Credits)**

Classic and contemporary theories of ethics and their applications to criminal justice decision-making.

**Cross-listed course:** CRJU 714

**PHIL 716 - Philosophy of Mind (3 Credits)**

Topics and problems arising in the philosophy of mind.

**PHIL 717 - Pragmatic Theory (3 Credits)**

Study of formal approaches to pragmatic phenomena such as focus, presupposition, and implicature; examination of deictic, contextual and perspectival expressions; survey of pragmatic frameworks such as Relevance Theory and Discourse Representation Theory; study of information structural properties of natural languages, including topic-comment structure, given-new contrasts, definiteness versus indefiniteness.

**Prerequisites:** LING 600 or LING 627.

**Cross-listed course:** LING 729

**PHIL 718 - Studies in Philosophy of Language (3 Credits)**

Examination of concepts such as meaning, reference, analyticity, and translational indeterminacy; evaluation of accounts of speech acts, the semantics of propositional attitudes, metaphor, and other pragmatic phenomena.

**Cross-listed course:** LING 765

**PHIL 719 - Semantic Theory (3 Credits)**

The formal study of linguistic meaning, including the following topics: Fregean truth-conditional semantics; lexical decomposition; predication and modification; lambda abstraction; generalized quantification; intentional and extensional contexts; tense, aspect, and modality; propositional attitudes; and indexicality.

**Prerequisites:** LING 600 or LING 627.

**Cross-listed course:** LING 728

**PHIL 720 - Studies in Philosophy of Religion (3 Credits)****PHIL 721 - Pragmatism (3 Credits)****PHIL 723 - Hegel (3 Credits)****PHIL 724 - Speculative Metaphysics (3 Credits)****PHIL 735 - Contemporary Political Philosophy (3 Credits)**

Recent work in philosophy regarding political and social values, principles of justice, political authority, institutions, and related subjects.

**PHIL 760 - Special Topics in Philosophy (3 Credits)****PHIL 763 - Epistemology (3 Credits)**

Survey of historical and recent trends in epistemology.

**PHIL 764 - Metaphysics (3 Credits)**

Survey of historical and recent trends in metaphysics.

**PHIL 767 - Case Study in the Philosophy of Science (3 Credits)**

Introduction to the method of studying historical cases in the philosophy of science. This course revolves around the sustained treatment of one or two such cases.

**PHIL 769 - Jurisprudence (2-3 Credits)**

An examination of a number of philosophical problems about the law: the nature and function of rules, the difference between legal rules and other rules, the nature of reasoning from legal rules, the concept of a legal system, and the relation of law and morals.

**PHIL 790 - Teaching Philosophy (3 Credits)**

Materials, techniques, and problems of teaching philosophy. Repeatable for credit.

**PHIL 797 - Independent Study (3 Credits)**

Requires permission of instructor.

**PHIL 798 - Research Seminar (1 Credit)**

Student and faculty presentations of current research in specified subject areas. Content varies. May be repeated for credit.

**PHIL 799 - Thesis Preparation (1-9 Credits)**

CL: 2020.

**PHIL 835 - Seminar in Environmental Ethics (3 Credits)**

Examination of the intellectual, cultural, and ethical frameworks within which environmental problems arise and are solved.

**Cross-listed course:** ENVR 835

**PHIL 847 - Modern Philosophies of Education (3 Credits)**

Critical comparison of present-day schools of thought on the nature, objectives, and functions of American education.

**Prerequisites:** Education 744 or equivalent.

**Cross-listed course:** EDFI 847

**PHIL 899 - Dissertation Preparation (1-12 Credits)**

# Philosophy, M.A.

## Learning Outcomes

- Students will demonstrate a breadth of knowledge of philosophy by successfully completing a diverse range of courses satisfying MA degree requirements.
- MA students, whether on the Thesis or No-Thesis track, will be able to conduct research and write up results of an extended investigation in philosophy.
- MA students are expected to complete coursework and graduate in a timely fashion.
- MA students will be admitted into PhD programs, if they desire.

## Degree Requirements (30 Hours)

Students in the M.A. program may elect either the thesis or non-thesis option.

### Course Requirements

Students in the M.A. program may elect either the thesis or non-thesis option. Students in the M.A. program who choose to write a thesis are required to take eight graduate philosophy courses (24 non-thesis semester hours), at least four of which must be at the 700-level taken in face-to-face format. An additional 6 semester hours of PHIL 799 are also required. Without a thesis, eleven courses (33 non-thesis semester hours) are required, at least 6 of which must be at the 700-level taken in face-to-face format.

### Logic Requirement

Successful completion of PHIL 511, taken either as an upper-level undergraduate course or as part of the graduate program, is required of all M.A. students.

### History Requirement

Successful completion of at least two upper-level history-of-philosophy courses is required of all M.A. students: at least one from Ancient to Renaissance Philosophy, and at least one from Early to Late Modern Philosophy.

#### Ancient to Renaissance Philosophy

Course	Title	Credits
PHIL 505	Plato	3
PHIL 506	Aristotle	3
PHIL 526	Hellenistic Philosophy	3
PHIL 701	Studies in Ancient Philosophy	3
PHIL 507	Medieval Philosophy	3
PHIL 540	Renaissance Philosophy	3

#### Early to Late Modern Philosophy

Course	Title	Credits
PHIL 501	British Empiricism	3
PHIL 502	Continental Rationalism	3
PHIL 508	Hume	3
PHIL 509	Kant	3
PHIL 723	Hegel	3
PHIL 705	Studies in 17th- and 18th-Century Philosophy	3
PHIL 707	Studies in 19th-Century Philosophy	3
PHIL 709	Studies in 20th-Century Philosophy	3

PHIL 503	Analytic Philosophy	3
PHIL 721	Pragmatism	3
PHIL 504	Phenomenology and Existentialism	3
PHIL 534	Contemporary European Social Philosophy	3
PHIL 706	Studies in Continental Philosophy	3

### Language Requirement

A reading knowledge of one foreign language is required of all M.A. students. The Department of Languages, Literatures, and Cultures administers tests of foreign language competency.

### Comprehensive Examination

The MA Comprehensive Exam is a written exam consisting of a revised version of one of the student's first-year papers or a similarly-high-quality paper on an approved topic of interest to the student. This paper will be assessed by two faculty members, to be designated by the Director of Graduate Studies in consultation with the student and possible examiners. Normally the paper will be written under the supervision of at least one of the examiners.

The MA comprehensive exam is intended to demonstrate mastery of the skills required for basic philosophical writing. These include the ability to articulate and defend a thesis on the basis of argument and textual interpretation. The standards for assessing the MA exam lie between the standards for evaluating undergraduate work and PhD-level work. While the MA comprehensive exam assesses many of the same skills involved in undergraduate writing, the exam holds students to a high standard, because it requires mastery of these skills. On the other hand, the MA comprehensive exam is less demanding than the PhD comprehensive exam, because the former does not require students to make an original contribution to the literature and, consequently, does not require the level of research needed to show that such a standard has been met. Rather, the extent of research involved in the MA comprehensive exam is variable and depends upon the paper topic and the judgment of the faculty advisor.

These papers will vary in length (15 to 30 pages, 12pt, double-spaced, etc.). A final version must be submitted to the examiners and to the Director of Graduate Studies by August 15 prior to the beginning of the student's second year in the program.

These papers are graded "pass" or "fail." The result will be reported to the Graduate Director and to the student within ten days of the examiners' receipt of the paper. A student whose August 15 paper does not pass may resubmit a revised version at most once anytime before the following January 16. The result of that second assessment will determine whether the student passes or fails the MA Comprehensive Exam.

### Thesis Option

Students who choose the thesis option must also write a master's thesis. The thesis topic should be chosen in consultation with the Director of Graduate Studies and a member of the Graduate Faculty. The latter will act as thesis director and first reader. Another member of the faculty, appointed by the Director of Graduate Studies, will act as second reader. A thesis proposal approved by the two readers should be submitted to the Director of Graduate Studies, normally within sixty days of the date on which the M.A. Comprehensive Examination is passed. The proposal should be several pages in length, outlining the topic and argumentative structure of the proposed thesis. It should include a title, and be accompanied by a fairly substantial bibliography.

Theses vary in length, but are typically about 15,000 words long (60 pages, double-spaced). Normally a thesis goes through a number of drafts before it is approved. A final draft of the thesis must be submitted to the two readers for their approval at least five weeks before the end of the term in which the student plans to graduate.

## Philosophy, Ph.D.

### Learning Outcomes

- Students must demonstrate competence in three periods in the history of philosophy from the following periods:
  - I: Ancient
  - II: Medieval and Renaissance
  - III. Early Modern (17th - 18th Century)
  - IV: Modern (19th - 20th Century)
- Students must demonstrate knowledge in the following core areas:
  - Epistemology
  - Metaphysics
  - Ethics
  - Logic
  - Philosophy of Science
- Students will complete an original and substantive research project in their area of specialization.
- Students will develop the professional skills required to contribute to philosophical research.
- Students who have successfully submitted dissertation proposals will seek to place their work in professional venues (professional conferences and/or journals).
- Students will develop any language skills required for conducting research in their area of specialization.
- Students will develop specialized knowledge of a particular philosophical area.
- Students will be able to offer effective instruction at the undergraduate level in philosophy.

### Degree Requirements (60 Post-Baccalaureate Hours)

Doctoral students who enter the Ph.D. program without a master's degree in philosophy must pass 16 graduate courses. At least 8 of these courses must be 700-level and be taken in traditional face-to-face format.

Doctoral students who enter the Ph.D. program with a master's degree in philosophy must pass 8 or more courses. At least 6 of these courses must be 700-level and be taken in traditional face-to-face format.

Both cases require at least 12 additional hours of dissertation preparation.

#### Core Courses

Must successfully pass within the first 2 years in the program.

#### Philosophy of Science Requirement

Pass at least one course. Course must be approved by the Director of Graduate Studies.

#### History Requirement

Ph.D. students must pass at least one course in each of three historical periods, normally to be one course from each of the following three lists:

#### Ancient to Renaissance

Course	Title	Credits
PHIL 505	Plato	3
PHIL 506	Aristotle	3
PHIL 507	Medieval Philosophy	3
PHIL 526	Hellenistic Philosophy	3
PHIL 540	Renaissance Philosophy	3
PHIL 701	Studies in Ancient Philosophy	3

#### Early Modern

Course	Title	Credits
PHIL 501	British Empiricism	3
PHIL 502	Continental Rationalism	3
PHIL 508	Hume	3
PHIL 509	Kant	3
PHIL 705	Studies in 17th- and 18th-Century Philosophy	3
PHIL 707	Studies in 19th-Century Philosophy	3
PHIL 723	Hegel	3

#### Late Modern

Course	Title	Credits
PHIL 503	Analytic Philosophy	3
PHIL 504	Phenomenology and Existentialism	3
PHIL 534	Contemporary European Social Philosophy	3
PHIL 706	Studies in Continental Philosophy	3
PHIL 707	Studies in 19th-Century Philosophy	3
PHIL 709	Studies in 20th-Century Philosophy	3
PHIL 721	Pragmatism	3

Note: PHIL 760 (Special Topics in Philosophy) and PHIL 797 (Independent Study) may count as history courses depending on the material covered. PHIL 707 may count as satisfying either early or late modern history requirement depending on the material covered. These determinations are made by the Director of Graduate Studies in consultation with the instructor.

#### Language Requirement

Learning a foreign language is an important part of professionalization as a philosopher. Doing so is often central to gaining proficiency in the history of philosophy and it enables one to engage important work being done by scholars who write in languages other than English. If a student's research area demands knowledge of a particular foreign language, the student will be expected to be proficient in that language.

The Department of Languages, Literatures, and Cultures administers tests of foreign language competency.

Satisfying the foreign language requirement may entail one of the following:

- Successful completion of an intensive reading course in a language approved by The Graduate School
- Passing grade on a language reading proficiency examination administered by the Department of Languages, Literatures, and Cultures. A student may not take the competency test more than 3 times.

Students whose native language is not English may be able to use English to fulfill the foreign language requirement. An official TOEFL score of 243 for computer-based test or 590 for paper-based test.

If a doctoral student's comprehensive examination committee determines that the research area demands knowledge of one or more foreign languages, the student is required to demonstrate proficiency in at least one of those languages. This applies to all students, including those whose native language is not English. Only if the required research language is the foreign student's native language may English be used to fulfill this requirement. In rare cases, a comprehensive examination committee may determine it advisable to substitute a substantial competence in a research method relevant to their research for the foreign language requirement. The Director of Graduate Studies will give final approval of the substitution and ultimate approval of the substitution will be given by the Dean of the Graduate School.

Students should make arrangements to complete the foreign language and/or research methods requirement by discussing options with their advisory committee early in the program. Certification of foreign language (and any substitution) remains valid for 8 years.

### Requirement for Graduate Teaching Assistants

Normally, Ph.D. students with teaching assistantships will be given full responsibility for teaching a course beginning in their 3rd year in the program. In the spring semester of their 2nd year, they will be required to take the 3-credit hour pedagogy course, PHIL 790. This course may count toward the 16 courses required for the Ph.D. degree.

### PhD Advisory Committees

Each student in the Ph.D. program will be supervised by three successive advisory committees: an initial advisory committee, a comprehensive exam committee, and a dissertation committee. These committees assist the student in developing an appropriate course of study, evaluate student progress, provide guidance and counsel, certify the completion of various degree requirements, and ensure that professional standards have been met in completing those requirements. The composition of each committee should reflect the student's interests and the area in which the student is likely to write a dissertation, though the constitution of these committees may change as the student progresses through the program.

### Student Portfolios

Each doctoral student must maintain a "portfolio" of achievements in the program. This portfolio will be an essential tool for tracking and assessing the student's progress in the program. The contents of the portfolio will be available only to the student and to members of the department faculty.

The portfolio, including yearly writing samples and a dissertation proposal, will serve as the written portion of the Ph.D. comprehensive exam. It will also serve as a working basis for developing a job placement dossier. The student must therefore maintain an up-to-date portfolio at least until their date of graduation.

The Department's annual assessment of the graduate program as a whole will be based to some degree on a summary review of current student portfolios. Student portfolios will include at least the following items:

- The student's statement of purpose and writing sample submitted as part of their application for admission.

- One or more samples of one's best writing from each year in the program (at least one expected by August 15 each year) until one has completed their coursework and is working exclusively on materials for the Ph.D. comprehensive exam.
- All signed advisement forms: two per year until the Ph.D. comprehensive exam is passed.
- A syllabus for each course for which the student is the instructor of record (due within a month after instruction begins).
- A summary of student evaluations of one's teaching for each course where one serves either as an instructional assistant (GIA) or as a teaching assistant (GTA), for as long as one is involved in teaching at USC.
- Copies of all classroom visitation reports for any class for which the student serves in some instructional capacity and for which such a visitation was scheduled.
- An up-to-date curriculum vitae, including (but not limited to) a chronological record of all GSA/GRA/GIA/GTA duties, a list of publications and works submitted for publication, a list of public presentations at conferences, and any record of service to department, university, community, or profession.
- A dissertation proposal (expected at the beginning of the fourth year).

These items should be submitted to both the student's committee members and the graduate program coordinator who will maintain a physical copy of the complete portfolio. The portfolio itself will not serve as a placement dossier though students may make relevant materials directly available to prospective employers.

### Admission to Candidacy

Students are evaluated every semester. The faculty meets at the end of the spring semester to review students' overall progression through the degree requirements. Students will receive a letter from the Director of Graduate Studies summarizing the results of the annual review.

Where a student's progress falls short of expectations, remedies may be prescribed that must be implemented within a specific time frame.

Failure to resolve the issues within the specific time frame may result in dismissal from the program. To be considered for admission to candidacy, students must have resolved any issues identified. To be recommended for admission to candidacy, a student must have satisfied the following requirements.

- The student must have completed all required course work other than PHIL 899 ([http://bulletin.sc.edu/preview\\_program.php?catoid=94&pooid=6107#tt9602](http://bulletin.sc.edu/preview_program.php?catoid=94&pooid=6107#tt9602)).
- The student must have submitted a Doctoral Program of Study (DPOS) form.
- The student must have submitted a Doctoral Committee Appointment Request (G-DCA) form.
- The student's written work in graduate courses taken at USC must have been strong enough to justify a high expectation of success in the remainder of the program.
- The student must have demonstrated proficiency in any teaching duties assigned throughout the course of their graduate work, either as instructional assistants or teaching assistants.

Final approval for admission to candidacy for the Ph.D. degree is made by the Dean of the Graduate School.

## Dissertation Proposal and Ph.D. Comprehensive Examination

The Ph.D. Comprehensive Examination is designed to assist the student in writing a dissertation. It is taken after all required course work has been completed, at a stage when a dissertation topic has been selected and a provisional but detailed proposal drawn up. The comprehensive exam is in two parts, written and oral. A dissertation proposal will serve as the cornerstone of the written portion of the Comprehensive Exam. Procedures for submitting a dissertation proposal and the structure of the Ph.D. Comprehensive Examination are as follows:

- Following admission to candidacy, the student in consultation with the Graduate Director and the student's initial advisory committee should select an appropriate and willing Ph.D. comprehensive exam committee from among the department's Graduate Faculty.
- A dissertation proposal should be formally approved by the student's Ph.D. comprehensive exam committee no later than the midpoint of the fall semester of the fourth year (or the third year for students with a previous MA). Dissertation proposals can vary in format. For example, they can include one or more of the following: a dissertation outline, a multi-page dissertation overview, a synopsis of each chapter, a sample chapter in essentially finished form, one or more finished papers on a similar topic, a substantial bibliography, a literature review, etc. What is to be included should be determined in consultation with the student's comprehensive exam committee. Overall, this written material should clearly and substantially identify the topic, thesis, and argumentative structure of the proposed dissertation. It should also provide ample evidence of the student's familiarity with relevant primary and secondary literature.
- In conjunction with an overall review of a student's portfolio of achievements in the program up to that point (including yearly writing samples), the combination of written materials constituting a dissertation proposal will serve as the written portion of the Ph.D. comprehensive exam.
- An oral examination will normally take place in the fall semester of the fourth year, roughly a week after approval of the written dissertation proposal. This exam takes as its starting point the written proposal but may range more broadly in order for the committee to ascertain the viability of the proposed research, specifically to determine that the proposed project is worth doing, that it is doable in a timely manner, and that the student is capable of completing the project.
- Immediately after the oral examination the committee meets to determine whether the student has passed or failed. The decision is made by majority vote. A student who fails may apply to take the examination a second time and may also apply to have the membership of the committee changed. Changes in committee membership must be approved by the Dean of the Graduate School. Normally the second examination will be taken no more than six months after the first. A student who fails the examination a second time or who chooses not to be re-examined will not be permitted to continue in the Ph.D. program but, upon request, may be awarded a terminal M.A. degree. If approved, the student must have fulfilled all MA degree requirements by the end of the respective academic year, including passing the MA Comprehensive Exam and filing the appropriate Change-of-Status form with the Graduate School.

Completion of the Ph.D. comprehensive examination is expected to occur by the end of the Fall semester of the fourth year, leaving time in the

program for the student to work on an approved dissertation topic and to prepare for academic job placement.

## Ph.D. Dissertation and Dissertation Defense

No later than five years after passing the Ph.D. Comprehensive Examination, a Ph.D. student must complete a dissertation. The dissertation topic must be approved by a committee of graduate faculty members, consisting of the advisor, two other graduate faculty members judged competent in the field, and one graduate faculty member from outside the Philosophy Department. The student is expected to have whatever specialized skills are required for the dissertation topic chosen (e.g., familiarity with one of the sciences, or proficiency in a foreign language). At the time the dissertation is submitted the student must also provide an abstract of the dissertation.

To complete the requirements for the Ph.D., the student must successfully defend his or her dissertation before an examining committee appointed by the Director of Graduate Studies and approved by the Dean of the Graduate School. The committee will consist of no fewer than four members, of whom at least one is from another department. Typically, these will be the same professors who are members of the student's Dissertation Committee. The dissertation defense should take place not less than thirty days before the date at which the candidate expects to receive his or her degree. If a student does not complete their dissertation within the five year period that begins with passing the Ph.D. Comprehensive Examination, it is up to the student's dissertation advisor to determine what counts as satisfactory progress in each subsequent year.

## Physics and Astronomy

Department Website (<http://www.physics.sc.edu/>)

Ralf Gothe, *Chair*

The Department of Physics and Astronomy offers strong traditional curricula at the graduate level with additional courses in research. Comprehensive experimental research programs are available in high-energy physics, nuclear/intermediate energy physics, condensed matter physics/nanoscience, and astrophysics. There are broad efforts in theoretical research with programs in the foundations of quantum theory, nuclear and particle physics, statistical/condensed matter physics, cosmology and astrophysics, and computational physics.

The Department of Physics and Astronomy offers the degrees of Master of Science, Professional Science Master (area of emphasis: modeling for corporate applications<sup>1</sup>), and Doctor of Philosophy. In cooperation with the College of Education, the department also offers the Master of Arts in Teaching in Sciences (Physics Option) and the Interdisciplinary Master of Arts in Sciences (Physics Option).

<sup>1</sup> The Professional Science Master program is not currently accepting applicants into the modeling for corporate applications emphasis.

## Admissions

Adequate preparation for graduate study ordinarily presupposes a bachelor's degree in physics or an allied field. Prior to admission to this department, entering graduate students are expected to have passed with a grade of C or better the following courses or their equivalent: modern physics, mechanics, electromagnetic theory, kinetic theory and statistical mechanics, nuclear physics, and solid state physics. Mathematics through advanced calculus, including ordinary and particle differential

equations and vector analysis, should also have been completed in the undergraduate program. Students with deficiencies in these courses must make them up during their initial two years of graduate studies.

Requests for further information should be addressed to:

Director of Graduate Studies  
Department of Physics and Astronomy  
University of South Carolina  
Columbia, SC 29208

## Programs

- Physics, M.S. (p. 112)
- Physics, Ph.D. (p. 112)

## Courses

### ASTR 533 - Advanced Observational Astronomy (1-3 Credits)

Development of a combination of observational techniques and facility at reduction of data. A maximum of eight hours per week of observation, data reduction, and consultation. Offered each semester by arrangement with the department.

### ASTR 534 - Advanced Observational Astronomy (1-3 Credits)

A continuation of ASTR 533. Up to eight hours per week of observation, data reduction, and consultation.

### ASTR 599 - Topics in Astronomy (1-3 Credits)

Readings and research on selected topics in astronomy. Course content varies and will be announced in the schedule of classes by title.

### PHYS 501 - Quantum Physics I (3 Credits)

A self-contained treatment of quantum theory and its applications, beginning with the Schrodinger equation.

**Prerequisites:** C or better in PHYS 307 and MATH 242.

### PHYS 502 - Quantum Physics II (3 Credits)

Advanced topics in quantum physics, plus topics in special relativity, high-energy physics, and cosmology.

**Prerequisites:** C or better in PHYS 501.

### PHYS 503 - Mechanics (4 Credits)

Classical mechanics of particles, systems, and rigid bodies; discussion and application of Lagrange's equations, introduction to Hamiltonian formulation of mechanics.

**Prerequisites:** PHYS 206 or PHYS 211, MATH 242 or MATH 520.

### PHYS 504 - Electromagnetic Theory (4 Credits)

Field theory of electric and magnetic phenomena; Maxwell's equations applied to problems in electromagnetism and radiation.

**Prerequisites:** C or better in PHYS 503.

### PHYS 506 - Thermal Physics and Statistical Mechanics (3 Credits)

Principles of equilibrium thermodynamics, kinetic theory, and introductory statistical mechanics.

**Prerequisites:** C or better in PHYS 306.

### PHYS 509 - Solid State Electronics (4 Credits)

Topics include: basic electrical circuits; electronic processes in solids; operation and application of individual solid state devices and integrated circuits. Three lecture and three laboratory hours per week.

**Prerequisites:** PHYS 207 or PHYS 212.

### PHYS 510 - Digital Electronics (3 Credits)

Basic operation of digital integrated circuits including microprocessors. Laboratory application of microcomputers to physical measurements.

**Prerequisites:** C or better in PHYS 509.

### PHYS 511 - Nuclear Physics (4 Credits)

An elementary treatment of nuclear structure, radioactivity, and nuclear reactions. Three lecture and three laboratory hours per week.

**Prerequisites:** C or better in PHYS 501.

### PHYS 512 - Solid State Physics (4 Credits)

Crystal structure; lattice dynamics; thermal, dielectric, and magnetic properties of solids. Free electron model of metals. Band structure of solids, semi-conductor physics. Three lecture and three laboratory hours per week.

**Prerequisites:** PHYS 502.

### PHYS 514 - Optics, Theory, and Applications (4 Credits)

Geometrical and physical optics; wave nature of light, lenses and optical instruments, interferometers, gratings, thin films, polarization, coherence, spatial filters, and holography. Three lecture and three laboratory hours per week.

**Prerequisites:** PHYS 306.

### PHYS 515 - Mathematical Physics I (3 Credits)

Analytical function theory including complex analysis, theory of residues, and saddlepoint method; Hilbert space, Fourier series; elements of distribution theory; vector and tensor analysis with tensor notation.

**Prerequisites:** MATH 242.

### PHYS 516 - Mathematical Physics II (3 Credits)

Group theory, linear second-order differential equations and the properties of the transcendental functions; orthogonal expansions; integral equations; Fourier transformations.

**Prerequisites:** PHYS 515.

### PHYS 517 - Computational Physics (3 Credits)

Application of numerical methods to a wide variety of problems in modern physics including classical mechanics and chaos theory, Monte Carlo simulation of random processes, quantum mechanics and electrodynamics.

**Prerequisites:** C or better in PHYS 212 and MATH 142.

### PHYS 521 - Biophysics (4 Credits)

Principles of physics applied to living systems: diffusion, friction, low Reynolds-number world, entropy, free energy, entropic/chemical forces, self-assembly, molecular machines, membranes.

**Prerequisites:** MATH 142, PHYS 212, CHEM 112, BIOL 102.

### PHYS 531 - Advanced Physics Laboratory I (1-3 Credits)

A laboratory program designed to develop a combination of experimental technique and application of the principles acquired in formal course work. A maximum of eight hours per week of laboratory and consultation.

### PHYS 532 - Advanced Physics Laboratory II (1-3 Credits)

A continuation of PHYS 531. Up to eight hours per week of laboratory and consultation.

### PHYS 541 - Advanced Experimental Physics I (4 Credits)

Continuation of PHYS 310. Optical apparatus (telescope, microscope, interferometer) and advanced project planning including equipment design and budgeting.

**Prerequisites:** C or better in PHYS 310.

**PHYS 542 - Advanced Experimental Physics II (4 Credits)**

Continuation of PHYS 541. Study of topics from Advanced Optics, Astronomy, Biophysics, Digital Electronics, Nuclear/Particle Physics, or Solid State Physics, plus conduction of a physics experiment, including a written paper and an oral presentation.

**Prerequisites:** C or better in PHYS 541.

**PHYS 546 - Introduction to Astrophysics (3 Credits)**

This is an astrophysics course for physics students. The course will cover the basics of observational techniques, structure and evolution of stars, interstellar medium and star formation, structure and properties of the Milky Way and nearby galaxies, and generation and transfer of radiation in astrophysical environments.

**Prerequisites:** C+ or better in PHYS 307.

**PHYS 599 - Topics in Physics (1-3 Credits)**

Readings and research on selected topics in physics. Course content varies and will be announced in the schedule of classes by title.

**PHYS 701 - Classical Mechanics (3 Credits)**

Generalized coordinates, Lagrangian and Hamiltonian formulations, variational principles, transformation theory, and Hamilton-Jacobi equation.

**PHYS 703 - Classical Field Theory I (3 Credits)**

Development of classical fields; Maxwell's equations; boundary value problems; radiation theory.

**PHYS 704 - Classical Field Theory II (3 Credits)**

A continuation of PHYS 703.

**PHYS 706 - Statistical Thermodynamics (3 Credits)**

Statistics of Boltzmann, of Fermi and Dirac, and of Bose and Einstein, with applications.

**PHYS 708 - General Relativity and Cosmology (3 Credits)**

Introduction to the basic concepts of general relativity and a discussion of problems of current interest.

**Prerequisite or Corequisite:** PHYS 701, PHYS 704.

**PHYS 711 - Quantum Mechanics I (3 Credits)**

A development of non-relativistic quantum mechanics.

**PHYS 712 - Quantum Mechanics II (3 Credits)**

A continuation of PHYS 711.

**PHYS 713 - Advanced Quantum Theory (3 Credits)**

Second Quantization. Relativistic formulations of quantum mechanics.

**Prerequisites:** PHYS 712.

**PHYS 714 - Quantum Field Theory (3 Credits)**

Theory of quantized fields. Introduction to renormalization. A continuation of PHYS 713.

**Prerequisites:** PHYS 713.

**PHYS 715 - Many-Body Quantum Theory (3 Credits)**

Effective field theory, particle-hole, quasiparticles.

**Prerequisite or Corequisite:** PHYS 713.

**PHYS 721 - Subatomic Physics (3 Credits)**

Nuclear physics, mainly from the experimental standpoint.

**PHYS 723 - Elementary Particles I (3 Credits)**

Introduction to elementary particles. The quark model. Symmetry principles and conservation laws. Calculation of cross sections and decay rates using Feynman rules. Accelerators, particle detectors, and experiments.

**Prerequisites:** PHYS 701, PHYS 703, PHYS 711.

**Corequisite:** PHYS 712.

**PHYS 724 - Elementary Particles II (3 Credits)**

Experimentally accessible processes and their description using the framework developed in PHYS 723. Gauge theories and the standard model. Particle experiments for the next decade and their underlying physics descriptions.

**Prerequisites:** PHYS 723

**PHYS 725 - Solid State Physics (3 Credits)**

The crystalline state of matter and its main characteristics. Electric and magnetic properties of metals, semiconductors, and insulators.

**PHYS 726 - Superconductivity (3 Credits)**

Theory and description of conventional and high temperature superconductors and their properties.

**PHYS 727 - Magnetic Resonance (3 Credits)**

Basic theory. Electron spin resonance. High resolution and wide-line nuclear magnetic resonance. MÅfÅssbauer effect. Magnetic resonance and dielectric relaxation.

**PHYS 728 - Quantum Optics - Understanding Light-Matter Interactions (3 Credits)**

Semi-classical and fully quantum-mechanical treatments of interactions between matter and electromagnetic fields on the microscopic level.

**Prerequisites:** Undergraduate quantum mechanics.

**PHYS 729 - Applied Group Theory (3 Credits)**

Groups and representations. Full rotational group. Angular momentum. Ligand field theory. Application to atomic, molecular, and nuclear physics.

**PHYS 730 - Graduate Seminar (1 Credit)**

Presentation by the student of a designated topic. May be repeated for credit.

**PHYS 731 - Extragalactic Astrophysics (3 Credits)**

Extragalactic astrophysics, including nearby and distant galaxies, active galaxies, galaxy clusters, large-scale structure, galaxy formation/evolution, scale structure, galaxy formation/evolution, basics of cosmology, cosmic radiation backgrounds, and observation constraints on cosmological models.

**Prerequisites:** PHYS 701, PHYS 703, and ASTR 211 or equivalent.

**PHYS 740 - Selected Topics in Physics (1-3 Credits)**

Course content varies and will be announced in the schedule of classes by title.

**PHYS 745 - Topics in Nuclear Physics (1-3 Credits)**

Course content varies and will be announced in the schedule of classes by title.

**PHYS 746 - Principles of Astrophysics (3 Credits)**

This is an astrophysics course for physics graduate students. The course will cover the basics of observational techniques, structure and evolution of stars, interstellar medium and star formation, structure and properties of the Milky Way and nearby galaxies, and generation and transfer of radiation in astrophysical environments.

**Prerequisites:** C+ or better in PHYS 307, PHYS 503, PHYS 506.

**PHYS 750 - Topics in Solid State Physics (1-3 Credits)**

Course content varies and will be announced in the schedule of classes by title.

**PHYS 751 - The Physics of Radiation Therapy (3 Credits)**

Description of ionizing and non-ionizing radiation, interaction of radiation with matter, and radiation detection and dosimetry.

**PHYS 752 - Health Physics - Radiation and Nuclear Physics (3 Credits)**

Radioactive decay and ionizing radiation. Calculation of occupational exposure and biological effects of radiation exposure. Introduction to Radiological Control Systems, Shielding, Dose Determination, Safety Protocols.

**PHYS 753 - The Physics of Medical Imaging (3 Credits)**

Describing basics of imaging science, x-ray imaging modalities including basic principles, detectors, scattered radiation, planar imaging, CT, fluoroscopic imaging, nuclear medicine imaging, ultrasound and MRI, and computers in imaging.

**PHYS 755 - Topics in Theoretical Physics (1-3 Credits)**

Course content varies and will be announced in the schedule of classes by title.

**PHYS 760 - Research (1-6 Credits)**

Introduction to and the application of the methods of research.

**PHYS 761 - Research (1-6 Credits)**

Introduction to and the application of the methods of research.

**PHYS 781 - Astronomy for Teachers (3 Credits)**

A one semester survey of astronomy. Observational techniques and current developments. Primarily for M.A.T./I.M.A. and M.Ed. students. Not available for M.S. and Ph.D. credit in physics.

**PHYS 782 - Topics in Contemporary Physical Sciences for Teachers (3-4 Credits)**

Discussions designed to provide teachers with simple physical explanations of subjects including: nuclear energy, black holes, quarks, strange particles, perception of color, integrated circuits, computers, TV games, and other topics of current interest. Primarily for M.A.T. and M.Ed. students. Not available for M.S. and Ph.D. credit in physics.

**PHYS 783 - Modern Physics for Teachers (3 Credits)**

Basic concepts of modern physics. The experimental basis for quantum theory and the theory of relativity. Fundamental concepts of modern physics. Primarily for M.A.T. and M.Ed. students. Not available for M.S. and Ph.D. credit in physics.

**PHYS 784 - Topics in Light and Sound for Teachers (3 Credits)**

Topics in modern optics and acoustics are discussed in a framework appropriate for school teachers. Primarily for M.A.T. and M.Ed. students. Not available for M.S. and Ph.D. credit in physics.

**PHYS 785 - Electronics for Teachers (3 Credits)**

Basic electronics with emphasis on measurement and laboratory procedures. Operation and application of semiconductor devices and integrated circuits. Primarily for M.A.T. and M.Ed. students. Not available for M.S. and Ph.D. credit in physics.

**PHYS 786 - Teaching Physics on the Internet (3 Credits)**

Web-based resources for assigning and grading individualized homework and tests and for creating instructional units in physics and physical sciences. Not available for M.S./Ph.D. physics majors.

**PHYS 787 - Design of Physics Laboratory and Demonstration Experiments for Teachers (3 Credits)**

Design and performance of demonstrations and experiments to display physical phenomena to students. Qualitative and quantitative experiments. Primarily for M.A.T. and M.Ed. students. Not available for M.S. and Ph.D. credit in physics.

**PHYS 788 - Physics for AP Teachers (3 Credits)**

Preparation of teachers for developing and teaching an advanced placement course in physics. Primarily for M.A.T./I.M.A. and M.Ed. students. Not available for M.S. or Ph.D. credit in physics.

**PHYS 789 - Physics for Teachers of Mathematics (3 Credits)**

Teacher preparation for creating and solving word problems using conservation laws and symmetries found in physics and physical science and linked to the South Carolina Mathematics Standards. Primarily for M.A.T./I.M.A. and M.Ed. students. Not available for M.S. or Ph.D. credit in physics.

**PHYS 799 - Thesis Preparation (1-9 Credits)**

CL: 2020.

**PHYS 899 - Dissertation Preparation (1-12 Credits)**

CL: 2020.

## Physics, M.S.

### Learning Outcomes

- Students will demonstrate their ability to master material of the major fundamental branches of physics and their applications.
- Students will apply and interpret standard physics models when completing a M.S. thesis.
- Students will arrange material in a coherent manner and illustrate scientific details in an understandable fashion for a scientific audience.

### Degree Requirements (30 Hours)

The requirements for the Master of Science degree include 30 semester hours of course work, a thesis, and an oral comprehensive examination.

## Physics, Ph.D.

### Learning Outcomes

- Students will demonstrate comprehension of the major fundamental branches of physics and their applications.
- Students will conduct a program of original research leading to the completion of a Ph.D. dissertation.
- The students will arrange material in a coherent manner and illustrate scientific details in an understandable fashion for a scientific audience.
- Students will gain classroom experience by serving as instructor for undergraduate and/or graduate courses in physics. Service as instructor of one section of a course with multiple sections is sufficient to satisfy this requirement.

### Degree Requirements (60 Post-Baccalaureate Hours)

The requirements for the degree of Doctor of Philosophy include 60 semester hours of advanced course work (or 30 semester hours beyond the master's degree), written and oral examinations for admission to candidacy, and a dissertation. Beyond the basic courses taken by most



graduate students, the formal course work of Ph.D. students is quite flexible and is decided by consultation between the student and the student's advisory committee. Usually five or six years are required to complete the doctoral program. The majority of time during the student's last two years of residence will be devoted to individual research under the guidance of a member of the faculty on a problem of mutual interest. This research forms the basis for the doctoral dissertation.

## Political Science

Department Website (<http://www.cas.sc.edu/poli/>)

Timothy Peterson, *Director of Graduate Studies*

The department offers advanced programs leading to the M.A. and Ph.D. degrees in political science and international studies. In addition, the Master of Public Administration is also offered.

## Admissions

The general regulations of The Graduate School of the University of South Carolina regarding admission, residency, and degree requirements are applicable to all graduate students in the Department of Political Science. In addition to The Graduate School's application (available online at <http://www.gradschool.sc.edu>), the department requires that applicants submit materials that will provide evidence of their ability to successfully pursue and complete graduate work.

Admission is open to students with baccalaureate degrees in any field, but it is recommended that students take undergraduate course work in such areas as international studies, political science, history, economics, geography, or public administration. All applicants to the international studies, political science, and public administration degree programs must submit official transcripts of their undergraduate (and graduate) degree programs; scores on the verbal, quantitative, and analytical sections of the GRE; three letters of recommendation; a personal statement; and a resume or curriculum vitae. Applicants whose native language is not English must also submit a TOEFL or IELTS score. Detailed guidelines for all programs can be found at <http://www.cas.sc.edu/poli/graduate.html>.

## Programs

- International Studies, M.A. (p. 117)
- Political Science, M.A. (p. 117)
- Political Science, Ph.D. (p. 118)
- Public Administration, M.P.A. (p. 119)

## Courses

### **POLI 502 - Methods of Political Analysis (3 Credits)**

Quantitative techniques in political science; levels of measurement; problems of description, causation, and inference.

### **POLI 503 - American Political Thought (3 Credits)**

Themes and thinkers in American political history.

### **POLI 504 - Politics and Ethics (3 Credits)**

The nature of, and relationship between, politics and ethics.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

### **POLI 505 - Utopian Political Thought (3 Credits)**

A critical examination of utopian and dystopian political ideas.

### **POLI 542 - Research in Language Conflict and Language Rights (3 Credits)**

Research into the parameters governing linguistic conflicts and language rights issues, involving a close examination of the nexes of language and individual and ethnic identity, culture, dialects, bilingualism. Examination of regional, national, and international case studies, with particular attention to nationalism, language revitalization, and language planning.

**Cross-listed course:** LING 542

### **POLI 554 - Law and Society (3 Credits)**

The American judicial system, including the decision to resolve disputes by legal means, political influence on the legal system, the social impact of legal rulings, the relationship of the courts to other branches of government, and the applicability of higher law concepts in judicial decision making.

### **POLI 567 - American Local Government (3 Credits)**

An introduction to the institutions, functions, policy-making processes, and politics of American local government.

### **POLI 569 - State and Local Government (3 Credits)**

This course will examine the purpose, structure, and functions of state governments and their local subdivisions. Requires special permission of department. Restricted to social studies teachers.

### **POLI 570 - South Carolina Government and Politics (3 Credits)**

South Carolina state and local government in the context of South Carolina history and U.S. state and local government.

### **POLI 591 - Special Topics in Political Science (3 Credits)**

Intensive study of special topics in Political Science. May be repeated as content varies by title.

### **POLI 700 - The Political Science Discipline and Profession (3 Credits)**

Examines political science as a profession and discipline, reviews teaching techniques and issues, and develops dissertation and original research proposals.

### **POLI 701 - Theories of Political Inquiry (3 Credits)**

A brief overview of the growth of the social sciences and of the history of the American discipline of political science in the 20th century, including an examination of the rise of behavioralism. Study of the principles of neo-positivist political inquiry, including problems of empirical research and research design.

### **POLI 702 - Institutional and Behavioral Theories of Politics (3 Credits)**

Introduction to the institutional and behavioral theories used to explain political phenomena.

**Prerequisites:** POLI 701.

### **POLI 703 - Democratic Theory (3 Credits)**

Critical study of theories of democracy.

### **POLI 704 - Political Theory and Feminism (3 Credits)**

How contemporary feminist theory has responded to and reformulated traditional theories about the role and nature of women.

**Cross-listed course:** WGST 704

### **POLI 705 - Theory of Marxism (3 Credits)**

Critical study of the development of Marxist theory.

### **POLI 706 - Advanced Methods of Political Analysis (3 Credits)**

Advanced techniques and approaches to multivariate analysis of empirical data in the context of political problems and events.

**Prerequisites:** POLI 502 or POLI 515.

### **POLI 707 - Classics of Political Theory (3 Credits)**

Introduction to the nature and tradition of political theory; readings from selected political theorists.

**POLI 708 - Women in American Politics (3 Credits)**

Impact of gender in American politics; elections, representation, rights, social movements, legal institutions, and public policy. Explores class, race, and sexuality issues within gender.

**Cross-listed course:** WGST 708

**POLI 709 - Qualitative Methods of Political Analysis (3 Credits)**

Techniques and approaches to qualitative analysis of political problems and events. Topics include field research, interviewing, case studies, content analysis, archival research, and presentation of data.

**POLI 710 - Introduction to International Relations (3 Credits)**

An introduction to the field of international relations, including causes of war, world order, international distribution of wealth, durability of state system, and the individual in the world system.

**POLI 711 - Directed Research in Political Science (3 Credits)**

Political science Ph.D. students will work with a faculty mentor in their primary field to produce an original paper suitable for presentation at a national or regional professional conference.

**POLI 715 - International Relations Theory (3 Credits)**

Systematic survey, analysis, and comparison of major contemporary theoretical works in international relations.

**POLI 717 - Comparative Foreign Policy (3 Credits)**

A seminar treating the development, interests, formulation, and conduct of the modern foreign policies of selected states, with special reference to their interactions with other states' policies.

**POLI 718 - Revolution and Politics (3 Credits)**

An analytical investigation of political violence in the international arena, its sources, internal and external bases, and consequences for political behavior within and among states in the contemporary international system.

**POLI 719 - Political and Social Change (3 Credits)**

Systematic survey, analysis, and comparison of major contemporary theoretical works on political and social change.

**POLI 720 - Political Communication (3 Credits)**

The role of communication in creating collective political reality, with particular attention to how governmental, economic, professional, and cultural factors influence media organizations.

**POLI 721 - Race and Public Policy (3 Credits)**

A survey of the most recent and state-of-the-art scholarship on race and American policy.

**POLI 724 - Religion and Politics (3 Credits)**

Religion as a factor in the comparative politics and international relations of states and societies.

**Cross-listed course:** RELG 724

**POLI 725 - International Conflict (3 Credits)**

Survey, analysis, and comparison of theory and research findings on the nature, conditions, and causes of international conflict and violence.

**POLI 726 - Seminar in Judicial Politics (3 Credits)**

An introduction to the academic literature on American courts and judicial politics.

**POLI 727 - Models for Understanding Political Institutions (3 Credits)**

A survey of the literature on empirical and game theory methods.

**Prerequisites:** POLI 502 and POLI 706.

**POLI 728 - Judicial Politics in Europe and the Common Law World (3 Credits)**

A comparative study of courts of Europe and the and the common law courts of modern democracies (especially Australia, Canada, India, and the United Kingdom). US state courts will also be examined from a comparative perspective.

**POLI 729 - Courts in Developing Countries (3 Credits)**

A comparative study of courts, judicial process, and judicial behavior, and the role of courts in politics focusing on the common law and civil law courts of Latin America, Africa, and Asia.

**POLI 731 - Government and Politics of Latin America (3 Credits)**

This course examines the nature of democracy and democratic transitions, the relationship between economic and political development, and the causes and effects of different economic development strategies in Latin America.

**POLI 732 - International Law (3 Credits)**

Study of the role of law in international relations, emphasizing both substantive and theoretical problems relating to development of systems of law in such areas as war, protection of human rights, outer space and oceans, and international commerce.

**POLI 733 - International Organization (3 Credits)**

Examination of theoretical and substantive problems relating to the development and functioning of international intergovernmental and nongovernmental organizations.

**POLI 734 - Economics of International Politics (3 Credits)**

Study of the international political significance of economic issues relating to monetary reform, trade, aid, and economic development.

**POLI 735 - International Cooperation (3 Credits)**

Approaches to the study of international cooperation, including international integration, community formation, regime formation, interdependence, international institutionalization, and global governance.

**POLI 736 - Public Opinion and Political Attitudes (3 Credits)**

Examines the determinants, content, and consequences of citizens' political beliefs and attitudes with attention to political culture, ideology, issue dynamics, and popular support for democratic principles.

**POLI 737 - Nationalism and Politics (3 Credits)**

Proseminar on the politics of nationalism from both the political sociology and international relations perspectives.

**POLI 740 - Formulation and Conduct of United States Foreign Policy (3 Credits)**

Study of the constitutional bases, institutions, instruments, and decision-making processes of U.S. foreign policy.

**POLI 741 - Contemporary United States Foreign Policy (3 Credits)**

Analysis and interpretation of the substantive problems of contemporary U.S. foreign policy.

**POLI 742 - Problems in National Security (3 Credits)**

Continuing problems and competing strategies involved in formulating a national security strategy for the U.S. Issues include the defense structure and budget; the National Security Council and the decision-making process; the volunteer Army and the role of the military in society; nuclear weapons and arms control.

**POLI 745 - Russian Foreign Policy (3 Credits)**

Study of the foreign policy of Russia and the other states of the former Soviet Union, including consideration of historical developments, institutions, capabilities, and strategic objectives.

**POLI 746 - Chinese Foreign Policy (3 Credits)**

A seminar on the Chinese tradition in foreign policy and the foreign policies of the Republic of China and the People's Republic of China, emphasizing the impact of domestic Chinese affairs on their foreign relations in the post-World War II period.

**POLI 747 - Japanese Foreign Policy (3 Credits)**

A seminar on the foreign policy of Japan with emphasis on the post-World War II period and on the analysis of Japanese objectives and capabilities in international relations.

**POLI 749 - International Relations of the Middle East (3 Credits)**

Foreign policies and international relations of the Middle East, focusing on relations within the region and with the West and Soviet bloc.

**POLI 751 - Policy Analysis I (3 Credits)**

Introduction to the theory and practice of policy analysis.

**POLI 752 - Policy Analysis II: Advanced Policy Analysis (3 Credits)**

Overview of methods used to evaluate public policies.

**Prerequisites:** POLI 771 or equivalent.

**POLI 753 - Capstone Seminar in Public Administration (3 Credits)**

Critical issues in public administration; term project integrating the material from other courses in the analysis of a contemporary problem. Field work and applied project required.

**Prerequisites:** 30 credit hours MPA program.

**POLI 754 - Public Accountability and Ethics (3 Credits)**

An examination of the legal, political, professional, and organizational accountability demands made on administrators; the interplay of these demands with the needs for ethical decision making and integrity.

**POLI 755 - Grants Administration (3 Credits)**

Analysis of grant and contract functions in government agencies; proposal writing; legal and fiscal requirements of grants administration.

**Cross-listed course:** EDRM 800

**POLI 756 - Introduction to Planning and Politics in the United States (3 Credits)**

Overview of contemporary planning in the United States at local, state, and national levels, with emphasis on the politics of planning at the local level of government. Includes theory of planning, history, problems in the planning process, and implementation of planning.

**POLI 757 - Health Politics (3 Credits)**

Analysis of issues and forces affecting health delivery through the public sector; major models of political decision making; and current health legislation.

**Prerequisites:** HSPM 700 and HSPM 782.

**POLI 758 - The State and Economic Life (3 Credits)**

A study of the relation of government to the economy in the modern world, including theories of the economic functions of the state.

**POLI 759 - Information Systems and Public Administration (3 Credits)**

The development and uses of information systems in local, state, and federal administrative agencies with emphasis on the management of information systems in the public agency environment; the problems of interagency and intergovernmental relations; the politics of technological innovation; privacy, confidentiality, and security and information policy; and the role of information technology in democratic government.

**POLI 760 - American Government and Politics (3 Credits)**

Advanced survey of the institutions and processes of the American political system.

**POLI 761 - American National Government for Professionals (3 Credits)**

Fundamental institutions, processes, values, and policies of the U.S. political system. Designed for master's and non-degree students in education, public administration, and business administration.

**POLI 762 - Politics of the Budgetary Process (3 Credits)**

Analysis of the political, economic, and social influences on the budgetary process.

**POLI 763 - Legislative Process and Behavior (3 Credits)**

The structure, organization, powers, functions, and problems of legislative bodies in America; the behavior of members of those bodies, with emphasis on the United States Congress.

**POLI 764 - Problems of the Presidency (3 Credits)**

A seminar on the problems of the contemporary presidency. Various approaches to the study of the presidency will be used as a means to uncovering and examining some of the major problems connected with the role of the president in the American system of government. Leading exponents of various approaches will be read and discussed.

**POLI 765 - Political Parties and Interest Groups (3 Credits)**

Intensive examination of contemporary development of political organizations in the United States.

**POLI 766 - Electoral Behavior (3 Credits)**

Examination of electoral behavior, including historical patterns in electoral history and forces affecting individual voting behavior such as partisan and class loyalties, political socialization, political attitudes, and candidate appeals. The role played by elections in the larger political system.

**POLI 767 - State Government (3 Credits)**

State government problems and policy issues. Emphasis on the modernization of government institutions and comparative state politics.

**POLI 768 - Local Government Administration (3 Credits)**

Administration of local government from the perspective of the professional administrator. Emphasis on the growth of the manager form of local government and the role of local government administrators with regard to policy making, management, and the delivery of services.

**POLI 769 - Environmental Policy and Management (3 Credits)**

An examination of issues related to environmental policy making, implementation and management.

**Cross-listed course:** ENVR 802

**POLI 770 - Perspectives on Public Administration (3 Credits)**

The study and practice of public administration in the United States.

**POLI 771 - Public Data Analysis (3 Credits)**

Problems of gathering and using public data for public administrators and policy analysts. Includes problems of research design and data gathering, interpretation, and use in the analysis of public problems.

**Prerequisites:** POLI 502.

**POLI 772 - Contemporary Administrative Organization (3 Credits)**

An examination of the problems, processes and theories of communication, decision making, agency planning, and control in administrative agencies.

**POLI 773 - Human Resources Administration in Government (3 Credits)**

Organization, techniques, and theories of personnel management; interpersonal relations in organizations; personnel change and development; changing conditions in the public service.

**POLI 774 - The Public Policy Process (3 Credits)**

An examination of the public policy process, including the role of public officials in the process and constraints on its outcomes.

**POLI 775 - Financial Administration (3 Credits)**

Organization and techniques of governmental financial management; budgetary theories, intergovernmental financial relations.

**POLI 776 - Policy Formation and Program Planning (3 Credits)**

Conceptual and analytic issues in formation and planning of public policies and programs, including problem identification, goal setting and criteria formulation, forecasting, prospective evaluation research, and modeling of programmatic cost and outcomes.

**POLI 777 - Policy Evaluation (3 Credits)**

Conceptual and analytic issues in policy and program evaluation, including problem definition, goal setting and criteria formulation, design of evaluation research, indicator design, treatments of uncertainty, and special problems raised by constraints of the political context.

**POLI 778 - Practicum in Public Administration (3 Credits)**

Selected problems in public administration. May be repeated or taken simultaneously as topics vary. Variations will be announced in the schedule of classes by title.

**POLI 779 - Public Administration Internship (3 Credits)**

CL: 2020.

**POLI 780 - Theories of Comparative Politics (3 Credits)**

Survey, analysis, and comparison of major contemporary theoretical works in comparative politics.

**POLI 781 - Government and Politics of Japan (3 Credits)**

Explores the key institutions, actors, and processes of contemporary Japanese domestic politics.

**POLI 782 - Problems in Chinese Government and Politics (3 Credits)**

The Chinese political tradition as it has merged with Communist theory and practice with special attention to problems of regionalism, localism, and central planning.

**POLI 783 - Dynamics of Middle East Politics (3 Credits)**

The comparative politics of the Arab countries and inter-Arab relations. Comparative analysis is used to study common political problems (authority, participation, integration) and political structures. Aspects of inter-Arab relations analyzed include: Arab unity, the Israeli conflicts, and East-West competition.

**POLI 784 - Government and Politics of Europe (3 Credits)**

Proseminar in European politics. Themes include party systems and voting behavior, parliamentary politics, public policy, democratization and privatization in Central and Eastern Europe, and research on the European Union.

**POLI 785 - Contemporary Russian Politics (3 Credits)**

An examination of current domestic issues in Russia and other states of the former Soviet Union, focusing on the institutions, processes, and results of policy decisions.

**POLI 786 - Comparative Political Institutions (3 Credits)**

Survey of theoretical and empirical work on democratic political institutions.

**POLI 789 - Master of International Studies Internship (3-6 Credits)**

Internships in various public, non-profit, and private organizations and agencies under joint supervision of agency personnel and departmental internship program director. Master of International Studies students only.

**Prerequisites:** Contract approved by departmental internship program director.

**POLI 790A - Independent Readings in Political Science (1-3 Credits)**

CL: 2020.

**POLI 790B - Independent Readings in International Studies (1-3 Credits)**

CL: 2020.

**POLI 791 - Selected Topics in American Politics (3 Credits)**

Topics selected for any semester will be identified by course title.

**POLI 792 - Selected Topics in Comparative Politics (3 Credits)**

Topics selected for any semester will be identified by course title.

**POLI 793 - Selected Topics in Area Studies (3 Credits)**

Topics selected for any semester will be identified by course title.

**POLI 794 - Selected Topics in International Relations (3 Credits)**

Topics selected for any semester will be identified by course title.

**POLI 795 - Selected Topics in International Law and Organization (3 Credits)**

Topics selected for any semester will be identified by course title.

**POLI 796 - Selected Topics in Foreign Policy (3 Credits)**

Topics selected for any semester will be identified by course title.

**POLI 797 - Selected Topics in Public Administration (3 Credits)**

Topics selected for any semester will be identified by title.

**POLI 798 - Selected Topics in Public Law (3 Credits)**

Topics selected for any semester will be identified by title.

**POLI 799A - Thesis Preparation (1-9 Credits)**

For candidates for the Master of Arts degree in Political Science.

**POLI 799B - Thesis Preparation (1-9 Credits)**

For candidates for the Master of Arts degree in International Studies.

**POLI 800 - Selected Topics in Political Theory (3 Credits)**

Analysis of particular topic or topics as chosen by instructor. May be repeated as topics vary. Variations will be announced in the schedule of classes by title.

**POLI 801 - Selected Thinkers in Political Theory (3 Credits)**

Analysis of particular theorist or theorists as chosen by the instructor. May be repeated as topics vary. Variations will be announced in the schedule of classes by title.

**POLI 802 - Seminar in Comparative Administration (3 Credits)****POLI 803 - Research Methods in Political Science (3 Credits)**

Consideration of advanced methods in statistics and research design and their application and use in the writing of a major research paper.

**POLI 806 - Seminar in Advanced Methods of Political Analysis (3 Credits)**

Advanced methodological strategies for empirical analysis. The course will focus primarily on causal models, data theory, dimensional analysis, and scaling techniques.

**POLI 815 - Seminar in Advanced International Relations Theory (3 Credits)**

A critical examination of contemporary efforts to analyze international relations through the use of empirical methodologies, including: social-psychological studies, simulation, game theory, decision theory, quantitative analyses.

**POLI 816 - Seminar in Comparative Study of Foreign Policy (3 Credits)**

Research seminar stressing systematic research procedures in the investigation of the determinants of foreign policy, including the employment of empirical data for testing theoretical propositions.

**POLI 817 - Seminar in International Organization and Cooperation (3 Credits)**

Advanced research seminar in selected topics related to international organization, international law, world order, ethics of international affairs.

**POLI 831 - Seminar on Europe (3 Credits)**

Advanced study of the European interstate system and Europe's role in world affairs. Emphasis on post-World War II Western and Central Europe, major powers, the European Union, and intra-European relations after the Cold War.

**POLI 834 - Seminar on Africa (3 Credits)**

Advanced study of the politics and international relations of Africa, regional development, foreign policy patterns, security problems, and questions of governance.

**POLI 850 - Seminar in Public Law (3 Credits)****POLI 865 - Seminar in Urban Politics (3 Credits)**

Advanced study of the politics and governmental problems of urban areas.

**POLI 872 - Public Sector Labor Relations and Collective Bargaining (3 Credits)**

Overview of public sector unions, labor-management relations, negotiating strategies, and the unique dynamics of management/employee interactions within public agencies.

**POLI 880 - Seminar in Comparative Politics (3 Credits)**

Intensive study of selected problems in comparative politics, with emphasis on individual research.

**POLI 899A - Dissertation Preparation (1-12 Credits)**

For candidates for the Doctor of Philosophy degree in political science.

**POLI 899B - Dissertation Preparation (1-12 Credits)**

For candidates for the Doctor of Philosophy degree in international studies.

## International Studies, M.A.

The Master of Arts degree in International Studies provides students with skills and knowledge demanded by the 21st century workplace. The curriculum combines coursework in relevant Political Science sub-fields (primarily International Relations and Comparative Politics) with skills courses in data analysis, and with the option to take further classes in data analysis and research design, or to select from a variety of Public Administration courses that provide practical, marketable skills to help students qualify for jobs in the government and non-profit sectors.

The admission deadline for the program is April 1 (Fall admission only).

## Learning Outcomes

- Students will develop and complete a course of study that provides a sophisticated grounding in world affairs and policy analysis and includes specialization in a career-relevant field.
- Students will demonstrate their acquired skills in policy analysis, statistical analysis, and (optionally) foreign language facility.
- Students will demonstrate skills in searching for, identifying, and applying for professional positions in international affairs, including employment and internships.

## Degree Requirements (30 Hours)

Students must take 12 hours of Core Substantive courses, 12 hours of Core Skills courses, and an additional 6 hours of electives or thesis hours. 12 hours (4 required courses) are taught in the Department of Political Science. For the remaining 18 hours, students may take a variety of additional Substantive and Skills courses offered in Political Science, or could substitute relevant courses in other departments, with the approval of the Director of the MAIS program. There is no language requirement,

though students can take up to 6 credit hours of language courses as electives. Foreign language courses generally cannot be accepted as Core Substantive or Core Skills courses.

## Core Substantive Courses (12 Hours)

Required:

Course	Title	Credits
POLI 715	International Relations Theory	3
POLI 780	Theories of Comparative Politics	3
Select six additional hours of internationally-themed courses (which may include courses outside POLI)		6
<b>Total Credit Hours</b>		<b>12</b>

## Core Skills Courses (12 Hours)

Required:

Course	Title	Credits
POLI 502	Methods of Political Analysis	3
POLI 706	Advanced Methods of Political Analysis	3
Select six additional hours of skills courses (which may include research design, Public Administration courses, and courses outside POLI)		6
<b>Total Credit Hours</b>		<b>12</b>

## Electives (6 Hours)

*If not choosing the thesis option.*

Electives can consist of additional substantive or skills courses. Additionally, students who prefer to take foreign language courses may take up to 6 hours as electives.

## MAIS Thesis Option (6 Hours)

*If not taking the additional electives.*

Students who plan to apply for Ph.D. programs should choose the Thesis Option. Students who choose the Thesis Option must enroll in six credits of POLI 799B, which may be taken all in one semester or distributed across more than one semester. Students must defend the thesis in an oral examination conducted by the MAIS Director.

## MAIS Non-Thesis Option

Students who do not take the thesis option, opting instead to take 6 hours of electives, must pass an oral examination during their final semester, conducted by the MAIS Director. Typically, this oral examination will cover the substance of a course paper of the student's choice, which must be submitted to the MAIS Director.

## Political Science, M.A.

Students are generally not admitted into this program. It is available only for students originally enrolled in the Ph.D. program in Political Science who opt not to complete the Ph.D. or doctoral students who have completed comprehensive examinations for the Ph.D. degree. The Master of Arts in Political Science is specifically designed to provide a knowledge of political science and the professional skills necessary to pursue successful careers in governmental, quasi-public, private and political organizations, and technical and two-year college level teaching.

## Learning Outcomes

- Students will demonstrate their acquired skills in quantitative analysis.
- Students will demonstrate their research design skills.
- Students will demonstrate career-relevant knowledge of politics.

## Degree Requirements (30-36 Hours)

Normally, the master's candidate will follow the non-thesis track, which involves completing 30 hours of substantive course work and six additional hours of substantive course work to replace the thesis requirement. Alternatively, master's candidates may pursue a thesis track option, which involves completing 24 hours of substantive course work plus six hours of thesis credit for a total of 30 hours. The program may require more hours in the event of deficiencies. An oral defense is required of master's candidates who chose the thesis option. Non-thesis track/additional course-work master's candidates may fulfill the comprehensive examination requirement in one of two ways:

1. successful completion of the Ph.D. comprehensive examination process fulfills the MA comprehensive examination process;
2. completion of a comprehensive examination in one subfield of Political Science to the satisfaction of a committee of the subfield selected in consultation with the Director of Graduate Studies.

Competency in one foreign language or political research methodology is required for the M.A. degree. Students must complete two graduate courses in statistics to demonstrate competency in research methodology.

## Political Science, Ph.D.

The doctoral degree program with a major in political science is specifically designed to prepare students for academic and top-level public service careers. Students acquire a general knowledge of the discipline of political science, its history, its subject matter, its relationship to other disciplines and professions, and the aspirations and obligations of political scientists.

### Learning Outcomes

- Students will demonstrate their knowledge of the discipline and their theoretical and substantive knowledge of two of the discipline's recognized fields.
- Students will demonstrate their knowledge of basic quantitative skills and, for those students for which it is appropriate, their knowledge of more advanced quantitative skills.
- Students will demonstrate the ability to design syllabi and other instructional materials and to be proficient in the classroom.
- Students will demonstrate their ability to conduct original research.

Admission is based on an evaluation of the applicant's potential for successful graduate work. It is expected that applicants to the political science doctoral program will demonstrate a strong potential for advanced scholarly study. Admission will be based on a holistic evaluation of the candidate's complete academic background, including grades, test scores, past research accomplishments, and the evaluations contained in letters of reference. The admission decision depends in part on the qualifications of the total pool of applicants. There are no formal minimums since strength in one area may offset relative weakness in another area. However, the admissions committee uses the following indicators as rough benchmarks of the probability of success in our

graduate program: scores of at least 600 verbal, 600 quantitative, and 4.5 analytical on the three sections of the GRE, an undergraduate GPA of 3.50 or above, and a TOEFL score of 620 (if applicable) or a comparable score on the IELTS Intl. Academic Course Type 2 exam.

The admission deadlines for political science are:

December 15: fall admission with departmental financial support (applications received after this date will be considered for financial support depending on availability of aid);  
July 1: fall admission.

## Degree Requirements (63 Post-Baccalaureate Hours)

### Distribution of Hours

- First Field: 15 credit hours (including Gateway Proseminar)
- Second Field: 9 credit hours (including Gateway Proseminar)
- Core Courses: 21 credit hours
- Electives: 6 credit hours
- Dissertation: 12 hours
- Total: 63 credit hours

### Distribution of Fields

*Students will choose a first field and a second field from the following list:*

- American Politics
- Comparative Politics
- International Relations
- Political Theory
- Public Administration and Public Policy
- Public Law
- Research Methodology

### Core Courses

Course	Title	Credits
POLI 502	Methods of Political Analysis	3
POLI 701	Theories of Political Inquiry	3
POLI 706	Advanced Methods of Political Analysis	3
POLI 707 or POLI 703	Classics of Political Theory Democratic Theory	3
POLI 803 or POLI 709	Research Methods in Political Science Qualitative Methods of Political Analysis	3
Select two "Gateway Proseminars" taken outside first or second fields		
<b>Total Credit Hours</b>		<b>15</b>

### Field Requirements

Students are required to take the "Gateway Proseminar" in each of their fields. The majority of courses taken to satisfy a field requirement must be taken within the Department of Political Science. For the methods second field, students are required to take 9 hours of course work beyond the core POLI 502 and POLI 701 courses. Students taking political theory as a first (or second) field must take 15 (or 9) hours of course work beyond the POLI 703 or POLI 707 course taken in the core. Students taking POLI 707 as a core course can count POLI 707 as satisfying one of the Gateway Proseminar course requirements (since POLI 707 is the Gateway Proseminar for the field of political theory). Counting

POLI 707 twice in this way does not decrease the number of courses or credit requirements students need to meet the Ph.D. requirements.

## Public Administration, M.P.A.

The Master of Public Administration degree program strives to provide a broadly focused professional degree in the essential management and analytical elements of public administration and public policy analysis. The program attracts a sizable number of both pre-career and mid-career students with a variety of academic and professional backgrounds. Moreover, the program draws students who want to pursue a diverse range of professional careers in both the public and nonprofit sectors, as well as those who are interested in finding employment at the local level, in state agencies, in federal regional offices, and in Washington, D.C. The program gives students the requisite skills and knowledge to become more intelligent consumers of policy issues and more capable actors in their chosen professional careers.

### Learning Outcomes

- Students will believe that the program has improved their ability to lead and manage in public organizations.
- Internship supervisor/Capstone client rating of student ability to lead and manage in organizations like theirs.
- Students will be familiar with major theories and dilemmas of public management.
- Students will be familiar with legal environment and theories of human resource management.
- Students understand and apply theoretical and analytical tools to assess different tax profiles and financial health in different governmental agencies; students identify the potential challenges in managing public budgeting and evaluate the strength and weakness of different budgeting approaches.
- Students will be able to communicate effectively with colleagues and external actors.
- Students will believe that the program has improved their ability to participate in and contribute to the policy process.
- Internship Supervisor/Capstone client will believe that the student has the ability to participate in and contribute to the policy process.
- Students will demonstrate an ability to analyze policy alternatives and recommend policy changes to address social problems.
- Students will believe that the program has improved their ability to analyze, synthesize, think critically, solve problems and make decisions.
- Students will be able to provide reports demonstrating critical thinking and problem solving to colleagues and external stakeholders.
- Students will be able to use qualitative and quantitative reasoning when making decisions.
- Students will be able to produce and present original data analysis.
- Students will believe that their interest in/willingness to serve the public has improved in the program.
- Internship Supervisor/Capstone client will believe that the student has an interest/willingness to serve the public.
- Students will understand the ethical requirements and implications of public service.
- Students will understand the role of bureaucracy in a democracy.
- Students will see the significant of both the public and private solutions to the problems (as well as hybrid approaches to solving

the wicked problems) and propose/apply choices with a distinct public service perspective.

- Students will pursue careers that allow them to serve the public.
- Students will believe that their ability to communicate and interact productively with a diverse and changing workforce and citizenry has improved in the program.
- Internship Supervisor/Capstone client will believe that the student has the ability to communicate and interact productively with a diverse and changing workforce and citizenry.
- Students will be able to communicate within diverse public organizations.

Applicants to the M.P.A. program are expected to have combined GRE verbal and quantitative scores of 300, an undergraduate grade point average of at least 3.00, and a TOEFL score of 600 (computer score of 250) or a comparable score on the IELTS Intl. Academic Course Type 2 exam, if applicable.

Applicants that meet all other requirements with five years or more of exemplary professional, managerial experience, as evidenced by letters of recommendation, may be granted a GRE exception at the discretion of the MPA admissions committee.

The M.P.A. program admits new students for the fall, spring, and summer semesters. Prospective students are encouraged to submit their applications early. This will enable the M.P.A. Admissions Committee and the UofSC Graduate School to process all materials in a timely fashion so that students can be considered for admittance during the requested academic terms. The deadlines for completed applicant files to be received at UofSC are:

- April 1: Admittance for the summer semester
- April 15: Admittance for the fall semester
- November 15: Admittance for the spring semester

For more detailed information on the M.P.A. program, visit <http://artsandsciences.sc.edu/poli/welcome-mpa-program-usc> (<http://artsandsciences.sc.edu/poli/welcome-mpa-program-usc/>)

## Degree Requirements (39 Hours)

The M.P.A. degree requires 39-48 semester hours of credit, depending on the prior preparation of the student. The program curriculum can be broken down into five components.

### Prerequisites

Students must possess a basic proficiency in statistics and a basic understanding of American government. Students who lack such skills/expertise are required to take prerequisite courses in one or both of these areas, preferably at the beginning of their program of study.

### Core Courses

All students must take classes in organizational theory and practice, human resource management, public finance, public policy-making, public data analysis, and public ethics and accountability. Taken together, these courses give students a comprehensive overview of the major elements of public administration and public policy-making.

### Electives

All students must take a set of elective courses that will further their knowledge of, and administrative competency in, a particular area. The electives must constitute a coherent set of courses. But this component

of the curriculum is left flexible so that students can pursue more specialized interests in a variety of relevant fields of study.

## Internship

An internship in a public organization or nonprofit agency is required of all students who lack significant administrative experience. The internship is an integral part of the curriculum, as it gives students an opportunity to experience the real world of public service.

## Capstone Seminar

The capstone seminar is taken by all students, preferably during their last semester in the program. In the capstone seminar, students complete a project in which they integrate the material from other M.P.A. courses in their analyses of contemporary public problems. The M.P.A. program participates in two dual-degree programs with other academic units at the University of South Carolina, and two joint degree programs with other institutions in the state.

Information on dual degree opportunities can be found at Graduate Dual Degree Programs (p. 463).

## Concentration

Students have the option of declaring a concentration in Emergency Management and Planning. Courses taken as part of the concentration count toward program elective requirements.

### Emergency Management and Planning Concentration Requirements (9 Hours)

Course	Title	Credits
GEOG 530	Environmental Hazards	3
GEOG 535	Hazards Analysis and Planning	3
GEOG 563	Advanced Geographic Information Systems	3
<b>Total Credit Hours</b>		<b>9</b>

## Dual Degrees

The M.P.A. program participates in three dual-degree programs with other academic units at the University of South Carolina, and two joint degree programs with other institutions in the state.

- Health Services Policy and Management/Public Administration, M.P.H./M.P.A
- Public Administration/Social Work, M.P.A./M.S.W
- Public Administration/Law, M.P.A./J.D.

# Psychology, Clinical Community

Department Website (<http://www.psych.sc.edu/>)

Jane Roberts, *Department Chair*

## Graduate Directors

Each graduate director chairs the graduate faculty committee responsible for degrees in a given area.

Bret Kloos, *Director, Clinical-Community*

Amit Almor, *Director, Experimental*

Samuel McQuillin, *Director, School*

## Overview

The Department of Psychology offers programs leading to the degrees of Master of Arts and Doctor of Philosophy. There are three graduate programs in the department, including clinical-community psychology, experimental psychology, and school psychology. Faculty in all three areas are available to each graduate student in every program. Detailed information concerning each of these programs (including details of admission procedures and degree requirements not included in this bulletin) may be obtained directly from the department, the director of each graduate program, and the graduate admissions office.

The clinical-community psychology program offers the Ph.D. degree for students who seek to be clinical scientists and researchers/scholars. In addition to formal courses, supervised training in diagnosis and intervention, and supervised research experience, the program offers a wide range of clinical skills and community-based intervention experiences. Applicants for the Ph.D. program in clinical-community psychology who do not already have a research-based master's degree in psychology are required to earn the M.A. in Psychology in the course of earning their Ph.D. degrees. Graduates are employed in providing services within public and private institutions and service organizations, are engaged in independent practice as psychologists, and are employed as faculty members in colleges and universities. The program is fully accredited by the American Psychological Association as a doctoral program in clinical psychology.

The Department of Psychology also participates in the Certificate Program in Gerontology, which is administered by The College of Social Work, and in the Certificate Program in Drug and Addiction Studies, which is administered by the Department of Criminology and Criminal Justice. These certificates are interdisciplinary in nature and are open to qualified graduate students in psychology and other participating departments.

It is important to note that graduate training in psychology includes all of the following: core content courses in the discipline, training and supervision in delivery and application of professional skills, and integration of these components as part of a formal program. Although didactic courses are open, under appropriate conditions, to students not in the psychology degree programs, such students do not have access to professional skills courses and practica or to the integrative program as mentioned. This is to clarify that individual course work is a necessary component of professional training, but such course work is not appropriate for professional applications unless taken by a degree-seeking student in one of the graduate programs in psychology.

## Admissions

Graduate students are permitted to begin programs only in the Fall term. The application deadline is December 1.

To be admitted to full graduate standing, a student should have an undergraduate major in psychology or a closely related discipline with a minimum of 18 semester hours of psychology courses. Admission is competitive and is based upon the content of undergraduate and prior graduate courses taken in degree-seeking programs; performance in those courses (grade point average of better than 3.00 in all courses, and 3.50 or better in psychology course work is desirable); performance on the GRE (successful applicants in the past year have had an average of 1175 quantitative and verbal GRE combined scores); three letters of recommendation; prior research involvement; and (for clinical-community psychology and school psychology programs) prior work and volunteer experiences relevant to the program practice area. The GRE Advanced Psychology test is recommended but not required for applicants to



all three programs: the clinical-community program, experimental and school psychology programs. Applicants also are asked for a written statement of career goals and educational expectations. Criteria are somewhat compensatory (that is, high performance on one criterion can compensate for somewhat lower performance on another).

## Programs

- Clinical-Community Psychology, Ph.D. (p. 126)
- Psychology, M.A. (restricted to Clinical-Community Psychology, Ph.D. students) (p. 127)

## Courses

### PSYC 501 - Human Factors Psychology (3 Credits)

Application of research in experimental psychology to ergonomics, the design of human-environment systems, with emphasis on work settings.  
**Prerequisites:** PSYC 101 and 9 hours of upper-level courses all in psychology, business, engineering, or nursing.

### PSYC 503 - Psychology of Drug Use and Effects (3 Credits)

Research and theoretical considerations of substance abuse. Pharmacological, sociological, psychological, medical, economic, forensic, and other relevant research and treatment disciplines.  
**Prerequisites:** PSYC 450 or PSYC 455 or PSYC 460.

### PSYC 506 - Psychology of Language (3 Credits)

Theories of speech perception, linguistic theories of syntax and semantics, the brain mechanisms underlying language, the development of language in children, and the role of language in thought.  
**Cross-listed course:** LING 567

### PSYC 507 - Cognitive Neuroscience (3 Credits)

Research and theories on the role of the brain in facets of cognitive behavior, including attention, short-term and working memory, perception, language, executive function, thinking, and problem solving.  
**Prerequisites:** C or better in PSYC 405, highly recommended PSYC 455 or PSYC 460.

### PSYC 510 - Child Behavioral and Mental Disorders (3 Credits)

Theories, description, and assessment of child behavior problems and disorders; methods of intervention.  
**Prerequisites:** PSYC 420 or PSYC 410.

**Graduation with Leadership Distinction:** GLD: Community Service

### PSYC 520 - Psychology of Child Development (3 Credits)

Examination of development from conception through older childhood. Specific cognitive and social processes will be given in-depth study.  
**Prerequisites:** PSYC 420.

### PSYC 521 - Psychology of Adolescence (3 Credits)

Theories and research examining social, emotional, and intellectual development in adolescence. Explores influence of family, peer, school, and cultural contexts.  
**Prerequisites:** PSYC 420.

### PSYC 522 - Psychology of Early and Middle Adulthood (3 Credits)

Developmental changes in abilities, personality, and behavior which occur between adolescence and old age.  
**Prerequisites:** PSYC 420.

### PSYC 523 - Psychology of Aging (3 Credits)

Psychological, social, and biological phenomena associated with maturity and aging.  
**Prerequisites:** PSYC 420.

### PSYC 524 - Nature of Students with Mental Retardation (3 Credits)

Nature and causes of mental retardation; behavior and potentialities of persons with mental retardation.  
**Prerequisites:** a course in the areas of child psychology-child development.

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy

### PSYC 525 - The Psychology of the Midlife Woman (3 Credits)

Biological, social, and psychological aspects of the midlife woman.  
**Cross-listed course:** WGST 525  
**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

### PSYC 526 - Prevention of Psychological Problems in Children and Youth at Risk (3 Credits)

Etiology, prevention of, and intervention in behavioral, social, emotional, educational, and psychological problems in children and youth at risk.  
**Prerequisites:** PSYC 410 or PSYC 420 or equivalent.

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy

### PSYC 528 - Psychology of Children with Exceptionalities (3 Credits)

Characteristics, causes, needs, and intervention strategies for children with a broad range of exceptionalities including mental, physical, social/emotional difficulties and atypical gifts and talents.  
**Prerequisites:** PSYC 420 or PSYC 520.

### PSYC 529 - Nature of Students with Specific Learning Disabilities (3 Credits)

Children with average/above average intelligence and specific learning impairments; diagnostic and remedial techniques. Offered by both the College of Education and the Department of Psychology.  
**Prerequisites:** EDEX 523 or PSYC 528.

**Cross-listed course:** EDEX 531

### PSYC 530 - Advanced Social Psychology (3 Credits)

Intensive study of topics selected from the field of social psychology.  
**Prerequisites:** PSYC 430.

### PSYC 550 - Advanced Sensation and Perception (3 Credits)

Intensive study of topics selected from the field of sensation and perception.  
**Prerequisites:** PSYC 450.

### PSYC 560 - Advanced Topics in Neuroscience (3 Credits)

Intensive study of topics selected from the field of neuroscience.  
**Prerequisites:** PSYC 455 or PSYC 460.

### PSYC 565 - Psychology of Physical Activity (3 Credits)

Introduction to psychosocial factors in physical activity. Topics include mental health effects of exercise, behavior change theories applied to physical activity, and physical activity determinants and interventions.  
**Prerequisites:** PSYC 101, PSYC 228.

**PSYC 570 - Neuroscience Laboratory (3 Credits)**

Practice in surgical, histological, and behavioral testing methodology. Two lectures and one three-hour laboratory per week.

**Prerequisites:** PSYC 460.

**PSYC 571 - Cognitive Neuroscience Laboratory (3 Credits)**

Methods of observation and experimentation in cognitive neuroscience. Two lectures and one three-hour laboratory per week.

**Prerequisites:** PSYC 227 and C or better in two courses from PSYC 405, PSYC 450, PSYC 455, PSYC 460, or PSYC 507.

**Prerequisite or Corequisite:** one course from PSYC 400, PSYC 405, PSYC 450, PSYC 455, or PSYC 460.

**PSYC 572 - Cognitive Psychology Laboratory (3 Credits)**

Practice in the experimental techniques used in the study of cognitive psychology. Two lectures and one three-hour laboratory per week.

**Prerequisite or Corequisite:** PSYC 405.

**PSYC 574 - Sensation and Perception Laboratory (3 Credits)**

Concepts and principles in the study of sensation and perception in the laboratory. Two lectures and one three-hour laboratory per week.

**Prerequisite or Corequisite:** PSYC 450.

**PSYC 575 - Developmental Psychology Laboratory (3 Credits)**

Methods of observation and experimentation on human psychological development. Two lectures and one three-hour laboratory per week.

**Prerequisites:** PSYC 226 and PSYC 227.

**Prerequisite or Corequisite:** PSYC 420 or PSYC 520.

**PSYC 580 - Intermediate Statistics for Psychologists (3 Credits)**

Advanced analysis of the uses and applications of statistics to research in psychology, and interpretation of statistics in the psychological literature.

**Prerequisites:** B or better in PSYC 227.

**PSYC 583 - Psychological Tests and Measurement (3 Credits)**

Introduction to the theory and practice of measuring psychological attributes. Emphasis on test construction in a laboratory setting. Hands-on experience in designing, administering, and analyzing psychological tests and measures.

**Prerequisites:** B or better in PSYC 227 and PSYC 228.

**PSYC 584 - History and Systems of Psychology (3 Credits)**

Systematic approaches to psychology.

**Prerequisites:** 9 hours in psychology at 400 level or above.

**PSYC 585 - Advanced General Psychology (3 Credits)**

Review and integration of general principles of psychology. Primarily for students planning graduate study in psychology.

**Prerequisites:** 12 hours in psychology courses numbered above 300.

**PSYC 589 - Selected Topics in Psychology (3 Credits)**

Course content varies and will be announced in the schedule of classes by title.

**PSYC 598 - Individual Research (3 Credits)**

Planning and execution of supervised research in psychology. Approved contract required.

**Prerequisites:** 15 hours of psychology.

**PSYC 599 - Individual Research (3 Credits)**

Planning and execution of supervised research in psychology. Approved contract required.

**Prerequisites:** 15 hours of psychology.

**PSYC 700 - Psychosocial Approaches to Gerontology (3 Credits)**

Introduction to gerontology from the fields of demography, psychology, sociology, social welfare, and economics.

**Cross-listed course:** SOWK 771

**PSYC 701 - Behavioral Assessment and Intervention with Children and Youth (3 Credits)**

A combination of lecture and practicum experiences emphasizing the application of behavioral assessment and intervention techniques in educational, institutional, and home settings. Students receive individual and group supervision throughout the semester.

**Prerequisites:** PSYC 711.

**PSYC 702A - Basics of Neuroscience (3 Credits)**

Functional organization of the nervous system; research and theories of the neurological bases of behavior.

**PSYC 702B - Basics of Cognitive Psychology (3 Credits)**

Research and theories on attention, memory, language, thinking, and other cognitive processes.

**PSYC 702C - Basics of Developmental Psychology (3 Credits)**

Research and theories of psychological development across the lifespan.

**PSYC 702D - Basics of Learning and Motivation (3 Credits)**

Research and theories of instrumental conditioning, classical conditioning, learning, and motivation.

**PSYC 702E - Experimental Design (3 Credits)**

This course covers basic principles of sound experimental design, including such topics as internal and external validity, subject selection factors, and techniques for reducing sampling error and minimizing bias. In addition, the course will discuss practical limitations to ideal experimental design and have students identify the design conventions specific to their field of study.

**PSYC 703A - Integration across Cognitive Psychology and Neuroscience (3 Credits)**

Research and theories of cognitive neuroscience.

**PSYC 703C - Integration across Developmental and Cognitive Psychology (3 Credits)**

Research and theories of cognitive development.

**PSYC 703D - Integration across Areas of Psychology (3 Credits)**

Presentation of research and theories that cross different areas within psychology.

**PSYC 704 - Group Dynamics (3 Credits)**

Offered for an interdisciplinary student clientele interested in group processes and structures. Training is provided in observational methods and techniques of group assessment. Laboratory and field study required.

**PSYC 705 - Psychological Systems and Theories (3 Credits)**

Contemporary trends in systematic approaches and behavior theories.

**PSYC 706 - Seminar in Judgment and Decision Making (3 Credits)**

Research and theories of processes in judgment, choice, and decision making.

**PSYC 709 - Basic Quantitative Methods in the Analysis of Behavioral Data I (3 Credits)**

Quantitative methods for graduate students in psychology and other behavioral sciences. Emphasizes logical/intuitive understanding of the basic techniques, focuses heavily on the application of these methods to psychological research. Three lecture/discussion hours and a one-hour scheduled lab per week.

**Prerequisites:** introductory course in statistics, psychology or mathematics.

**PSYC 710 - Basic Quantitative Methods in the Analysis of Behavioral Data II (3 Credits)**

A continuation of PSYC 709. Three lecture/discussion hours and a one-hour scheduled lab per week.

**Prerequisites:** PSYC 709.

**PSYC 713 - Survey of Psychoeducational Tests and Assessment (3 Credits)**

Consideration of basic issues in evaluation of children, such as reliability, validity, item selection, standardization groups, criterion-referenced vs. norm-based testing, ethics, etc. Includes presentations via various instructional modes of a wide range of psychoeducational assessment procedures with a wide variety of children.

**PSYC 714 - Psychoeducational Assessment of Children I (1-3 Credits)**

A combination of lectures and practicum concerned with interviewing, behavioral observation and analysis, and cognitive-intellectual assessment. Requires involvement in school psychology training-service centers in the schools.

**Prerequisites:** acceptance in graduate psychology department program.

**PSYC 715 - Psychoeducational Assessment of Children II (1-3 Credits)**

A combination of lectures and practicum concerned with assessment of perceptual-motor processes, academic achievement, and personality and interpersonal skills. Requires involvement in school psychology training-service centers in the schools.

**Prerequisites:** PSYC 714 and acceptance in graduate psychology department program.

**PSYC 716 - Assessment of Emotional-Behavioral Functioning (1-3 Credits)**

Consideration, via lecture and/or practicum, of special areas of psychoeducational assessment. Topics will include infant assessment, criterion-referenced assessment, and assessment of neurological problems.

**Prerequisites:** PSYC 714, Acceptance in Department of Psychology graduate program.

**PSYC 717 - Survey of Personality Theories (3 Credits)**

Issues, theories, and research on personality.

**Prerequisites:** 18 hours in psychology.

**PSYC 720 - Psychological Interventions with Children and Families (3 Credits)**

Integration of theory, research, and practice in child clinical and family psychology. Focus on systemic, behavioral, and other orientations in the treatment of children and families.

**PSYC 721 - Developmental Psychopathology and Resilience (3 Credits)**

Theoretical, empirical, and methodological issues in the development of psychopathology or resilience in children, adolescents, and families. Emphasis on research topics related to nature, course, and etiology.

**Prerequisites:** acceptance in graduate psychology department or consent of instructor

**PSYC 725 - Systems and Theories of Psychological Intervention (3 Credits)**

Seminar emphasizing a critical analysis of psychotherapy systems and theories.

**PSYC 726 - Psychological Problems and Resilience (3 Credits)**

A survey of clinical disorders, their origins and characteristics. Includes a review of contemporary diagnostic systems, research, and theory.

**Prerequisites:** PSYC 410.

**PSYC 727 - Foundations of Community Psychology (3 Credits)**

Survey of theoretical foundations, research and practice in community psychology. Topics include prevention, social systems intervention, community participation, innovation in community service delivery systems, and community change processes.

**PSYC 728 - Laboratory in Community Study (1 Credit)**

Designated to accompany Psychology 727. Laboratory will target specific problems, resources, or populations and will provide students with elementary exposure to a community system.

**Prerequisite or Corequisite:** PSYC 727.

**PSYC 732 - Clinical Neuropsychology (3 Credits)**

Overview of relationships between brain structures and function and the assessment of cognitive and emotional behavior in adults and children.

**Prerequisite or Corequisite:** PSYC 702A or comparable course in biopsychology.

**PSYC 733 - Neuropsychological Syndromes in Childhood (3 Credits)**

Applications of neuropsychological theory and research to the study of the learning process, with emphasis upon assessment and intervention with learning disabilities.

**PSYC 734 - Neuropsychological Screening and Assessment (3 Credits)**

Assessment procedures for screening neuropsychological factors in individuals with neurobehavioral deficits.

**PSYC 735 - Survey of Psychopharmacology (3 Credits)**

The effect of drugs upon internal psycho-physiological functioning and upon the behavior of human and animal subjects. Particular emphasis will be given to the psychoactive drugs.

**Prerequisites:** 18 hours in psychology

**PSYC 742 - Consultation and Systems Interventions (3 Credits)**

Focus on understanding the theoretical bases of consultation and developing the skills necessary for the practice of mental health consultation.

**PSYC 743 - Theory and Practice of Mental Health Consultation II (3 Credits)**

Continues the practicum begun in Psychology 742 and develops the skills of administrative mental health consultation and evaluation of consultation programs.

**PSYC 745 - Organizational Behavior (3 Credits)**

Analysis of the organization as a complex interaction system.

**PSYC 749 - Principles of Human Diversity (3 Credits)**

Fundamental, conceptual and empirical knowledge regarding dimensions of diversity, social inequality and the application of this knowledge to psychological research, teaching and practice. Restricted to psychology students. Non-Psychology students need instructor permission to register.

**PSYC 750 - Psychology of Women (3 Credits)**

Women's diversity explored through research on personality, stereotypes, status and power, biological aspects, socialization, sexuality, relationships, mothering, work and achievement, violence against women, psychological disorders, and feminist therapies.

**Cross-listed course:** WGST 750

**PSYC 751 - Race, Class, Gender, and Sexuality (3 Credits)**

Historical and contemporary dimensions of social inequality centered in race, social class, gender, and sexuality.

**PSYC 760 - Issues and Ethics in Clinical-Community Psychology (3 Credits)**

The presentation of ethics in research and practice in clinical-community psychology and the discussion of current professional issues. Covering history and systems in psychology and providing in depth training on the ethical conduct of research.

**PSYC 761 - Psychological Assessment I (3 Credits)**

Develop assessment skills through interviewing, observation, performance testing, and report writing. Experience includes assessment of individuals, couples, and/or families from a variety of perspectives. Didactic/practicum.

**PSYC 762 - Psychological Assessment II (4 Credits)**

Theory of measurement and the construction of measures specific to clinical and community psychology. Intellectual achievement, objective personality, and projective measures. Didactic/practicum.

**PSYC 763 - Clinical Psychology Assessment III (1-4 Credits)**

Conceptualization of cases involving psychological measures. Clients include individuals, couples, and families. Didactic/practicum. May be repeated for up to 4 credits.

**Prerequisites:** PSYC 761.

**PSYC 765 - Externship in School Psychology (3 Credits)**

A closely supervised 20-hour-per-week externship in the techniques of psychological services in school systems. Staff.

**PSYC 770 - Survey of Social Psychology (3 Credits)**

Issues, research, and theories in social psychology.

**Prerequisites:** 18 hours in psychology.

**PSYC 772 - Research Approaches to Human Behavior (3 Credits)**

Nonquantitative aspects of research methodology and experimental design in laboratory and field settings. A critical investigation of artifacts and ethical issues in behavioral research.

**Prerequisites:** PSYC 709.

**PSYC 773 - Research in Clinical-Community Psychology (1-3 Credits)**

Supervised training in the conduct of empirical research in clinical-community psychology. May be repeated once for credit.

**PSYC 777 - Environmental Psychology (3 Credits)**

The study of human behavior and satisfaction in relation to the natural and person-made environment. Topics include environmental stress, risk, social ecology of families, behavior setting theory, and person-environmental relationships.

**Prerequisites:** PSYC 727.

**PSYC 780 - Behavior Therapy (3 Credits)**

A survey of principles, theory, methods, issues, and research in behavior therapy. Behavioral interventions with adults, children and families, organizations, and community settings.

**PSYC 781 - Behavior Therapy Practicum: Adults (1-3 Credits)**

Intensive practicum experience in the use of behavioral and cognitive-behavioral therapy with adult inpatients (psychiatric, geriatric, alcoholic, imprisoned), outpatients, and marital therapy clients.

**PSYC 782 - Child, Adolescent and Family Therapy Practicum (3 Credits)**

Individually supervised practicum in therapy with children, adolescents, and families. Includes exposure to multiple approaches including behavioral and family systems modes of intervention.

**Prerequisites:** PSYC 720.

**PSYC 783 - Health Psychology/Behavioral Medicine (3 Credits)**

Scientific study of the application of psychological principles to prevention of illness, maintenance of health, and the treatment of related medical dysfunctions. Primary emphasis on the use of behavior therapy and behavior modification techniques.

**Prerequisites:** PSYC 711 or PSYC 730.

**PSYC 784 - Clinical Health Psychology Practicum (1-3 Credits)**

Applying clinical health psychology to health-related agencies in the community.

**Prerequisites:** PSYC 762, PSYC 783.

**PSYC 785 - Seminar in Psychotherapy Research (3 Credits)**

Psychotherapy research and selected topics in other clinical research, such as alcoholism and hypnosis.

**PSYC 790 - College Teaching of Psychology I (1-3 Credits)**

Didactic, seminar, and experiential coverage of the teaching of psychology at the college level.

**Prerequisites:** 18 hours in psychology.

**PSYC 791 - College Teaching of Psychology II (1 Credit)**

Didactic, seminar, and experiential coverage of the teaching of psychology at the college level.

**Prerequisites:** 18 hours in psychology or permission of instructor

**PSYC 792A - Responsible Conduct of Research in Psychology and Neuroscience (1 Credit)**

Ethical issues and dilemmas in research. Compliance with national standards.

**PSYC 792B - Issues and Ethics in Research in Psychology and the Teaching of Psychology II (1 Credit)**

Presentation of ethics and issues pertaining to the teaching of psychology and psychological research.

**PSYC 799 - Thesis Preparation (1-9 Credits)**

To be arranged by candidates for the MA degree with the thesis advisor.

**PSYC 801 - Cognitive Neuroscience I (3 Credits)**

Techniques and methodologies of cognitive neuroscience, emphasizing classic research and theoretical perspectives as well as cutting-edge findings. Areas of focus include sensation and perception, attention, motor control, short-term/working memory, and reward/decision-making.

**Prerequisites:** or Corequisite: Completion of 6 credits from PSYC 702A-D.

**PSYC 802 - Cognitive Neuroscience II (3 Credits)**

Detailed exploration of the techniques and methodologies of cognitive neuroscience and the brain mechanisms sub-serving long-term memory, autobiographical memory, language, emotion, social cognition, and cognitive development.

**Prerequisite or Corequisite:** PSYC 801.

**PSYC 816 - Advanced Research in Clinical-Community Psychology (1-3 Credits)**

Supervised training in the conduct of empirical research in clinical-community psychology.

**PSYC 818 - Research in the Schools (3 Credits)**

Supervised psychological research on school-related problems; participation in ongoing program of research. Required of all doctoral candidates in psychology.

**PSYC 819 - Seminar in Biological Psychology (3 Credits)**

Theoretical and empirical issues in an area of current interest in biological psychology. May be repeated with different topics.

**Prerequisites:** PSYC 730.

**PSYC 820 - Seminar in Developmental Psychology (3 Credits)**

Theoretical and empirical issues in an area of current interest in developmental psychology. May be repeated with different topics.

**Prerequisites:** PSYC 751.

**PSYC 821 - Theory of Psychological Measurement (3 Credits)**

A survey of psychological scaling and factor theory, together with special techniques for achieving reliability and validity, including item analysis.

**Prerequisites:** PSYC 225 or the equivalent.

**PSYC 822 - Seminar in Cognitive Psychology (3 Credits)**

Theoretical and empirical issues in an area of current interest in cognitive psychology. May be repeated with different topics.

**Prerequisites:** PSYC 712.

**PSYC 823 - Multivariate Analysis of Behavioral Data (3 Credits)**

Advanced topics in multiple-variable research. Topics include multiple linear regression, polynomial regression, canonical correlation, discriminant function, and the analysis of variance using orthogonal polynomials and multidimensional scaling, both metric and nonmetric approaches.

**Prerequisites:** PSYC 710.

**PSYC 824 - Special Topics in Quantitative Psychology (3 Credits)**

Theoretical and empirical issues in an area of current interest in quantitative methods and quantitative psychology. May be repeated as content varies by title.

**Prerequisite or Corequisite:** PSYC 710.

**PSYC 825 - Introduction to Statistical Mediation Analysis (3 Credits)**

Mediation analysis and statistical methods for assessing mediating variables.

**Prerequisites:** PSYC 709 and PSYC 710 or STAT 700 and STAT 701.

**PSYC 826 - Family Psychotherapy (3 Credits)**

Advanced topics in family psychotherapy.

**Prerequisites:** PSYC 720, acceptance in clinical-community or school psychology graduate program, and consent of instructor

**PSYC 827 - Applied Individual and Couples Psychotherapy (3 Credits)**

Individually supervised practice in individual and couples psychotherapy.

**Prerequisites:** PSYC 725.

**PSYC 828 - Applied Group Psychotherapy (1-3 Credits)**

Advanced theory and research methods with supervised practice in the modification of personality and behavior through group interaction.

**PSYC 829 - Community Psychology Practicum I (1-3 Credits)**

Individually supervised field assignments in the community.

**PSYC 830 - Advanced Child, Adolescent and Family Therapy Practicum (1-3 Credits)**

Individually supervised advanced practicum in child, adolescent and family therapeutic intervention.

**Prerequisites:** PSYC 782.

**PSYC 831 - Practicum in Psychological Assessment (1-3 Credits)**

Training for advanced students in testing, assessment, and psychodiagnostics under the supervision of psychology staff.

**PSYC 832A - Practicum in School Psychology (3 Credits)**

Qualified advanced students will perform psychological evaluations and render other services in a public school setting under the supervision of the school psychology faculty. Cases dealt with include children with general or special learning difficulties.

**PSYC 832B - Practicum in School Psychology (1-3 Credits)**

Qualified advanced students will perform psychological evaluations and render other services in a public school setting under the supervision of the school psychology faculty. Cases dealt with include children with general or special learning difficulties.

**PSYC 832C - Practicum in School Psychology (1-3 Credits)**

Qualified advanced students will perform psychological evaluations and render other services in a public school setting under the supervision of the school psychology faculty. Cases dealt with include children with general or special learning difficulties.

**PSYC 833 - Practicum in Mental Retardation (1-3 Credits)**

Qualified advanced students will perform psychological evaluations and other clinical services under the supervision of mental retardation faculty in designated settings such as the USC Psychological Service Center, Midlands Training School, and other agencies providing services for persons with mental retardation. The assignment of cases will be based on a previous diagnosis of mental retardation or the probable involvement of mental retardation in client to be studied.

**Prerequisites:** PSYC 519.

**PSYC 834 - Experimental Psychopathology (3 Credits)**

A survey of experimental findings on psychological behavior in animals and humans and their theoretical implications. An introduction to applicable research procedures.

**PSYC 835 - Advanced Psychotherapy Practicum (1-3 Credits)**

Supervised psychotherapy with children, adolescents, or adults, together with additional training in marriage counseling, behavior therapy, and family therapy.

**Prerequisites:** PSYC 827 or PSYC 830.

**PSYC 835A - Advanced Psychotherapy Practicum (1-3 Credits)**

Supervised psychotherapy with children, adolescents, or adults, together with additional training in marriage counseling, behavior therapy, and family therapy.

**Prerequisites:** PSYC 827 or PSYC 830.

**PSYC 835B - Advanced Psychotherapy Practicum (1-3 Credits)**

Supervised psychotherapy with children, adolescents, or adults, together with additional training in marriage counseling, behavior therapy, and family therapy.

**Prerequisites:** PSYC 827 or PSYC 830.

**PSYC 835C - Advanced Psychotherapy Practicum (1-3 Credits)**

Supervised psychotherapy with children, adolescents, or adults, together with additional training in marriage counseling, behavior therapy, and family therapy.

**Prerequisites:** PSYC 827 or PSYC 830.

**PSYC 836 - Seminar in Psychopharmacology (3 Credits)**

Theoretical and empirical issues in an area of current interest in psychopharmacology. May be repeated with different topics.

**Prerequisites:** PSYC 735

**PSYC 837 - Autism Theory and Diagnostics (1-3 Credits)**

Theory, methods and comprehensive assessment of autism spectrum disorders in children and adolescents using a developmental approach. Emphasizes the development of critical thinking in relation to the selection, administration, interpretation, and application of gold-standard diagnostic measures of autism.

**Prerequisites:** PSYC 714 and PSYC 716 or equivalent.

**PSYC 838 - Seminar in Learning and Conditioning (3 Credits)**

Theoretical and empirical issues in an area of current interest in learning and conditioning. May be repeated with different topics.

**Prerequisites:** PSYC 711.

**PSYC 839 - Community Psychology Practicum II (3 Credits)**

Supervised practicum experience in community need assessment and the development of grant applications. Placement in state agencies and community programs.

**Prerequisites:** PSYC 727 and PSYC 829.

**PSYC 840 - Seminar in Professional School Psychology (3 Credits)**

A survey of the role of the psychologist functioning in a school setting, the associated problems and methods, including relationships with children and parents with teachers, administrators, and other school personnel.

**PSYC 841 - Advanced Study in Selected Topics (1-6 Credits)**

Special assignments to meet the needs of individual students. Conferences with instructor and staff. May be repeated with different topics.

**PSYC 843 - Seminar in Social Psychology (3 Credits)**

Theoretical and empirical issues in an area of current interest in social psychology. May be repeated with different topics.

**Prerequisites:** PSYC 770.

**PSYC 845 - Topics in Community Psychology (3 Credits)**

Theoretical and empirical issues in an area of current interest in community psychology. May be repeated with different topics.

**Prerequisites:** PSYC 727.

**PSYC 850 - Academic Interventions (3 Credits)**

Overview of consultation and systems-level interventions in psychological services.

**PSYC 860 - Advanced Study of Selected Problems in Clinical Psychology (3 Credits)****PSYC 865 - Internship in School Psychology (1 Credit)**

Two semesters required for Ph.D. Student is registered upon recommendation of the student's advisory committee. Will be graded as satisfactory (S) or unsatisfactory (U).

**PSYC 888 - Selected Topics in Psychology (1-6 Credits)**

Intensive study in an advanced area in psychology. May be repeated for credit.

**PSYC 889 - Independent Advanced Research (1-9 Credits)**

Doctoral-level research additional to that involved in the doctoral dissertation.

**PSYC 899 - Doctoral Research and Dissertation Preparation (1-12 Credits)**

# Clinical-Community Psychology, Ph.D.

## Learning Outcomes

- Students will select and use appropriate assessment tools and methods, effectively conduct clinical interviews, and write integrated, systems-based assessment reports and case conceptualizations. Students will appropriately implement and evaluate evidence-based interventions in applied work. Students effectively give and receive feedback from supervisors. Students demonstrate effective interpersonal and communication skills in applied work. Students demonstrate awareness of how one's biases influence all aspects of applied work.
- Students demonstrate understanding of differences in beliefs and practices that emerge from various aspects of identity and how these affect one's own work. Students demonstrate an understanding of diversity issues and multi-cultural sensitivity issues in their own work and the broader field of psychology.

## Degree Requirements (81 hours)

A minimum of 69 credit hours of course and practica work and 12 hours of dissertation work (PSYC 899) are required beyond the baccalaureate degree. Course work is distributed across five categories with a minimum number of credits in each category.

### Core Psychology Courses (19 hours)

Course	Title	Credits
PSYC 709	Basic Quantitative Methods in the Analysis of Behavioral Data I	3
PSYC 710	Basic Quantitative Methods in the Analysis of Behavioral Data II	3
PSYC 761	Psychological Assessment I	3
PSYC 702A	Basics of Neuroscience	3
PSYC 702D	Basics of Learning and Motivation	3
or PSYC 702B	Basics of Cognitive Psychology	
PSYC 770	Survey of Social Psychology	3
PSYC 820	Seminar in Developmental Psychology	3
<b>Total Credit Hours</b>		<b>21</b>

### Research Courses (23 hours)

Course	Title	Credits
PSYC 772	Research Approaches to Human Behavior	3
PSYC 773	Research in Clinical-Community Psychology	2
PSYC 799	Thesis Preparation	6
PSYC 899	Doctoral Research and Dissertation Preparation	12
<b>Total Credit Hours</b>		<b>23</b>

### Specialty Content Courses (18 hours)

Course	Title	Credits
PSYC 725	Systems and Theories of Psychological Intervention	3
PSYC 726	Psychological Problems and Resilience	3
PSYC 727	Foundations of Community Psychology	3
PSYC 760	Issues and Ethics in Clinical-Community Psychology	3

PSYC 749	Principles of Human Diversity	3
<b>Seminar in Community Psychology</b>		
Select one of the following:		3
PSYC 742	Consultation and Systems Interventions	
PSYC 745	Organizational Behavior	
PSYC 777	Environmental Psychology	
PSYC 783	Health Psychology/Behavioral Medicine	
PSYC 845	Topics in Community Psychology	
<b>Total Credit Hours</b>		<b>18</b>

## Practicum Courses (12 hours)

Intervention Practica, 2 of 3 series

Course	Title	Credits
Select two of the following series:		12
PSYC 782 & 830	Child, Adolescent and Family Therapy Practicum and Advanced Child, Adolescent and Family Therapy Practicum	
PSYC 827 & 835	Applied Individual and Couples Psychotherapy and Advanced Psychotherapy Practicum	
PSYC 829 & 839	Community Psychology Practicum I and Community Psychology Practicum II	
<b>Total Credit Hours</b>		<b>12</b>

## Electives (9 hours)

- Psychology courses numbered 700+ (500+ for other departments)

## Additional Requirements

The Ph.D. degree in clinical-community psychology also requires successful completion of qualifying requirements (masters thesis and masters oral), a general comprehensive examination (comprehensive paper), a specialty comprehensive examination (either in clinical or community), an oral comprehensive examination, and a predoctoral research internship.

Also required are an approved Ph.D. dissertation, and a one-year, predoctoral, full-time internship. Most students obtain an APA-approved (or approval-seeking) internship. Students have the option of declaring a concentration in Quantitative Methods in Psychology.

## Quantitative Methods in Psychology Concentration Requirements

- Must be accepted to a University of South Carolina Psychology Department Doctoral Program (Clinical-Community, School, or Experimental)
- Make a B or better in four courses (12 hours) that have 710 as a pre-requisite (i.e., advanced quantitative courses.) 709/710 do not count, nor do assessment or methods classes. Courses must be at the 700 level or higher.
- Two of the four courses (6 hours) are required to be taught in the department d. The third and fourth courses can optionally be taught in another department contingent upon approval from the Concentration Program Director.

The sequence of events and more details concerning specific aspects (including the required concurrent master's degree) are in the current *Clinical-Community Psychology Doctoral Program Graduate Student Handbook*, provided to all incoming students.

## Psychology, M.A. (restricted to Clinical-Community Psychology, Ph.D. students)

The Masters Degree was established as a way to formalize the research experience which students receive in the Clinical-Community Psychology, Ph.D. (p. 126) program, as well as to allow them to receive a degree mid-way in the program to enhance their viability for hiring in community assistantships and for acceptance at internship settings. The Masters Degree does not increase the course requirements which students will have to take to achieve their Ph.D. but rather specifies which courses required for the Ph.D. would apply toward a Masters Degree and formalizes the prior second year research project into a Masters thesis. Students will be required to defend the Masters thesis and jointly take an oral comprehensive examination on their coursework to date at the time of the defense. All students who enter the program without a Masters Degree must complete the requirements for a Masters.

## Degree Requirements (47 Hours)

Required courses for the Masters Degree include the following:

### Research Methods and Statistics (9 Hours)

Course	Title	Credits
PSYC 709	Basic Quantitative Methods in the Analysis of Behavioral Data I	3
PSYC 710	Basic Quantitative Methods in the Analysis of Behavioral Data II	3
PSYC 772	Research Approaches to Human Behavior	3
<b>Total Credit Hours</b>		<b>9</b>

### Core General Psychology Courses (15 Hours)

Course	Title	Credits
PSYC 726	Psychological Problems and Resilience	3
PSYC 727	Foundations of Community Psychology	3
PSYC 749	Principles of Human Diversity	3
PSYC 770	Survey of Social Psychology	3
PSYC 820	Seminar in Developmental Psychology	3
<b>Total Credit Hours</b>		<b>15</b>

### Foundations of Clinical Psychology (6 Hours)

Course	Title	Credits
PSYC 725	Systems and Theories of Psychological Intervention	3
PSYC 761	Psychological Assessment I	3
<b>Total Credit Hours</b>		<b>6</b>

### Research Leading to Thesis (8 Hours)

Course	Title	Credits
PSYC 773	Research in Clinical-Community Psychology	1-3
PSYC 799	Thesis Preparation	1-9
<b>Total Credit Hours</b>		<b>2-12</b>

### Practicum (6 Hours)

- 6 hours of Intervention Practicum

## Electives (3 Hours)

- 3 hours (other Psyc courses 700 and higher or non-Psyc courses 500 and higher)

# Psychology, Experimental

Department Website ([https://sc.edu/study/colleges\\_schools/artsandsciences/psychology/](https://sc.edu/study/colleges_schools/artsandsciences/psychology/))

Jane Roberts, *Department Chair*

## Graduate Directors

Each graduate director chairs the graduate faculty committee responsible for degrees in a given area.

Bret Kloos, *Director, Clinical-Community*

Amit Almor, *Director, Experimental*

Samuel McQuillin, *Director, School*

## Overview

The Department of Psychology offers programs leading to the degrees of Master of Arts and Doctor of Philosophy. There are three graduate programs in the department, including clinical-community psychology, experimental psychology, and school psychology. Faculty in all three areas are available to each graduate student in every program. Detailed information concerning each of these programs (including details of admission procedures and degree requirements not included in this bulletin) may be obtained directly from the department, the director of each graduate program, and the graduate admissions office.

The experimental psychology program offers the Ph.D. degree for students who seek to be research scientists and scholars. Many students also complete the M.A. degree as they progress toward the doctoral degree. Specializations include behavioral neuroscience, cognitive psychology, cognitive neuroscience, and developmental psychology. Graduates are employed as faculty members in colleges and universities and research psychologists within public agencies and private industry.

The Department of Psychology also participates in the Certificate Program in Gerontology, which is administered by The College of Social Work, and in the Certificate Program in Drug and Addiction Studies, which is administered by the Department of Criminology and Criminal Justice. These certificates are interdisciplinary in nature and are open to qualified graduate students in psychology and other participating departments.

It is important to note that graduate training in psychology includes all of the following: core content courses in the discipline, training and supervision in delivery and application of professional skills, and integration of these components as part of a formal program. Although didactic courses are open, under appropriate conditions, to students not in the psychology degree programs, such students do not have access to professional skills courses and practica or to the integrative program as mentioned. This is to clarify that individual course work is a necessary component of professional training, but such course work is not appropriate for professional applications unless taken by a degree-seeking student in one of the graduate programs in psychology.

## Admission

Graduate students are permitted to begin programs only in the Fall term and in special circumstances, the Spring semester. The application deadline is December 1.

To be admitted to full graduate standing, a student should have an undergraduate major in psychology or a closely related discipline with a minimum of 18 semester hours of psychology courses. Admission is competitive and is based upon the content of undergraduate and prior graduate courses taken in degree-seeking programs; performance in those courses (grade point average of better than 3.00 in all courses, and 3.50 or better in psychology course work is desirable); performance on the GRE (successful applicants in the past year have had an average of 1175 quantitative and verbal GRE combined scores); three letters of recommendation; prior research involvement; and (for clinical-community psychology and school psychology programs) prior work and volunteer experiences relevant to the program practice area. The GRE Advanced Psychology test is recommended but not required for applicants to all three programs: the clinical-community program, experimental and school psychology programs. Applicants also are asked for a written statement of career goals and educational expectations. Criteria are somewhat compensatory (that is, high performance on one criterion can compensate for somewhat lower performance on another).

## Programs

- Experimental Psychology, M.A. (restricted to Experimental Psychology, Ph.D. students) (p. 130)
- Experimental Psychology, Ph.D. (p. 130)

## Courses

### PSYC 501 - Human Factors Psychology (3 Credits)

Application of research in experimental psychology to ergonomics, the design of human-environment systems, with emphasis on work settings.  
**Prerequisites:** PSYC 101 and 9 hours of upper-level courses all in psychology, business, engineering, or nursing.

### PSYC 503 - Psychology of Drug Use and Effects (3 Credits)

Research and theoretical considerations of substance abuse. Pharmacological, sociological, psychological, medical, economic, forensic, and other relevant research and treatment disciplines.  
**Prerequisites:** PSYC 450 or PSYC 455 or PSYC 460.

### PSYC 506 - Psychology of Language (3 Credits)

Theories of speech perception, linguistic theories of syntax and semantics, the brain mechanisms underlying language, the development of language in children, and the role of language in thought.  
**Cross-listed course:** LING 567

### PSYC 507 - Cognitive Neuroscience (3 Credits)

Research and theories on the role of the brain in facets of cognitive behavior, including attention, short-term and working memory, perception, language, executive function, thinking, and problem solving.  
**Prerequisites:** C or better in PSYC 405, highly recommended PSYC 455 or PSYC 460.

### PSYC 510 - Child Behavioral and Mental Disorders (3 Credits)

Theories, description, and assessment of child behavior problems and disorders; methods of intervention.  
**Prerequisites:** PSYC 420 or PSYC 410.

**Graduation with Leadership Distinction:** GLD: Community Service

### PSYC 520 - Psychology of Child Development (3 Credits)

Examination of development from conception through older childhood. Specific cognitive and social processes will be given in-depth study.  
**Prerequisites:** PSYC 420.



**PSYC 521 - Psychology of Adolescence (3 Credits)**

Theories and research examining social, emotional, and intellectual development in adolescence. Explores influence of family, peer, school, and cultural contexts.

**Prerequisites:** PSYC 420.

**PSYC 522 - Psychology of Early and Middle Adulthood (3 Credits)**

Developmental changes in abilities, personality, and behavior which occur between adolescence and old age.

**Prerequisites:** PSYC 420.

**PSYC 523 - Psychology of Aging (3 Credits)**

Psychological, social, and biological phenomena associated with maturity and aging.

**Prerequisites:** PSYC 420.

**PSYC 524 - Nature of Students with Mental Retardation (3 Credits)**

Nature and causes of mental retardation; behavior and potentialities of persons with mental retardation.

**Prerequisites:** a course in the areas of child psychology-child development.

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy

**PSYC 525 - The Psychology of the Midlife Woman (3 Credits)**

Biological, social, and psychological aspects of the midlife woman.

**Cross-listed course:** WGST 525

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

**PSYC 526 - Prevention of Psychological Problems in Children and Youth at Risk (3 Credits)**

Etiology, prevention of, and intervention in behavioral, social, emotional, educational, and psychological problems in children and youth at risk.

**Prerequisites:** PSYC 410 or PSYC 420 or equivalent.

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy

**PSYC 528 - Psychology of Children with Exceptionalities (3 Credits)**

Characteristics, causes, needs, and intervention strategies for children with a broad range of exceptionalities including mental, physical, social/emotional difficulties and atypical gifts and talents.

**Prerequisites:** PSYC 420 or PSYC 520.

**PSYC 529 - Nature of Students with Specific Learning Disabilities (3 Credits)**

Children with average/above average intelligence and specific learning impairments; diagnostic and remedial techniques. Offered by both the College of Education and the Department of Psychology.

**Prerequisites:** EDEX 523 or PSYC 528.

**Cross-listed course:** EDEX 531

**PSYC 530 - Advanced Social Psychology (3 Credits)**

Intensive study of topics selected from the field of social psychology.

**Prerequisites:** PSYC 430.

**PSYC 550 - Advanced Sensation and Perception (3 Credits)**

Intensive study of topics selected from the field of sensation and perception.

**Prerequisites:** PSYC 450.

**PSYC 560 - Advanced Topics in Neuroscience (3 Credits)**

Intensive study of topics selected from the field of neuroscience.

**Prerequisites:** PSYC 455 or PSYC 460.

**PSYC 565 - Psychology of Physical Activity (3 Credits)**

Introduction to psychosocial factors in physical activity. Topics include mental health effects of exercise, behavior change theories applied to physical activity, and physical activity determinants and interventions.

**Prerequisites:** PSYC 101, PSYC 228.

**PSYC 570 - Neuroscience Laboratory (3 Credits)**

Practice in surgical, histological, and behavioral testing methodology.

Two lectures and one three-hour laboratory per week.

**Prerequisites:** PSYC 460.

**PSYC 571 - Cognitive Neuroscience Laboratory (3 Credits)**

Methods of observation and experimentation in cognitive neuroscience.

Two lectures and one three-hour laboratory per week.

**Prerequisites:** PSYC 227 and C or better in two courses from PSYC 405, PSYC 450, PSYC 455, PSYC 460, or PSYC 507.

**Prerequisite or Corequisite:** one course from PSYC 400, PSYC 405, PSYC 450, PSYC 455, or PSYC 460.

**PSYC 572 - Cognitive Psychology Laboratory (3 Credits)**

Practice in the experimental techniques used in the study of cognitive psychology. Two lectures and one three-hour laboratory per week.

**Prerequisite or Corequisite:** PSYC 405.

**PSYC 574 - Sensation and Perception Laboratory (3 Credits)**

Concepts and principles in the study of sensation and perception in the laboratory. Two lectures and one three-hour laboratory per week.

**Prerequisite or Corequisite:** PSYC 450.

**PSYC 575 - Developmental Psychology Laboratory (3 Credits)**

Methods of observation and experimentation on human psychological development. Two lectures and one three-hour laboratory per week.

**Prerequisites:** PSYC 226 and PSYC 227.

**Prerequisite or Corequisite:** PSYC 420 or PSYC 520.

**PSYC 580 - Intermediate Statistics for Psychologists (3 Credits)**

Advanced analysis of the uses and applications of statistics to research in psychology, and interpretation of statistics in the psychological literature.

**Prerequisites:** B or better in PSYC 227.

**PSYC 583 - Psychological Tests and Measurement (3 Credits)**

Introduction to the theory and practice of measuring psychological attributes. Emphasis on test construction in a laboratory setting. Hands-on experience in designing, administering, and analyzing psychological tests and measures.

**Prerequisites:** B or better in PSYC 227 and PSYC 228.

**PSYC 584 - History and Systems of Psychology (3 Credits)**

Systematic approaches to psychology.

**Prerequisites:** 9 hours in psychology at 400 level or above.

**PSYC 585 - Advanced General Psychology (3 Credits)**

Review and integration of general principles of psychology. Primarily for students planning graduate study in psychology.

**Prerequisites:** 12 hours in psychology courses numbered above 300.

**PSYC 589 - Selected Topics in Psychology (3 Credits)**

Course content varies and will be announced in the schedule of classes by title.

**PSYC 598 - Individual Research (3 Credits)**

Planning and execution of supervised research in psychology. Approved contract required.

**Prerequisites:** 15 hours of psychology.

**PSYC 599 - Individual Research (3 Credits)**

Planning and execution of supervised research in psychology. Approved contract required.

**Prerequisites:** 15 hours of psychology.

## Experimental Psychology, M.A. (restricted to Experimental Psychology, Ph.D. students)

Experimental Psychology, M.A. (restricted to Experimental Psychology, Ph.D. students)

The MA in Experimental Psychology is an option available for students enrolled in the Experimental Psychology, Ph.D. (p. 130) who choose to take the additional steps to obtain the master's degree concurrent with the doctoral program in Experimental Psychology. Students seeking a terminal master's degree are not admitted to the program; instead, students admitted to the doctoral program are automatically admitted to the master's program, if they desire that degree.

The MA curriculum is designed to provide expertise in one area of Experimental Psychology, along with advanced knowledge of several additional areas within the field. The degree is awarded upon successful completion of course work, submission of an acceptable thesis, and satisfactory performance on a comprehensive, oral examination.

### Learning Outcomes

- All graduates will demonstrate fundamental knowledge of theory and research in behavioral neuroscience, cognitive neuroscience, cognitive psychology and developmental psychology at the level to pursue a Ph.D. in Experimental Psychology.
- All graduates will demonstrate expertise in experimental design and data analyses in their field of inquiry at a good level or above in their Master's thesis.
- All graduate will be able to explain and apply the ethical standards of the field of psychology as they apply to their Master's Theses.

### Degree Requirements (30 hours)

30 hours, with at least 15 hours at the 700 level or above.

#### Required Courses (6 hours)

Course	Title	Credits
Two basic methods courses:		
PSYC 709	Basic Quantitative Methods in the Analysis of Behavioral Data I	3
PSYC 710	Basic Quantitative Methods in the Analysis of Behavioral Data II	3
<b>Total Credit Hours</b>		<b>6</b>

### Breadth Course (3 hours)

Breadth courses are electives whose focus is outside the student's primary area of study, but can be complementary to their research focus. This course should be selected in conjunction with the student's advising committee and approved by the program director.

### Core Area Courses (6 hours)

Specialized seminar courses necessary for the student's curriculum and research goals. Typically, these are core courses within the Department of Psychology, however with approval of the advising committee and graduate program director survey courses from other departments can be substituted (e.g., PHPH, Public Health, School of Medicine, Statistics)

### Electives (9-12 hours)

Additional training tailored to each student to enhance specialized training in the field. Elective courses can include seminars and laboratory work done as individual research credit hours (PSYC 889; maximum 9 hrs). Elective courses may be taught by any graduate program or professional school at the University of South Carolina, although typically a student will take at least some of his or her elective courses within the program. Your Advising Committee must approve all elective courses. You must submit an Approval of Elective Courses to your committee. The standard time to do so is during your yearly Advising Committee Evaluation meeting. Electives are tailored to each student to enhance specialized training in the field.

### Thesis Preparation (3-6 hours)

All students must take at least 3, but no more than 6 credit hours of PSYC 799 with their main advisor. The specific number of credit hours will be determined in consultation with the advising committee so as to ensure that, with the electives courses, the student meets the 30 credit hours requirement for the Masters degree.

### Thesis and Comprehensive Examination

A research thesis is required, beginning with approval of a prospectus by the thesis committee and culminating in a defense of the written thesis. An M.A. comprehensive oral examination may be combined with the thesis defense or be conducted separately. The sequence of events and more details concerning specific aspects are in the current *Graduate Program in Experimental Psychology Student Handbook*, which is posted on the Web.

## Experimental Psychology, Ph.D.

### Learning Outcomes

- Ph.D. students will be able to demonstrate fundamental knowledge in the areas of behavioral neuroscience, cognitive neuroscience, cognitive psychology, and developmental psychology as well as expert specialization within one of these domains.
- Students will demonstrate advanced knowledge in behavioral neuroscience, cognitive psychology, cognitive neuroscience or developmental psychology at a good or better level.
- Students will conduct and describe ethical psychological research that advances the state of knowledge in the field of inquiry in their dissertation at a good or better level.
- Graduating students and alumni from the Experimental Psychology Ph.D. program will achieve placement in the type of teaching, research or industry position that is compatible with their individual goals.

## Degree Requirements (60 Post-Baccalaureate Hours)

Course	Title	Credits
<b>Required Courses:</b> <sup>1</sup>		
PSYC 709	Basic Quantitative Methods in the Analysis of Behavioral Data I	3
PSYC 710	Basic Quantitative Methods in the Analysis of Behavioral Data II	3
<b>Select one advanced quantitative methods course</b> <sup>2</sup>		<b>3</b>
PSYC 702E	Experimental Design	
PSYC 821	Theory of Psychological Measurement	
PSYC 823	Multivariate Analysis of Behavioral Data	
PSYC 824	Special Topics in Quantitative Psychology	
PSYC 825	Introduction to Statistical Mediation Analysis	
<b>Select one advanced area methods course:</b>		<b>3</b>
Course to be selected in conjunction with the students advising committee and with the approval of the program director. <sup>3</sup>		
<b>Select one ethics and professional development course:</b>		<b>3</b>
PSYC 792A	Responsible Conduct of Research in Psychology and Neuroscience	
PSYC 792B	Issues and Ethics in Research in Psychology and the Teaching of Psychology II	
1 additional hr, to be approved by student's advising committee.		
<b>Select 6 hours of breadth courses</b> <sup>4</sup>		<b>6</b>
<b>Select 6 hours of core area courses</b> <sup>5</sup>		<b>6</b>
<b>Select 21 hours of electives</b> <sup>6</sup>		<b>21</b>
<b>Dissertation Research Credits</b>		<b>12</b>
PSYC 899	Doctoral Research and Dissertation Preparation ((The Graduate School requires a minimum of 12 credit hours of Dissertation Preparation))	
<b>Total Credit Hours</b>		<b>60</b>

<sup>1</sup> Basic Quantitative Methods 1 & 2 can also be satisfied by any of the following alternative sequences: BIOS 757, BIOS 758; STAT 700, STAT 701; STAT 702, STAT 703; EDRM 710, EDRM 711; NURS 810, NURS 811.

<sup>2</sup> One Advanced Quantitative Methods Course may be satisfied by any three 3-credit hour quantitative or statistical graduate courses from another program (e.g., Public Health, School of Medicine, Statistics, College of Education).

<sup>3</sup> Can include additional advanced quantitative courses as well as more specialized courses in research methods offered as PSYC 888.

<sup>4</sup> Breadth courses are electives whose focus is outside the student's primary area of study, but can be complementary to their research focus. Courses should be selected in conjunction with the student's advising committee and approved by the program director.

<sup>5</sup> Specialized seminar courses necessary for the student's curriculum and research goals. Typically, these are core courses within the Department of Psychology, however with approval of the advising committee and graduate program director survey courses from other departments can be substituted (e.g., PHPH, Public Health, School of Medicine, Statistics)

<sup>6</sup> Additional training tailored to each student to enhance specialized training in the field. Elective courses can include seminars and laboratory work done as individual research credit hours (PSYC 889; maximum 9 hrs). At least six of these credit hours must be done under the direction of a graduate faculty member other than the major professor. Elective courses may be taught by any graduate program or professional school at the University of South Carolina, although typically a student will take at least some of his or her elective courses within the program. Your Advising Committee must approve all elective courses. You must submit an Approval of Elective Courses to your committee. The standard time to do so is during your yearly Advising Committee Evaluation meeting. Electives are tailored to each student to enhance specialized training in the field.

### Thesis and Comprehensive Examination

The Ph.D. degree in experimental psychology also requires successful completion of a qualifying examination, a written comprehensive examination, and a doctoral oral comprehensive examination. Also required is an approved Ph.D. dissertation. Students have the option of declaring a concentration in Quantitative Methods in Psychology. Concentration requirements are: a. Must be accepted to a University of South Carolina Psychology Department Doctoral Program (Clinical-Community, School, or Experimental) b. Make a B or better in four courses (12 hours) that have 710 as a pre-requisite (i.e., advanced quantitative courses.) 709/710 do not count, nor do assessment or methods classes. Courses must be at the 700 level or higher. c. Two of the four courses (6 hours) are required to be taught in the department d. The third and fourth courses can optionally be taught in another department contingent upon approval from the Concentration Program Director.

The sequence of events and more details concerning specific aspects are in the current *Graduate Program in Experimental Psychology Student Handbook*, which is posted on the Web.

## Psychology, School

### Overview

Department Website (<http://www.psych.sc.edu/>)

Jane Roberts, *Department Chair*

### Graduate Directors

Each graduate director chairs the graduate faculty committee responsible for degrees in a given area.

Bret Kloos, *Director, Clinical-Community*

Amit Almor, *Director, Experimental*

Samuel McQuillan, *Director, School*

The Department of Psychology offers programs leading to the degrees of Master of Arts and Doctor of Philosophy. There are three graduate programs in the department, including clinical-community psychology, experimental psychology, and school psychology. Faculty in all three areas are available to each graduate student in every program. Detailed information concerning each of these programs (including details of admission procedures and degree requirements not included in this bulletin) may be obtained directly from the department, the director of each graduate program, and the graduate admissions office.

The school psychology program offers the Ph.D. degree for students who seek to be practitioners and researchers/scholars. In addition to formal courses, supervised training in diagnosis and intervention, and

supervised research experience, the program offers a wide range of experiences in the public school systems. Graduates are employed in providing services within public schools as well as other public and private institutions and service organizations, are engaged in independent practice as psychologists, and are employed as faculty members in colleges and universities. The program is accredited by the American Psychological Association.

The Department of Psychology also participates in the Certificate Program in Gerontology, which is administered by The College of Social Work, and in the Certificate Program in Drug and Addiction Studies, which is administered by the Department of Criminology and Criminal Justice. These certificates are interdisciplinary in nature and are open to qualified graduate students in psychology and other participating departments.

It is important to note that graduate training in psychology includes all of the following: core content courses in the discipline, training and supervision in delivery and application of professional skills, and integration of these components as part of a formal program. Although didactic courses are open, under appropriate conditions, to students not in the psychology degree programs, such students do not have access to professional skills courses and practica or to the integrative program as mentioned. This is to clarify that individual course work is a necessary component of professional training, but such course work is not appropriate for professional applications unless taken by a degree-seeking student in one of the graduate programs in psychology.

## Admissions

Graduate students are permitted to begin programs only in the Fall term. The application deadline is December 1.

To be admitted to full graduate standing, a student should have an undergraduate major in psychology or a closely related discipline with a minimum of 18 semester hours of psychology courses. Admission is competitive and is based upon the content of undergraduate and prior graduate courses taken in degree-seeking programs; performance in those courses (grade point average of better than 3.00 in all courses, and 3.50 or better in psychology course work is desirable); performance on the GRE (successful applicants in the past year have had an average of 1175 quantitative and verbal GRE combined scores); three letters of recommendation; prior research involvement; and (for clinical-community psychology and school psychology programs) prior work and volunteer experiences relevant to the program practice area. The GRE Advanced Psychology test is recommended but not required for applicants to all three programs: the clinical-community program, experimental and school psychology programs. Applicants also are asked for a written statement of career goals and educational expectations. Criteria are somewhat compensatory (that is, high performance on one criterion can compensate for somewhat lower performance on another).

## Programs

- School Psychology, M.A. (restricted to School Psychology, Ph.D. students) (p. 137)
- School Psychology, Ph.D. (p. 139)

## Courses

### PSYC 501 - Human Factors Psychology (3 Credits)

Application of research in experimental psychology to ergonomics, the design of human-environment systems, with emphasis on work settings.  
**Prerequisites:** PSYC 101 and 9 hours of upper-level courses all in psychology, business, engineering, or nursing.

### PSYC 503 - Psychology of Drug Use and Effects (3 Credits)

Research and theoretical considerations of substance abuse. Pharmacological, sociological, psychological, medical, economic, forensic, and other relevant research and treatment disciplines.  
**Prerequisites:** PSYC 450 or PSYC 455 or PSYC 460.

### PSYC 506 - Psychology of Language (3 Credits)

Theories of speech perception, linguistic theories of syntax and semantics, the brain mechanisms underlying language, the development of language in children, and the role of language in thought.  
**Cross-listed course:** LING 567

### PSYC 507 - Cognitive Neuroscience (3 Credits)

Research and theories on the role of the brain in facets of cognitive behavior, including attention, short-term and working memory, perception, language, executive function, thinking, and problem solving.  
**Prerequisites:** C or better in PSYC 405, highly recommended PSYC 455 or PSYC 460.

### PSYC 510 - Child Behavioral and Mental Disorders (3 Credits)

Theories, description, and assessment of child behavior problems and disorders; methods of intervention.  
**Prerequisites:** PSYC 420 or PSYC 410.

**Graduation with Leadership Distinction:** GLD: Community Service

### PSYC 520 - Psychology of Child Development (3 Credits)

Examination of development from conception through older childhood. Specific cognitive and social processes will be given in-depth study.  
**Prerequisites:** PSYC 420.

### PSYC 521 - Psychology of Adolescence (3 Credits)

Theories and research examining social, emotional, and intellectual development in adolescence. Explores influence of family, peer, school, and cultural contexts.  
**Prerequisites:** PSYC 420.

### PSYC 522 - Psychology of Early and Middle Adulthood (3 Credits)

Developmental changes in abilities, personality, and behavior which occur between adolescence and old age.  
**Prerequisites:** PSYC 420.

### PSYC 523 - Psychology of Aging (3 Credits)

Psychological, social, and biological phenomena associated with maturity and aging.  
**Prerequisites:** PSYC 420.

### PSYC 524 - Nature of Students with Mental Retardation (3 Credits)

Nature and causes of mental retardation; behavior and potentialities of persons with mental retardation.  
**Prerequisites:** a course in the areas of child psychology-child development.

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy

**PSYC 525 - The Psychology of the Midlife Woman (3 Credits)**

Biological, social, and psychological aspects of the midlife woman.

**Cross-listed course:** WGST 525

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

**PSYC 526 - Prevention of Psychological Problems in Children and Youth at Risk (3 Credits)**

Etiology, prevention of, and intervention in behavioral, social, emotional, educational, and psychological problems in children and youth at risk.

**Prerequisites:** PSYC 410 or PSYC 420 or equivalent.

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy

**PSYC 528 - Psychology of Children with Exceptionalities (3 Credits)**

Characteristics, causes, needs, and intervention strategies for children with a broad range of exceptionalities including mental, physical, social/emotional difficulties and atypical gifts and talents.

**Prerequisites:** PSYC 420 or PSYC 520.

**PSYC 529 - Nature of Students with Specific Learning Disabilities (3 Credits)**

Children with average/above average intelligence and specific learning impairments; diagnostic and remedial techniques. Offered by both the College of Education and the Department of Psychology.

**Prerequisites:** EDEX 523 or PSYC 528.

**Cross-listed course:** EDEX 531

**PSYC 530 - Advanced Social Psychology (3 Credits)**

Intensive study of topics selected from the field of social psychology.

**Prerequisites:** PSYC 430.

**PSYC 550 - Advanced Sensation and Perception (3 Credits)**

Intensive study of topics selected from the field of sensation and perception.

**Prerequisites:** PSYC 450.

**PSYC 560 - Advanced Topics in Neuroscience (3 Credits)**

Intensive study of topics selected from the field of neuroscience.

**Prerequisites:** PSYC 455 or PSYC 460.

**PSYC 565 - Psychology of Physical Activity (3 Credits)**

Introduction to psychosocial factors in physical activity. Topics include mental health effects of exercise, behavior change theories applied to physical activity, and physical activity determinants and interventions.

**Prerequisites:** PSYC 101, PSYC 228.

**PSYC 570 - Neuroscience Laboratory (3 Credits)**

Practice in surgical, histological, and behavioral testing methodology. Two lectures and one three-hour laboratory per week.

**Prerequisites:** PSYC 460.

**PSYC 571 - Cognitive Neuroscience Laboratory (3 Credits)**

Methods of observation and experimentation in cognitive neuroscience. Two lectures and one three-hour laboratory per week.

**Prerequisites:** PSYC 227 and C or better in two courses from PSYC 405, PSYC 450, PSYC 455, PSYC 460, or PSYC 507.

**Prerequisite or Corequisite:** one course from PSYC 400, PSYC 405, PSYC 450, PSYC 455, or PSYC 460.

**PSYC 572 - Cognitive Psychology Laboratory (3 Credits)**

Practice in the experimental techniques used in the study of cognitive psychology. Two lectures and one three-hour laboratory per week.

**Prerequisite or Corequisite:** PSYC 405.

**PSYC 574 - Sensation and Perception Laboratory (3 Credits)**

Concepts and principles in the study of sensation and perception in the laboratory. Two lectures and one three-hour laboratory per week.

**Prerequisite or Corequisite:** PSYC 450.

**PSYC 575 - Developmental Psychology Laboratory (3 Credits)**

Methods of observation and experimentation on human psychological development. Two lectures and one three-hour laboratory per week.

**Prerequisites:** PSYC 226 and PSYC 227.

**Prerequisite or Corequisite:** PSYC 420 or PSYC 520.

**PSYC 580 - Intermediate Statistics for Psychologists (3 Credits)**

Advanced analysis of the uses and applications of statistics to research in psychology, and interpretation of statistics in the psychological literature.

**Prerequisites:** B or better in PSYC 227.

**PSYC 583 - Psychological Tests and Measurement (3 Credits)**

Introduction to the theory and practice of measuring psychological attributes. Emphasis on test construction in a laboratory setting. Hands-on experience in designing, administering, and analyzing psychological tests and measures.

**Prerequisites:** B or better in PSYC 227 and PSYC 228.

**PSYC 584 - History and Systems of Psychology (3 Credits)**

Systematic approaches to psychology.

**Prerequisites:** 9 hours in psychology at 400 level or above.

**PSYC 585 - Advanced General Psychology (3 Credits)**

Review and integration of general principles of psychology. Primarily for students planning graduate study in psychology.

**Prerequisites:** 12 hours in psychology courses numbered above 300.

**PSYC 589 - Selected Topics in Psychology (3 Credits)**

Course content varies and will be announced in the schedule of classes by title.

**PSYC 598 - Individual Research (3 Credits)**

Planning and execution of supervised research in psychology. Approved contract required.

**Prerequisites:** 15 hours of psychology.

**PSYC 599 - Individual Research (3 Credits)**

Planning and execution of supervised research in psychology. Approved contract required.

**Prerequisites:** 15 hours of psychology.

**PSYC 700 - Psychosocial Approaches to Gerontology (3 Credits)**

Introduction to gerontology from the fields of demography, psychology, sociology, social welfare, and economics.

**Cross-listed course:** SOWK 771

**PSYC 701 - Behavioral Assessment and Intervention with Children and Youth (3 Credits)**

A combination of lecture and practicum experiences emphasizing the application of behavioral assessment and intervention techniques in educational, institutional, and home settings. Students receive individual and group supervision throughout the semester.

**Prerequisites:** PSYC 711.

**PSYC 702A - Basics of Neuroscience (3 Credits)**

Functional organization of the nervous system; research and theories of the neurological bases of behavior.

**PSYC 702B - Basics of Cognitive Psychology (3 Credits)**

Research and theories on attention, memory, language, thinking, and other cognitive processes.

**PSYC 702C - Basics of Developmental Psychology (3 Credits)**

Research and theories of psychological development across the lifespan.

**PSYC 702D - Basics of Learning and Motivation (3 Credits)**

Research and theories of instrumental conditioning, classical conditioning, learning, and motivation.

**PSYC 702E - Experimental Design (3 Credits)**

This course covers basic principles of sound experimental design, including such topics as internal and external validity, subject selection factors, and techniques for reducing sampling error and minimizing bias. In addition, the course will discuss practical limitations to ideal experimental design and have students identify the design conventions specific to their field of study.

**PSYC 703A - Integration across Cognitive Psychology and Neuroscience (3 Credits)**

Research and theories of cognitive neuroscience.

**PSYC 703C - Integration across Developmental and Cognitive Psychology (3 Credits)**

Research and theories of cognitive development.

**PSYC 703D - Integration across Areas of Psychology (3 Credits)**

Presentation of research and theories that cross different areas within psychology.

**PSYC 704 - Group Dynamics (3 Credits)**

Offered for an interdisciplinary student clientele interested in group processes and structures. Training is provided in observational methods and techniques of group assessment. Laboratory and field study required.

**PSYC 705 - Psychological Systems and Theories (3 Credits)**

Contemporary trends in systematic approaches and behavior theories.

**PSYC 706 - Seminar in Judgment and Decision Making (3 Credits)**

Research and theories of processes in judgment, choice, and decision making.

**PSYC 709 - Basic Quantitative Methods in the Analysis of Behavioral Data I (3 Credits)**

Quantitative methods for graduate students in psychology and other behavioral sciences. Emphasizes logical/intuitive understanding of the basic techniques, focuses heavily on the application of these methods to psychological research. Three lecture/discussion hours and a one-hour scheduled lab per week.

**Prerequisites:** introductory course in statistics, psychology or mathematics.

**PSYC 710 - Basic Quantitative Methods in the Analysis of Behavioral Data II (3 Credits)**

A continuation of PSYC 709. Three lecture/discussion hours and a one-hour scheduled lab per week.

**Prerequisites:** PSYC 709.

**PSYC 713 - Survey of Psychoeducational Tests and Assessment (3 Credits)**

Consideration of basic issues in evaluation of children, such as reliability, validity, item selection, standardization groups, criterion-referenced vs. norm-based testing, ethics, etc. Includes presentations via various instructional modes of a wide range of psychoeducational assessment procedures with a wide variety of children.

**PSYC 714 - Psychoeducational Assessment of Children I (1-3 Credits)**

A combination of lectures and practicum concerned with interviewing, behavioral observation and analysis, and cognitive-intellectual assessment. Requires involvement in school psychology training-service centers in the schools.

**Prerequisites:** acceptance in graduate psychology department program.

**PSYC 715 - Psychoeducational Assessment of Children II (1-3 Credits)**

A combination of lectures and practicum concerned with assessment of perceptual-motor processes, academic achievement, and personality and interpersonal skills. Requires involvement in school psychology training-service centers in the schools.

**Prerequisites:** PSYC 714 and acceptance in graduate psychology department program.

**PSYC 716 - Assessment of Emotional-Behavioral Functioning (1-3 Credits)**

Consideration, via lecture and/or practicum, of special areas of psychoeducational assessment. Topics will include infant assessment, criterion-referenced assessment, and assessment of neurological problems.

**Prerequisites:** PSYC 714, Acceptance in Department of Psychology graduate program.

**PSYC 717 - Survey of Personality Theories (3 Credits)**

Issues, theories, and research on personality.

**Prerequisites:** 18 hours in psychology.

**PSYC 720 - Psychological Interventions with Children and Families (3 Credits)**

Integration of theory, research, and practice in child clinical and family psychology. Focus on systemic, behavioral, and other orientations in the treatment of children and families.

**PSYC 721 - Developmental Psychopathology and Resilience (3 Credits)**

Theoretical, empirical, and methodological issues in the development of psychopathology or resilience in children, adolescents, and families. Emphasis on research topics related to nature, course, and etiology.

**Prerequisites:** acceptance in graduate psychology department or consent of instructor

**PSYC 725 - Systems and Theories of Psychological Intervention (3 Credits)**

Seminar emphasizing a critical analysis of psychotherapy systems and theories.

**PSYC 726 - Psychological Problems and Resilience (3 Credits)**

A survey of clinical disorders, their origins and characteristics. Includes a review of contemporary diagnostic systems, research, and theory.

**Prerequisites:** PSYC 410.

**PSYC 727 - Foundations of Community Psychology (3 Credits)**

Survey of theoretical foundations, research and practice in community psychology. Topics include prevention, social systems intervention, community participation, innovation in community service delivery systems, and community change processes.

**PSYC 728 - Laboratory in Community Study (1 Credit)**

Designated to accompany Psychology 727. Laboratory will target specific problems, resources, or populations and will provide students with elementary exposure to a community system.

**Prerequisite or Corequisite:** PSYC 727.

**PSYC 732 - Clinical Neuropsychology (3 Credits)**

Overview of relationships between brain structures and function and the assessment of cognitive and emotional behavior in adults and children.

**Prerequisite or Corequisite:** PSYC 702A or comparable course in biopsychology.

**PSYC 733 - Neuropsychological Syndromes in Childhood (3 Credits)**

Applications of neuropsychological theory and research to the study of the learning process, with emphasis upon assessment and intervention with learning disabilities.

**PSYC 734 - Neuropsychological Screening and Assessment (3 Credits)**

Assessment procedures for screening neuropsychological factors in individuals with neurobehavioral deficits.

**PSYC 735 - Survey of Psychopharmacology (3 Credits)**

The effect of drugs upon internal psycho-physiological functioning and upon the behavior of human and animal subjects. Particular emphasis will be given to the psychoactive drugs.

**Prerequisites:** 18 hours in psychology

**PSYC 742 - Consultation and Systems Interventions (3 Credits)**

Focus on understanding the theoretical bases of consultation and developing the skills necessary for the practice of mental health consultation.

**PSYC 743 - Theory and Practice of Mental Health Consultation II (3 Credits)**

Continues the practicum begun in Psychology 742 and develops the skills of administrative mental health consultation and evaluation of consultation programs.

**PSYC 745 - Organizational Behavior (3 Credits)**

Analysis of the organization as a complex interaction system.

**PSYC 749 - Principles of Human Diversity (3 Credits)**

Fundamental, conceptual and empirical knowledge regarding dimensions of diversity, social inequality and the application of this knowledge to psychological research, teaching and practice. Restricted to psychology students. Non-Psychology students need instructor permission to register.

**PSYC 750 - Psychology of Women (3 Credits)**

Women's diversity explored through research on personality, stereotypes, status and power, biological aspects, socialization, sexuality, relationships, mothering, work and achievement, violence against women, psychological disorders, and feminist therapies.

**Cross-listed course:** WGST 750

**PSYC 751 - Race, Class, Gender, and Sexuality (3 Credits)**

Historical and contemporary dimensions of social inequality centered in race, social class, gender, and sexuality.

**PSYC 760 - Issues and Ethics in Clinical-Community Psychology (3 Credits)**

The presentation of ethics in research and practice in clinical-community psychology and the discussion of current professional issues. Covering history and systems in psychology and providing in depth training on the ethical conduct of research.

**PSYC 761 - Psychological Assessment I (3 Credits)**

Develop assessment skills through interviewing, observation, performance testing, and report writing. Experience includes assessment of individuals, couples, and/or families from a variety of perspectives. Didactic/practicum.

**PSYC 762 - Psychological Assessment II (4 Credits)**

Theory of measurement and the construction of measures specific to clinical and community psychology. Intellectual achievement, objective personality, and projective measures. Didactic/practicum.

**PSYC 763 - Clinical Psychology Assessment III (1-4 Credits)**

Conceptualization of cases involving psychological measures. Clients include individuals, couples, and families. Didactic/practicum. May be repeated for up to 4 credits.

**Prerequisites:** PSYC 761.

**PSYC 765 - Externship in School Psychology (3 Credits)**

A closely supervised 20-hour-per-week externship in the techniques of psychological services in school systems. Staff.

**PSYC 770 - Survey of Social Psychology (3 Credits)**

Issues, research, and theories in social psychology.

**Prerequisites:** 18 hours in psychology.

**PSYC 772 - Research Approaches to Human Behavior (3 Credits)**

Nonquantitative aspects of research methodology and experimental design in laboratory and field settings. A critical investigation of artifacts and ethical issues in behavioral research.

**Prerequisites:** PSYC 709.

**PSYC 773 - Research in Clinical-Community Psychology (1-3 Credits)**

Supervised training in the conduct of empirical research in clinical-community psychology. May be repeated once for credit.

**PSYC 777 - Environmental Psychology (3 Credits)**

The study of human behavior and satisfaction in relation to the natural and person-made environment. Topics include environmental stress, risk, social ecology of families, behavior setting theory, and person-environmental relationships.

**Prerequisites:** PSYC 727.

**PSYC 780 - Behavior Therapy (3 Credits)**

A survey of principles, theory, methods, issues, and research in behavior therapy. Behavioral interventions with adults, children and families, organizations, and community settings.

**PSYC 781 - Behavior Therapy Practicum: Adults (1-3 Credits)**

Intensive practicum experience in the use of behavioral and cognitive-behavioral therapy with adult inpatients (psychiatric, geriatric, alcoholic, imprisoned), outpatients, and marital therapy clients.

**PSYC 782 - Child, Adolescent and Family Therapy Practicum (3 Credits)**

Individually supervised practicum in therapy with children, adolescents, and families. Includes exposure to multiple approaches including behavioral and family systems modes of intervention.

**Prerequisites:** PSYC 720.

**PSYC 783 - Health Psychology/Behavioral Medicine (3 Credits)**

Scientific study of the application of psychological principles to prevention of illness, maintenance of health, and the treatment of related medical dysfunctions. Primary emphasis on the use of behavior therapy and behavior modification techniques.

**Prerequisites:** PSYC 711 or PSYC 730.

**PSYC 784 - Clinical Health Psychology Practicum (1-3 Credits)**

Applying clinical health psychology to health-related agencies in the community.

**Prerequisites:** PSYC 762, PSYC 783.

**PSYC 785 - Seminar in Psychotherapy Research (3 Credits)**

Psychotherapy research and selected topics in other clinical research, such as alcoholism and hypnosis.

**PSYC 790 - College Teaching of Psychology I (1-3 Credits)**

Didactic, seminar, and experiential coverage of the teaching of psychology at the college level.

**Prerequisites:** 18 hours in psychology.

**PSYC 791 - College Teaching of Psychology II (1 Credit)**

Didactic, seminar, and experiential coverage of the teaching of psychology at the college level.

**Prerequisites:** 18 hours in psychology or permission of instructor

**PSYC 792A - Responsible Conduct of Research in Psychology and Neuroscience (1 Credit)**

Ethical issues and dilemmas in research. Compliance with national standards.

**PSYC 792B - Issues and Ethics in Research in Psychology and the Teaching of Psychology II (1 Credit)**

Presentation of ethics and issues pertaining to the teaching of psychology and psychological research.

**PSYC 799 - Thesis Preparation (1-9 Credits)**

To be arranged by candidates for the MA degree with the thesis advisor.

**PSYC 801 - Cognitive Neuroscience I (3 Credits)**

Techniques and methodologies of cognitive neuroscience, emphasizing classic research and theoretical perspectives as well as cutting-edge findings. Areas of focus include sensation and perception, attention, motor control, short-term/working memory, and reward/decision-making.

**Prerequisites:** or Corequisite: Completion of 6 credits from PSYC 702A-D.

**PSYC 802 - Cognitive Neuroscience II (3 Credits)**

Detailed exploration of the techniques and methodologies of cognitive neuroscience and the brain mechanisms sub-serving long-term memory, autobiographical memory, language, emotion, social cognition, and cognitive development.

**Prerequisite or Corequisite:** PSYC 801.

**PSYC 816 - Advanced Research in Clinical-Community Psychology (1-3 Credits)**

Supervised training in the conduct of empirical research in clinical-community psychology.

**PSYC 818 - Research in the Schools (3 Credits)**

Supervised psychological research on school-related problems; participation in ongoing program of research. Required of all doctoral candidates in psychology.

**PSYC 819 - Seminar in Biological Psychology (3 Credits)**

Theoretical and empirical issues in an area of current interest in biological psychology. May be repeated with different topics.

**Prerequisites:** PSYC 730.

**PSYC 820 - Seminar in Developmental Psychology (3 Credits)**

Theoretical and empirical issues in an area of current interest in developmental psychology. May be repeated with different topics.

**Prerequisites:** PSYC 751.

**PSYC 821 - Theory of Psychological Measurement (3 Credits)**

A survey of psychological scaling and factor theory, together with special techniques for achieving reliability and validity, including item analysis.

**Prerequisites:** PSYC 225 or the equivalent.

**PSYC 822 - Seminar in Cognitive Psychology (3 Credits)**

Theoretical and empirical issues in an area of current interest in cognitive psychology. May be repeated with different topics.

**Prerequisites:** PSYC 712.

**PSYC 823 - Multivariate Analysis of Behavioral Data (3 Credits)**

Advanced topics in multiple-variable research. Topics include multiple linear regression, polynomial regression, canonical correlation, discriminant function, and the analysis of variance using orthogonal polynomials and multidimensional scaling, both metric and nonmetric approaches.

**Prerequisites:** PSYC 710.

**PSYC 824 - Special Topics in Quantitative Psychology (3 Credits)**

Theoretical and empirical issues in an area of current interest in quantitative methods and quantitative psychology. May be repeated as content varies by title.

**Prerequisite or Corequisite:** PSYC 710.

**PSYC 825 - Introduction to Statistical Mediation Analysis (3 Credits)**

Mediation analysis and statistical methods for assessing mediating variables.

**Prerequisites:** PSYC 709 and PSYC 710 or STAT 700 and STAT 701.

**PSYC 826 - Family Psychotherapy (3 Credits)**

Advanced topics in family psychotherapy.

**Prerequisites:** PSYC 720, acceptance in clinical-community or school psychology graduate program, and consent of instructor

**PSYC 827 - Applied Individual and Couples Psychotherapy (3 Credits)**

Individually supervised practice in individual and couples psychotherapy.

**Prerequisites:** PSYC 725.

**PSYC 828 - Applied Group Psychotherapy (1-3 Credits)**

Advanced theory and research methods with supervised practice in the modification of personality and behavior through group interaction.

**PSYC 829 - Community Psychology Practicum I (1-3 Credits)**

Individually supervised field assignments in the community.

**PSYC 830 - Advanced Child, Adolescent and Family Therapy Practicum (1-3 Credits)**

Individually supervised advanced practicum in child, adolescent and family therapeutic intervention.

**Prerequisites:** PSYC 782.

**PSYC 831 - Practicum in Psychological Assessment (1-3 Credits)**

Training for advanced students in testing, assessment, and psychodiagnostics under the supervision of psychology staff.

**PSYC 832A - Practicum in School Psychology (3 Credits)**

Qualified advanced students will perform psychological evaluations and render other services in a public school setting under the supervision of the school psychology faculty. Cases dealt with include children with general or special learning difficulties.

**PSYC 832B - Practicum in School Psychology (1-3 Credits)**

Qualified advanced students will perform psychological evaluations and render other services in a public school setting under the supervision of the school psychology faculty. Cases dealt with include children with general or special learning difficulties.



**PSYC 832C - Practicum in School Psychology (1-3 Credits)**

Qualified advanced students will perform psychological evaluations and render other services in a public school setting under the supervision of the school psychology faculty. Cases dealt with include children with general or special learning difficulties.

**PSYC 833 - Practicum in Mental Retardation (1-3 Credits)**

Qualified advanced students will perform psychological evaluations and other clinical services under the supervision of mental retardation faculty in designated settings such as the USC Psychological Service Center, Midlands Training School, and other agencies providing services for persons with mental retardation. The assignment of cases will be based on a previous diagnosis of mental retardation or the probable involvement of mental retardation in client to be studied.

**Prerequisites:** PSYC 519.

**PSYC 834 - Experimental Psychopathology (3 Credits)**

A survey of experimental findings on psychological behavior in animals and humans and their theoretical implications. An introduction to applicable research procedures.

**PSYC 835 - Advanced Psychotherapy Practicum (1-3 Credits)**

Supervised psychotherapy with children, adolescents, or adults, together with additional training in marriage counseling, behavior therapy, and family therapy.

**Prerequisites:** PSYC 827 or PSYC 830.

**PSYC 835A - Advanced Psychotherapy Practicum (1-3 Credits)**

Supervised psychotherapy with children, adolescents, or adults, together with additional training in marriage counseling, behavior therapy, and family therapy.

**Prerequisites:** PSYC 827 or PSYC 830.

**PSYC 835B - Advanced Psychotherapy Practicum (1-3 Credits)**

Supervised psychotherapy with children, adolescents, or adults, together with additional training in marriage counseling, behavior therapy, and family therapy.

**Prerequisites:** PSYC 827 or PSYC 830.

**PSYC 835C - Advanced Psychotherapy Practicum (1-3 Credits)**

Supervised psychotherapy with children, adolescents, or adults, together with additional training in marriage counseling, behavior therapy, and family therapy.

**Prerequisites:** PSYC 827 or PSYC 830.

**PSYC 836 - Seminar in Psychopharmacology (3 Credits)**

Theoretical and empirical issues in an area of current interest in psychopharmacology. May be repeated with different topics.

**Prerequisites:** PSYC 735

**PSYC 837 - Autism Theory and Diagnostics (1-3 Credits)**

Theory, methods and comprehensive assessment of autism spectrum disorders in children and adolescents using a developmental approach. Emphasizes the development of critical thinking in relation to the selection, administration, interpretation, and application of gold-standard diagnostic measures of autism.

**Prerequisites:** PSYC 714 and PSYC 716 or equivalent.

**PSYC 838 - Seminar in Learning and Conditioning (3 Credits)**

Theoretical and empirical issues in an area of current interest in learning and conditioning. May be repeated with different topics.

**Prerequisites:** PSYC 711.

**PSYC 839 - Community Psychology Practicum II (3 Credits)**

Supervised practicum experience in community need assessment and the development of grant applications. Placement in state agencies and community programs.

**Prerequisites:** PSYC 727 and PSYC 829.

**PSYC 840 - Seminar in Professional School Psychology (3 Credits)**

A survey of the role of the psychologist functioning in a school setting, the associated problems and methods, including relationships with children and parents with teachers, administrators, and other school personnel.

**PSYC 841 - Advanced Study in Selected Topics (1-6 Credits)**

Special assignments to meet the needs of individual students.

Conferences with instructor and staff. May be repeated with different topics.

**PSYC 843 - Seminar in Social Psychology (3 Credits)**

Theoretical and empirical issues in an area of current interest in social psychology. May be repeated with different topics.

**Prerequisites:** PSYC 770.

**PSYC 845 - Topics in Community Psychology (3 Credits)**

Theoretical and empirical issues in an area of current interest in community psychology. May be repeated with different topics.

**Prerequisites:** PSYC 727.

**PSYC 850 - Academic Interventions (3 Credits)**

Overview of consultation and systems-level interventions in psychological services.

**PSYC 860 - Advanced Study of Selected Problems in Clinical Psychology (3 Credits)****PSYC 865 - Internship in School Psychology (1 Credit)**

Two semesters required for Ph.D. Student is registered upon recommendation of the student's advisory committee. Will be graded as satisfactory (S) or unsatisfactory (U).

**PSYC 888 - Selected Topics in Psychology (1-6 Credits)**

Intensive study in an advanced area in psychology. May be repeated for credit.

**PSYC 889 - Independent Advanced Research (1-9 Credits)**

Doctoral-level research additional to that involved in the doctoral dissertation.

**PSYC 899 - Doctoral Research and Dissertation Preparation (1-12 Credits)**

## School Psychology, M.A. (restricted to School Psychology, Ph.D. students)

The MA in School Psychology is an option available for students enrolled in the School Psychology, Ph.D. (p. 139) who choose to take the additional steps to obtain the master's degree concurrent with the doctoral program in School Psychology. Students seeking a terminal master's degree are not admitted to the program; instead, students admitted to the doctoral program are automatically admitted to the master's program, if they desire that degree.

The purpose of the School Psychology MA degree is to provide training for students enrolled in the PhD program in School Psychology to develop introductory skills and knowledge in historical and current foundations of school psychology practice and in evidence-based assessment and

interventions related to students' learning and behavior in school and school-related settings.

## Learning Outcomes

- Students will successfully administer, score, and write a report describing performance on an individual intelligence test.
- Students will successfully administer, score, and write a report describing performance on tests of academic achievement and social-emotional development.
- Students will successfully develop an individual behavior plan for a student in a school setting.
- Students will successfully demonstrate an understanding of the history and current practices in the field of school psychology.
- Students will successfully demonstrate an understanding of basic statistical techniques, including analysis of variance and correlation/regression approaches.

## Admissions

Students who enter the program with only a bachelor's degree must complete all program and Graduate School requirements for the completion of the Master of Arts degree. Information on The Graduate School requirements may be found at <http://www.gradschool.sc.edu/>, where the Graduate Studies Bulletin can be found online. Students are encouraged to consult the bulletin for their year of entry and to maintain up-to-date information about all university and program requirements.

## Degree Requirements

Requirements for the Master's degree include the following:

- 33 hours of course work, as specified below;
- 6 hours of thesis credit; Program of Study;
- Successful completion of the master's thesis;
- And an oral comprehensive examination

Students are expected to complete all requirements for the master's degree by the end of the fifth semester and to complete and submit all relevant paperwork to The Graduate School in a timely manner, as specified in time lines published by The Graduate School.

## Course Requirements

### School Psychology Core Courses (21 Hours)

Required for the Master's degree are as follows:

Course	Title	Credits
PSYC 714	Psychoeducational Assessment of Children I	1-3
PSYC 715	Psychoeducational Assessment of Children II	1-3
PSYC 716	Assessment of Emotional-Behavioral Functioning	1-3
PSYC 701	Behavioral Assessment and Intervention with Children and Youth	3
PSYC 832A	Practicum in School Psychology	3
PSYC 832B	Practicum in School Psychology	1-3
<b>Total Credit Hours</b>		<b>10-18</b>

### General Psychology Courses (12 Hours)

Course	Title	Credits
PSYC 709	Basic Quantitative Methods in the Analysis of Behavioral Data I	3

PSYC 710	Basic Quantitative Methods in the Analysis of Behavioral Data II	3
Select six hours of the following:		6
PSYC 702A	Basics of Neuroscience	
PSYC 702B	Basics of Cognitive Psychology	
PSYC 702C	Basics of Developmental Psychology	
PSYC 702D	Basics of Learning and Motivation	
PSYC 726	Psychological Problems and Resilience	
PSYC 770	Survey of Social Psychology	
Or equivalent courses		

**Total Credit Hours** **12**

## The Master's Thesis (6 Hours)

USC requires a thesis of all graduate students seeking the Master of Arts degree. As indicated in the Graduate Studies Bulletin, students should obtain a copy of the general thesis regulations from The Graduate School. The thesis should be written to meet all graduate school requirements. Later in this Handbook is a detailed description of the steps and requirements for the doctoral dissertation (see "Psychology Department Guidelines for the Dissertation"). Information in that section will be very helpful in preparing your thesis and should be consulted for further suggestions and details for developing your research ideas, choosing a thesis advisor, proposing your thesis, carrying out the project, and completing the written thesis. Information specific to the thesis is also described below.

### General Purpose

Completion of the master's thesis is designed to assist students in becoming competent behavioral scientists. There are three specific objectives for this project:

1. provide an early introduction to research methodology and research applications;
2. provide support and knowledge that will help in the preparation and completion of a doctoral dissertation; and
3. demonstrate the role of school psychologists in the discovery of new knowledge.

### Description of the Project

This research requirement will involve a completed data-based project conducted in conjunction with a research committee, and written following the guidelines of the Publication Manual of the American Psychological Association. The thesis must also meet all Graduate School requirements.

### Scope of the Project

A variety of research approaches are acceptable for this project, including but not limited to:

- applied and basic experimental designs
- quasi-experimental designs
- survey data and methods
- archival data analysis
- meta-analysis of an area of research
- program evaluation
- qualitative analysis
- single-subject and small-sample designs

## Implementation

New students will be oriented to thesis and dissertation research requirements in PSYC 832A. Students are encouraged to select their thesis and dissertation chairs and committees based on their individual research interests and career plans.

Regardless of the goal or the content of the thesis, the nature and scope of the project should be such that the student completes the project before the beginning of the third year. The student should develop a concise project prospectus (including a brief overview and description of the methodology; see below) no later than the beginning of the third semester so that the thesis committee can evaluate in a timely fashion whether the proposed project is in the student's best interest.

The student should recognize that progression from lower to higher level courses, practica, assistantships, and other requirements is contingent upon satisfactory progress in research activities, including the thesis.

## Composition of the Thesis Committee

The thesis committee must have two faculty members. At least one member must be from the core School Psychology area faculty. The second member of the committee can be either another School Psychology faculty member, another Psychology faculty member, a faculty member from another USC department, or a qualified person from a local school or agency, provided that he or she has been approved by the Graduate School in advance. Generally, students choose a thesis chairperson with whom they wish to conduct their research; together, the student and chairperson then select the second committee member.

## The Thesis Prospectus

All students must submit a written proposal, describing the research they plan to conduct (see Dissertation Guidelines for further description of the components). The proposal must be approved by the student's committee before the student may proceed with the study. In addition, approval to conduct research with either human participants or animal subjects must also be secured from the University Institutional Review Board (IRB) before the student may begin the study approved by the committee. Your committee will decide if a formal prospectus meeting should be held.

## Evaluation of the Thesis

A thesis passes when both research committee members rate the project as acceptable. The global rating of each committee member is based on the following criteria:

- Clarity of the problem
- Rigor of the methodology/procedures
- Adequacy of the data
- Appropriateness of the data analysis
- Appropriateness of the data interpretation
- Clear relationship drawn to prior research
- Explicit discussion of implications and limitations
- Precision of writing
- Correct APA presentation style
- Correct use of tables, graphs, figures, & appendices

## Oral Comprehensive Examination

After completing all requirements for the master's thesis and all course work for the master's degree, the student will complete an oral comprehensive examination. The committee for the oral examination consists of three faculty members, usually chaired by either the student's

academic advisor or thesis advisor. A minimum of two members must be from the core School Psychology faculty. The third member may be a School Psychology faculty member, another Psychology faculty member, or under special circumstances, an approved USC faculty member from outside the Department.

The content of the oral examination is at the discretion of the committee but focuses on prior course work and applied school psychology at the master's level.

# School Psychology, Ph.D.

## Learning Outcomes

- Students will apply their appreciation of cultural, racial, and gender differences, similarities, and contributions to professional practice and research issues.
- Students will interpret information from a variety of sources (test and non-test data) to make appropriate diagnostic and intervention decisions with individuals of different ages, cultural backgrounds, and exceptionalities.
- Students will communicate effectively, both orally and in writing, with a variety of different constituents.
- Students will demonstrate systematic problem-solving and problem-finding skills.
- Students will evaluate and critique the existing applicable research literature in school psychology.
- Students will demonstrate an understanding of the roles and functions of school psychologists, understand the legal and ethical standards that relate to professional psychology and school practice, and understand the various employment contexts for school psychologists.
- Students will develop and evaluate appropriate intervention plans for individuals with learning and/or behavioral difficulties.
- Students will collaborate with others, including teachers, parents, and relevant others, and serve as effective members of multi-disciplinary teams.

## Degree Requirements (92 Post-Baccalaureate Hours)

A minimum of 78 credit hours of course and practica work, two hours for internship, and dissertation work (PSYC 899) are required.

Course work includes 30 hours of core school psychology courses, 31 hours of general psychology courses, 6 hours of education electives, and 12 hours of specialty practica.

The Ph.D. degree in school psychology also requires successful completion of a qualifying examination, a written specialty examination, and a general oral comprehensive examination. Also required is an approved Ph.D. dissertation and a one-year, predoctoral, full-time internship. Many students obtain an APA-approved (or approval-seeking) internship. Students have the option of declaring a concentration in Quantitative Methods in Psychology. Concentration requirements are: a. Must be accepted to a University of South Carolina Psychology Department Doctoral Program (Clinical-Community, School, or Experimental) b. Make a B or better in four courses (12 hours) that have 710 as a pre-requisite (i.e., advanced quantitative courses.) 709/710 do not count, nor do assessment or methods classes. Courses must be at the 700 level or higher. c. Two of the four courses (6 hours) are required to be taught in the department d. The third and fourth courses

can optionally be taught in another department contingent upon approval from the Concentration Program Director.

The sequence of events and more details concerning specific aspects are in the current *Graduate Program in School Psychology Student Handbook*, provided to all incoming students.

## Religious Studies

Department Website (<http://www.cas.sc.edu/relg/>)

James S. Cutsinger, *Chair*

### Courses

#### RELG 514 - The Quest of the Historical Jesus (3 Credits)

Examination of studies on the historical Jesus from 1778 to the present. Attention given to the relationship between "the Jesus of history" and "the Christ of faith".

#### RELG 551 - Tradition and Transformations in Islamic Cultures (3 Credits)

Islam as a dynamic cultural tradition: emphasis on the tension between Islamization and the larger Islamic tradition.

**Cross-listed course:** ANTH 515

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy, GLD: Global Learning

#### RELG 552 - Buddhist Studies Seminar (3 Credits)

The examination of a theme or problem central to the study of Buddhism in a seminar emphasizing intensive reading and creative discussion.

Course may be repeated since topics change.

#### RELG 700 - Problems in the Comparative Study of Religion (3 Credits)

Introduction to formative thinkers in the discipline of religious studies, with attention to the methodological problems of comparison.

#### RELG 701 - Foundational Readings (3 Credits)

Foundational texts appropriate to the student's area of specialization and required for advanced course work and thesis preparation.

#### RELG 710 - The Christology of the New Testament (3 Credits)

Examination of the four major New Testament titles: Son of Man, Christ, Lord, and Son of God. Attention also given to some lesser-known titles and to Christology in context.

#### RELG 724 - Religion and Politics (3 Credits)

Religion as a factor in the comparative politics and international relations of states and societies.

**Cross-listed course:** POLI 724

#### RELG 740 - Israelite Religion (3 Credits)

Beliefs and practices in ancient Israelite religion, with particular attention to the emergence of monotheism. Comparison with other ancient Near Eastern religions.

#### RELG 760 - Religion and Literature (3 Credits)

Introduction to historical and contemporary approaches to the cross-disciplinary study of the inter-relations of the religious and the literary imaginations.

#### RELG 770 - Black Christianity in America (3 Credits)

Elements in the religion of the black slave in early America, the development of black churches and theological movements.

#### RELG 771 - Black and Liberation Theology (3 Credits)

Tenets, themes, and representative figures in black and liberation theology in the United States and in Central and South America.

#### RELG 772 - Nineteenth-Century American Evangelical Thought (3 Credits)

The diverse heritage of American evangelism, with special emphasis on its socio-political and theological origins in the late 18th and 19th centuries.

#### RELG 773 - Twentieth-Century Christology (3 Credits)

Various 20th-century christological perspectives, with special emphasis on the person and work of Jesus as bases for addressing life/death and hope/despair issues.

#### RELG 780 - World Spirituality (3 Credits)

An examination of the perennialist approach to the mystical and contemplative teachings of the major religious traditions.

#### RELG 789 - Seminar in Philosophical Theology (3 Credits)

Examination of contemporary problems in the philosophical foundations of religion.

#### RELG 792 - Special Topics in Texts and Traditions (3 Credits)

Topics related to the study of texts in the life of specific religious communities. Course content varies; individual topics will be announced.

#### RELG 793 - Special Topics in Theology and Religious Thought (3 Credits)

Topics related to the study of religious doctrines, cosmologies, spiritual practices, and ethics. Course content varies; individual topics will be announced.

#### RELG 794 - Special Topics in Religion and Society (3 Credits)

Topics examining religious institutions, practices, and experiences in relation to other cultural forms. Course content varies; individual topics will be announced.

#### RELG 797 - Independent Study (3 Credits)

CL: 2020.

#### RELG 799 - Thesis Preparation (1-9 Credits)

CL: 2020.

## School of the Earth, Ocean and Environment

Department Website ([https://www.sc.edu/study/colleges\\_schools/artsandsciences/earth\\_ocean\\_and\\_environment/study/graduate/](https://www.sc.edu/study/colleges_schools/artsandsciences/earth_ocean_and_environment/study/graduate/))

Alicia Wilson, Director

The School of the Earth, Ocean & Environment offers the Ph.D. and the M.S. in Geological Sciences or Marine Science; the Master of Earth and Environmental Resources Management (MEERM) degree; and dual MEERM and Juris Doctor degrees in collaboration with the USC School of Law. The latter is a streamlined program for students seeking both the master's and law degree.

### Admission

Admission to the program of graduate study in geological sciences is obtained by application to The Graduate School. Requirements are satisfactory scores on the GRE (normally a minimum total verbal and quantitative GRE score of 1000), with a minimum quantitative score of 550. GRE scores expire after 5 years. However, for admission to the PhD program, students will not be required to retake the GRE if: 1) they have taken the exam and received a minimum total verbal and quantitative score of 1000, with a minimum quantitative score of 550, and 2) they have a Master of Science Degree from an accredited U.S. institution with an undergraduate GPA of 3.00 or higher, and 3) recommendations

from qualified referees. Applicants whose native language is not English are also required to submit a satisfactory score on the TOEFL or the IELTS Intl. Academic Course Type 2 exam. The minimum acceptable score on the TOEFL is 80 (internet-based). The minimum acceptable overall band score on the IELTS Intl. Academic Course Type 2 exam is 6.5. The Department of Geological Sciences does not have a specific set of required undergraduate courses but bases its admission mainly on demonstrated ability to do academic work and interest in the field of earth and ocean sciences. Questions concerning admission should be submitted to the director of graduate studies for the School of the Earth, Ocean and Environment (GradDir@seoe.sc.edu).

## Programs

- Earth and Environmental Resources Management, M.E.E.R.M. (p. 149)
- Geological Sciences, M.S. (p. 150)
- Geological Sciences, Ph.D. (p. 151)
- Marine Science, M.S. (p. 151)
- Marine Science, Ph.D. (p. 152)

## Courses

### ENVR 500 - Environmental Practicum (3 Credits)

Multidisciplinary research projects related to University or community environmental problems (e.g., energy, water conservation, solid waste, recycling).

### ENVR 501 - Special Topics in the Environment (3 Credits)

An in-depth analysis course of a specific interdisciplinary environmental topic. Course content varies and will be announced in the schedule of classes by title.

**Prerequisites:** ENVR 101 or ENVR 201.

### ENVR 531 - Sustainability Management and Leadership Strategies (3-4 Credits)

Integrated management system principles and advanced leadership strategies to create sustainable development initiatives.

### ENVR 533 - Sustainability Projects Course (3 Credits)

Research, development and implementation of sustainability projects throughout the campus and community.

### ENVR 538 - Global Food Politics (3 Credits)

Political, social, and cultural landscapes of food and farming around the world; issues of agricultural production, trade, consumption, and food security.

**Cross-listed course:** GEOG 538

### ENVR 540 - Decolonizing the Environment: Race, Nature, Power (3 Credits)

Critical examination of the ways ideas about nature and racial difference are conceptually and materially entwined with the production of social and environmental inequalities.

### ENVR 548 - Environmental Economics (3 Credits)

An analysis of the economics aspects of environmental decay, pollution control, and natural resource use. Analysis of the ability of the market system to allocate resources efficiently when economic activity is accompanied by environmental damage. Discussion of alternative public policy approaches to pollution control and natural resource conservation.

**Prerequisites:** ECON 221 and ECON 222, or ECON 224.

**Cross-listed course:** ECON 548

### ENVR 571 - Conservation Biology (3 Credits)

Principles of conservation biology. Importance of biodiversity, causes of decline and extinction, and restoration and conservation policy in terrestrial and aquatic ecosystems.

**Prerequisites:** BIOL 301.

**Cross-listed course:** BIOL 571

### ENVR 572 - Freshwater Ecology (3 Credits)

Quantitative study of the population, community and evolutionary ecology of freshwater habitats (lakes, ponds, rivers, streams, wetlands). Includes mandatory fieldtrips.

**Prerequisites:** BIOL 301.

**Cross-listed course:** BIOL 572

### ENVR 590 - Environmental Issues Seminar (3 Credits)

Collaborative study of a contemporary environmental issue. Field trips may be required. Restricted to Environmental Science and Environmental Studies majors.

**Prerequisites:** BIOL 301.

### ENVR 700 - Current Topics in Environmental Studies (3 Credits)

Current issues, policies, and regulations pertaining to environmental studies. Emphasizes integrated multidisciplinary approaches toward identification, evaluation, preservation, mitigation, and/or utilization of environmentally sensitive material and sites.

### ENVR 725 - International Environmental Management Systems (3 Credits)

International environmental management systems standards will be integrated with business planning to provide students with the best strategies for future growth in today's environmentally sensitive global economy.

### ENVR 790 - Directed Individual Studies (1-6 Credits)

Directed research topics to be individually assigned.

### ENVR 795 - Environmental Internship Preparation (1-3 Credits)

Preparation and presentation of a capstone project plan for conduct of multidisciplinary environmental research addressing public/private/non-profit sector issues through an internship in government agencies, NGOs or private industry.

**Prerequisites:** One semester full-time graduate enrollment or equivalent.

### ENVR 796 - Environmental Internship (1-3 Credits)

Environmental internship in government agencies, NGOs, or private industry, culminating in a project deliverable. Typically includes data analyses/metrics, resource management options, and/or internal outreach education, with final assessment. Restricted to graduate students in the MEERM program.

**Prerequisites:** 3 credits of ENVR 795; successful completion of MEERM comprehensive examination.

### ENVR 799 - Thesis Preparation (1-9 Credits)

### ENVR 800 - Seminar in Environmental Studies (3 Credits)

Examination of the effectiveness of environmental policies and methods relative to current issues and needs.

### ENVR 802 - Environmental Policy and Management (3 Credits)

An examination of issues related to environmental policy making, implementation and management.

**Cross-listed course:** POLI 769

**ENVR 804 - Environmental Advocacy Seminar (3 Credits)**

This seminar is designed to explore and develop practical advocacy skills in the area of environmental representation and to provide an understanding of advocacy in administrative, legislative, and litigation arenas.

**Cross-listed course:** LAWS 804

**ENVR 835 - Seminar in Environmental Ethics (3 Credits)**

Examination of the intellectual, cultural, and ethical frameworks within which environmental problems arise and are solved.

**Cross-listed course:** PHIL 835

**GEOL 500 - Field Geology (4-6 Credits)**

Geological field techniques including the use of field instruments and the preparation of geologic maps. Written and oral reports required.

**Prerequisites:** GEOL 325 and GEOL 355.

**Graduation with Leadership Distinction:** GLD: Research

**GEOL 501 - Principles of Geomorphology (3 Credits)**

The process of earth denudation with emphasis on chemistry of weathering, stream and erosion hydraulics, quantitative analysis of land form evolution.

**Prerequisites:** GEOL 101 and GEOL 102.

**Cross-listed course:** MSCI 501

**GEOL 502 - Principles of Coastal Geomorphology (4 Credits)**

Geological and physical controls on the morphology, development, and stability of coastlines. Analysis of waves and erosional processes, and coastal zone morphodynamics. Several required field trips.

**Prerequisite or Corequisite:** MATH 122 or MATH 141.

**Cross-listed course:** MSCI 502

**GEOL 503 - Regional Stratigraphy and Biostratigraphy of North America (3 Credits)**

Sedimentologic, biostratigraphic, and tectonic history of North America, approached from paleogeographic considerations with emphasis on the Atlantic Coastal Plain and Continental Margin. Three hours lecture and three hours recitation per week. Required field trips.

**GEOL 508 - Palynology (3 Credits)**

Fundamentals of pollen analysis including morphology of modern and fossil forms, use of pollen and spores for correlation, dating, establishing phylogenetic trends, and reconstruction of ancient environments. Two lectures plus one two-hour lab per week.

**GEOL 510 - Organic Sedimentation and Coal Genesis (3 Credits)**

Theories of origin of coal deposits and coal-forming ingredients. Basic concepts of coal composition and classification. Practical applications of coal petrographic techniques. Two lectures plus one two-hour lab. Two optional field trips.

**GEOL 511 - Advanced Paleontology (3 Credits)**

Systematic, ecologic, biogeographic, and evolutionary aspects of paleontology; lectures, practical exercises, field trips.

**Prerequisites:** GEOL 305.

**Cross-listed course:** MSCI 511

**GEOL 515 - Marine Micropaleontology (4 Credits)**

Marine microfossils; distribution, ecology, paleoecology, and biostratigraphy; use of microfossils in marine sediments to study oceanographic history. Three lectures and two laboratory hours per week.

**Cross-listed course:** MSCI 515

**GEOL 516 - Sedimentology (4 Credits)**

Modern concepts of sediment composition, sedimentary facies, depositional environments, and stratigraphy. Includes laboratory.

**Prerequisites:** GEOL 325.

**GEOL 518 - Surface to Subsurface Stratigraphy (3 Credits)**

Surface to subsurface stratigraphic interpretation and techniques; litho- and biostratigraphy; geophysical log interpretation and subsurface presentation.

**GEOL 520 - Isotope Geology and Geochronology (3 Credits)**

Dating techniques for Pleistocene deposits, sediments, archaeological materials, igneous and metamorphic rocks.

**GEOL 521 - Introduction to Geochemistry (3 Credits)**

Investigation of low temperature chemical reactions controlling the geochemistry of the earth's surface. Emphasis on CO<sub>2</sub>, carbonates, oxidation-reduction, thermodynamics, isotopes, biogeochemistry.

**Cross-listed course:** MSCI 521

**GEOL 524 - Environmental Radioisotope Geochemistry (3 Credits)**

Introduction to radioactivity and the use of radionuclides to study environmental processes, including age-dating and biogeochemical cycling in aquatic systems. Two lectures per week.

**Prerequisites:** CHEM 111, CHEM 112, MATH 141.

**GEOL 526 - Igneous Petrology (4 Credits)**

Petrography and petrogenesis of igneous rocks; evolution of contrasting petrotectonic terranes. Three lectures and three laboratory hours per week.

**Prerequisites:** GEOL 202.

**GEOL 527 - Metamorphic Petrology (4 Credits)**

Petrography and petrogenesis of metamorphic rocks in orogenic belts. Three lectures and three laboratory hours per week.

**Prerequisites:** GEOL 202.

**GEOL 531 - Plate Tectonics (3 Credits)**

Geological and geophysical evidence for plate tectonics, detailed development of the plate tectonics model, and present areas of research, including measurements of plate motion using satellite geodesy.

**Prerequisites:** Must have passed two GEOL courses numbered 300 or above, or consent of instructor.

**GEOL 537 - Field Methods in Geophysics (3 Credits)**

Application of two or more geophysical field methods to a current geological problem. Independent study contract required.

**GEOL 540 - Earth Science for Teachers I (3 Credits)**

Survey of topics related to the origin, internal structure, and internal processes of the earth, including plate tectonics, earthquakes, volcanoes, and mountain building. Required field trips, two lectures, and three lab hours per week. Cannot be used in M.S. or PhD. programs in geology.

**Cross-listed course:** EDSE 548

**GEOL 541 - Earth Science for Teachers II (3 Credits)**

Surface processes acting on the earth; introduction to weather and climate, weathering, erosion, and sedimentary processes; landform evolution; ocean currents and tides, near-shore geologic processes. Required field trips, two lecture and three lab hours per week. Cannot be used in MS or PhD programs in geology.

**Prerequisites:** EDSE 548/GEOL 540.

**Cross-listed course:** EDSE 549

**GEOL 542 - Methods in Geoscience Education Research (3 Credits)**

Introduction to methods used in discipline-based education research and their application to research questions in the geosciences.

**Prerequisites:** C or better in least one course in GEOL, ENVR, MSCI or GEOG.

**GEOL 545 - Geological Oceanography (3 Credits)**

A comprehensive study of the origin and development of the major structural features of the ocean basins and the continental margins. Discussion of the techniques used in obtaining geologic data and the interpretation of sedimentary processes, vulcanism, and the stratigraphy of the ocean basins.

**Cross-listed course:** MSCI 545

**GEOL 546 - Marine Geophysics (3 Credits)**

Introduction to the nature and structure of the ocean floor as revealed by geophysical techniques. Two hours lecture and three hours laboratory.

**GEOL 548 - Environmental Geophysics (4 Credits)**

Practical geophysical techniques for exploring the shallow subsurface. Seismic, resistivity, well log, gravity, magnetic method. Includes lectures and field exercises to collect and analyze data.

**Prerequisites:** MATH 141 and PHYS 201 or PHYS 211.

**GEOL 550 - Sedimentary Simulations and Sequence Stratigraphy (4 Credits)**

Problems of sequence stratigraphy resolved with graphic computer simulations. Sedimentary fill of basins by carbonates and/or clastics tracked as a function of rate of sediment accumulation, tectonic behavior, and sea level. Includes laboratory.

**Prerequisites:** GEOL 325.

**Cross-listed course:** MSCI 550

**GEOL 553 - Marine Sediments (3 Credits)**

Marine sedimentary environments; physical/biological factors which control the formation and distribution of modern marine sediments.

**Prerequisites:** GEOL 516.

**Cross-listed course:** MSCI 553

**GEOL 554 - Applied Seismology (3 Credits)**

Theory of seismic wave propagation. Seismic reflection data acquisition, processing, and interpretation.

**Prerequisites:** MATH 141; PHYS 201 or PHYS 211.

**GEOL 555 - Elementary Seismology (3 Credits)**

Basic elements of seismology. Mathematical development of seismic wave equations; measurement, description, and interpretation of seismic data.

**Prerequisites:** MATH 241.

**GEOL 556 - Seismic Reflection Interpretation (3 Credits)**

The interpretation of geologic structure using seismic sections. Recognition of apparent structure caused by velocity anomalies, multiples, and complex reflector geometry. Application to hydrocarbon exploration.

**GEOL 557 - Coastal Processes (3 Credits)**

Physical and geological processes controlling the formation and evolution of beach, barrier, and nearshore environments, including discussion of coastal management issues.

**Cross-listed course:** MSCI 557

**GEOL 560 - Earth Resource Management (3 Credits)**

An approach to problems of resource management by lecture and seminar using case studies in mineral, energy, hydrogeological, and environmental science.

**Graduation with Leadership Distinction:** GLD: Research  
**Experiential Learning:** Experiential Learning Opportunity

**GEOL 561 - Environmental Field Geology (6 Credits)**

An introduction to field methods in sedimentology, structural geology, hydrogeology and geophysics with special reference to geological hazards and environmental problems.

**GEOL 567 - Long-Term Environmental Change (3 Credits)**

Climatic changes of the past and their impact on the physical landscape, with an emphasis on the Quaternary period.

**Prerequisites:** A 200-level course in physical geography or geology or equivalent.

**Cross-listed course:** GEOG 567

**GEOL 568 - Introduction to Micrometeorology (3 Credits)**

Small-scale processes in the atmospheric boundary layers, including energy budget, radiation, soil heat transfer, humidity, viscous flows, turbulence, momentum and heat exchanges, evaporation, and marine atmospheric boundary layer.

**Prerequisites:** PHYS 201 and MATH 141.

**Cross-listed course:** MSCI 568

**GEOL 570 - Environmental Hydrogeology (3 Credits)**

Environmental considerations of the hydrologic cycle, occurrence and movement of ground water, aquifer analysis, and water well emplacement and construction. Water quality, pollution parameters, and the geochemistry of selected natural systems. The effects of environmental problems, waste disposal, and urban development upon the aqueous geochemical regime.

**Prerequisites:** GEOL 101 and CHEM 111 or their equivalents.

**GEOL 571 - Soil Hydrology (4 Credits)**

Saturated and unsaturated water flow through soils, pore pressure development, runoff generation, and watershed response to rainfall. Three lecture and three laboratory hours per week.

**Prerequisites:** PHYS 202 and MATH 142.

**GEOL 575 - Numerical Modeling for Earth Science Applications (3 Credits)**

Finite difference and finite element methods for solving the diffusion equation and advection-dispersion equation, with applications in hydrogeology, geophysics, geology, and marine science.

**Prerequisites:** MATH 142; MATH 241 is recommended.

**GEOL 579 - Air-Sea Interaction (3 Credits)**

The physical mechanism responsible for interaction between the ocean and the atmosphere and the influence of air-sea interaction on atmospheric and oceanic dynamics and thermodynamics on a wide variety of spatial/temporal scales.

**Cross-listed course:** MSCI 579

**GEOL 580 - Satellite Oceanography (3 Credits)**

This course provides knowledge of various techniques used in satellite remote sensing of the oceans. Key skills will be developed in satellite data processing, image analysis, and hands-on research.

**Cross-listed course:** MSCI 580

**GEOL 581 - Estuarine Oceanography (3 Credits)**

Estuarine kinematics and dynamics; classification of estuaries; estuarine circulation and mixing. Scheduled field trips are required.

**Prerequisites:** MSCI 314.

**Cross-listed course:** MSCI 581

**GEOL 582 - Marine Hydrodynamics (3 Credits)**

Basic principles of fluid statics and dynamics. Conservation of mass, momentum, and energy; viscosity, vorticity, and boundary layers with examples from the marine environment. Applications to and analysis of ocean currents and waves. Scheduled field trips are required.

**Prerequisites:** differential equations, PHYS 201 or PHYS 211.

**Cross-listed course:** MSCI 582

**GEOL 583 - Geology and Geochemistry of Salt Marshes (3 Credits)**

Geological and geochemical processes in salt marshes. Methods of geological research in marshes, including instrumental techniques, sampling design, and data analysis. Two lectures per week plus four weekends of project-oriented fieldwork and/or equivalent lab work. Scheduled field trips are required.

**Cross-listed course:** MSCI 583

**GEOL 600 - Senior Seminar in Geology and Geophysics (2 Credits)**

Advanced research topics in geology and geophysics; critical reading of literature, technical presentations, and written reports. Senior standing.

**GEOL 650 - Electron Microscopy and Microanalysis (4 Credits)**

SEM, ESEM, TEM, and EMPA, WDS quantitative analysis, EDS semi-quantitative analysis, EBSD, methods of sample preparation, and applications in varieties of disciplines. Two lecture and three laboratory hours per week.

**Prerequisites:** CHEM 111 or equivalent.

**GEOL 699 - Senior Thesis (3-6 Credits)**

Senior capstone experience, research on a problem of fundamental significance, supervised by faculty member; must include field study component, written final project report, and oral presentation at departmental seminar.

**GEOL 700 - Geology of South Carolina (3 Credits)**

Survey of the surficial, coastal, and bedrock geology of South Carolina, its regional physiographic and tectonic setting, and the natural resources of the state.

**GEOL 702 - Environmental Earth Science for Teachers (3 Credits)**

The hydrologic cycle in geologic settings of this region, and the effects of urbanization and industrialization on groundwater, rivers, and coasts. The vulnerability of urban and industrial systems to natural geologic processes. Two lecture and three laboratory hours per week. Not available for graduate credit for students in M.S. or Ph.D. programs in geological sciences.

**Prerequisites:** introductory course in any of the earth sciences.

**GEOL 703 - Field Studies in Pleistocene and Holocene Geology for Teachers (1 Credit)**

Two weekend field courses dealing with Pleistocene and Holocene coastal geology, plate tectonics, sea-level change, global circulation patterns, shoreline change since 1850, and nearshore processes.

**GEOL 704 - Field Studies for Teachers in Natural and Altered Barrier Island Systems (1 Credit)**

Two weekend field courses dealing with barrier island and associated marsh environments, marsh productivity, the dune-beach-bar system, shoreline stabilization, and nearshore processes on natural and armored shorelines.

**GEOL 711 - Paleoclimatology (3 Credits)**

An overview of Earth's climate history during Cenozoic. Emphasis will be placed on Pleistocene glacial-interglacial climate variability and understanding the proxies used to reconstruct past climate changes.

**Cross-listed course:** MSCI 711

**GEOL 715 - Stable Isotope Geochemistry (3 Credits)**

Introduction to the analysis of stable isotopes of hydrogen, oxygen, carbon, nitrogen, and sulfur using mass spectrometry. Emphasis will be on the use of these isotopes in geological problems.

**Prerequisites:** GEOL 521.

**GEOL 716 - Eustasy and Global Variations in Sequence Stratigraphy (3 Credits)**

Relationship of sequence stratigraphy to sea level variations, tectonics and sedimentation. Construction and analyses of paleogeographic maps, regional cross-sections, and chronostratigraphic charts.

**Cross-listed course:** MSCI 716

**GEOL 717 - Organic Geochemistry (3 Credits)**

Sources, transport, and fate of organic matter in natural environments including soils, riverine, estuarine, coastal and open ocean sediments and waters.

**Prerequisites:** GEO 521L/MSCI 521.

**Cross-listed course:** MSCI 717

**GEOL 720 - Crystal Chemistry and Mineral Structure (3 Credits)**

Principles of atomic structure and chemical variation of minerals.

**GEOL 722 - Aqueous Geochemistry (3 Credits)**

This course was not found in the supplied content but was listed in the program requirements. If possible, please provide us with the correct information.

**GEOL 725 - Solid Earth Processes (3 Credits)**

Examination of the structure and dynamics of the Earth's interior combining perspectives from geophysics and geochemistry. Focus on the lithospheric cycle.

**GEOL 726 - Igneous Processes and Crustal Genesis (3 Credits)**

An investigation of igneous processes and their role in crustal genesis and evolution.

**GEOL 731 - Advanced Structural Geology (3 Credits)**

A study of the deformation of the earth's crust including mechanics of folding, faulting, jointing, and cleavage formation. Consideration of current theories of orogenesis in relation to geophysical evidence for the structure of the earth's crust, mantle, and core.

**Prerequisites:** GEOL 331 and GEOL 536.

**GEOL 733 - Rock Mechanics (3 Credits)**

Behavior of rocks and minerals up to 10kb, 8000°C. Role of internal pore pressure and time. Interplay of theory and empiricism.

**Prerequisites:** MATH 300.

**GEOL 735 - Regional Tectonics (3 Credits)**

Integrated analysis (from both model and case history approaches) of the regional structural geology of selected classic areas and analysis of the interaction of tectonic and sedimentary processes in the production of the sedimentary sequences of selected geosynclines and basins.

Weekend field trips.



**GEOL 743 - Decision Making in Environmental Resource Management (3 Credits)**

Environmental project planning and management. Types and magnitudes of environmental problems; environmental pathways; environmental data acquisition and analysis; protection versus restoration; risk assessment; site assessment.

**Prerequisites:** GEOL 560.

**GEOL 744 - Decision Making in Energy Resource Management (3 Credits)**

An integrative seminar for science managers. Consideration of the technical, managerial, and financial aspects of decision making in geologic enterprises, with emphasis on hydrocarbon exploration.

**GEOL 745 - Petroleum Geology (3 Credits)**

An introduction to exploring for oil and natural gas; concentration on specific regions with energy resources.

**GEOL 750 - Basin Analysis Seminar (3 Credits)**

Development of the stratigraphic systems; detailed analysis of the aims, working methods, and relations between litho-, bio-, and chronostratigraphy. Three lecture hours per week with occasional field trips.

**GEOL 751 - Carbonate Petrology (3 Credits)**

Detailed analysis of the processes and products of carbonate sedimentation, diagenesis, and lithification, with special emphasis upon the role of organisms in forming carbonate sediments and sedimentary rocks. Three lecture hours per week with occasional field trips.

**GEOL 752 - Sandstone Petrology (3 Credits)**

Sandstone properties as a response to geologic processes. Relationships between the porous microstructure of sandstones and fluid transport. Automated petrography using image analysis and pattern recognition procedures.

**GEOL 754 - Oceanographic Techniques (1 Credit)**

Shipboard experience with basic techniques used by geological, physical, chemical, and biological oceanographers.

**Cross-listed course:** BIOL 754

**GEOL 755 - Environmental Measurements and Analysis (3 Credits)**

A field and laboratory course designed to acquaint students with basic techniques needed to measure and analyze various biotic and abiotic environmental parameters in estuarine and shallow water habitats. One lecture and six laboratory hours per week.

**GEOL 758 - Analysis of Geological Data (3 Credits)**

Principles used in processing, smoothing, correlating and contouring geological data and simulating geologic processes.

**GEOL 764 - Seismic Reflection Interpretation (3 Credits)**

The interpretation of regional stratigraphy and structure using seismic sections. Recognition of stratigraphic sequences, sedimentary facies, and extensional and compressional structures. Application to hydrocarbon exploration.

**GEOL 765 - Exploration Seismology (3 Credits)**

Seismic refraction and reflection methods including sources, instrumentation, data processing, velocity analysis, seismic modeling, and interpretation.

**Prerequisites:** GEOL 536 or equivalent.

**GEOL 766 - Advanced Seismology (3 Credits)**

Advanced treatment of elastic wave propagation, ray theory, normal modes, and free oscillations; applications to determine earth structure, modeling of earthquakes.

**Prerequisites:** GEOL 555 or equivalent.

**GEOL 770 - Ground Water Geology (3 Credits)**

The evaluation of aquifer characteristics by flow nets, Theis equation and graphic solution technique for water table and artesian conditions. Methodology of pumping tests and data collection. Prediction of aquifer response through time. Analog and computer analysis and interpretation of data.

**Prerequisites:** GEOL 570 or equivalent.

**GEOL 771 - Topics in Hydrogeology (3 Credits)**

Selected topics germane to the qualitative and quantitative aspects of the hydrologic cycle.

**GEOL 772 - Geologic Theories (3 Credits)**

Survey of the origin and development of geologic principles.

**GEOL 773 - Water Quality and Pollution (3 Credits)**

The nature of water; physical, chemical, and biological quality parameters. Techniques of quantitative analysis, methods of water quality control, and pollution abatement. Hydrogeochemical interactions and effects on water quality and waste disposal.

**Prerequisites:** GEOL 570 or equivalent.

**GEOL 774 - Solute Transport in Geologic Media (3 Credits)**

Processes influencing conservative and reactive transport of solutes through porous media. Geochemistry of natural waters; transport processes for geologic and environmental/contaminant problems; mathematical equations; numerical methods; field techniques.

**Prerequisites:** GEOL 570 or ECIV 563.

**GEOL 775 - Numerical Methods in Subsurface Hydrology (3 Credits)**

Formation of groundwater flow and solute transport problems, theory and practice, numerical methods, solution techniques.

**Cross-listed course:** ECIV 761

**GEOL 781 - Physical Oceanography (3 Credits)**

Geographic and hydrodynamic aspects of oceanography, with emphasis on estuaries. Physical properties of sea water and theories and methods involved in ocean currents, air-sea interaction, waves, and tides.

**Cross-listed course:** MSCI 781

**GEOL 782 - Chemical Oceanography (3 Credits)**

Chemical characteristics of sea water, distribution of properties, and chemical processes in the oceans, with emphasis on estuaries.

**Cross-listed course:** MSCI 782

**GEOL 783 - Oceanographic Time Series Analysis (3 Credits)**

Techniques in the analysis of oceanographic data sequences, including filtering techniques, fast Fourier transforms, and empirical orthogonal functions.

**Cross-listed course:** MSCI 783

**GEOL 784 - Geophysical Fluid Dynamics (3 Credits)**

Equations governing the large-scale dynamics of the atmosphere and ocean, rotational influence, shallow water equations, vorticity, quasi-geostrophic dynamics, Rossby waves, energy and enstrophy, and geostrophic turbulence.

**Prerequisites:** MATH 241 or ENGR 360 or GEOL 582/MSCI 582 or GEOL 781/MSCI 781.

**Cross-listed course:** MSCI 784

**GEOL 785 - Atmospheric Dynamics (3 Credits)**

Elementary applications of the basic equations, scale analysis, planetary boundary layer, atmospheric oscillations, synoptic and mesoscale systems, hydrodynamic instability, cyclogenesis, frontogenesis, energy cycle, momentum budget, and tropical motion systems.

**Cross-listed course:** MSCI 785

**GEOL 790 - Directed Individual Studies in Geology (1-6 Credits)**

Directed research topics to be individually assigned and supervised by graduate faculty.

**GEOL 799 - Thesis Preparation (1-9 Credits)****GEOL 800 - Seminar (General Geology) (0-1 Credits)**

Required of all graduate students.

**GEOL 801 - Seminar in Paleontology (2 Credits)****GEOL 802 - Seminar in Paleobotany (2 Credits)**

Readings and discussions on current topics.

**GEOL 803 - Seminar in Stratigraphy (2 Credits)**

Critical analysis of recent papers dealing with the reconstruction of marine paleoenvironments based on deep sea sediments. Emphasis will be placed on specific intervals of geologic time. Two discussion hours per week.

**GEOL 804 - Seminar in Stratigraphy (2 Credits)****GEOL 805 - Seminar in Earth and Ocean Science Education (1 Credit)**

Interactive community outreach and middle school geoscience education for graduate students interested in outreach at the K-12 level. Pass/fail grading.

**GEOL 818 - Seminar in Geophysics (2 Credits)**

Seminar related to current topics in geophysics.

**GEOL 819 - Seminar in Tectonophysics (2 Credits)**

Readings and discussion on current tectonophysical problems.

**GEOL 821 - Seminar in Mineralogy (2 Credits)****GEOL 824 - Seminar in Geochemistry (2 Credits)****GEOL 831 - Seminar in Structural Geology (2 Credits)****GEOL 832 - Seminar in Structural Geology (2 Credits)****GEOL 833 - Seminar in Structural Geology (2 Credits)****GEOL 834 - Seminar in Structural Geology (2 Credits)****GEOL 841 - Seminars in Petrology (2 Credits)****GEOL 842 - Seminar in Petrology (2 Credits)****GEOL 843 - Seminar in Petrology (2 Credits)****GEOL 844 - Seminar in Sedimentology (2 Credits)****GEOL 851 - Seminar in Sedimentology (2 Credits)****GEOL 854 - Seminar in Geomorphology (2 Credits)****GEOL 861 - Seminar in Hydrogeology (3 Credits)****GEOL 862 - Seminar in Hydrogeology (3 Credits)****GEOL 888 - Data Presentation Workshop (3 Credits)**

Preparation and presentation, oral and written, of geological data, discussed via examples from students' own work and from published material.

**GEOL 899 - Dissertation Preparation (1-12 Credits)****MSCI 501 - Principles of Geomorphology (3 Credits)**

The process of earth denudation with emphasis on chemistry of weathering, stream and erosion hydraulics, quantitative analysis of land form evolution.

**Prerequisites:** GEOL 101 and GEOL 102.

**Cross-listed course:** GEOL 501

**MSCI 502 - Principles of Coastal Geomorphology (4 Credits)**

Geological and physical controls on the morphology, development, and stability of coastlines. Analysis of waves and erosional processes, and coastal zone morphodynamics. Several required field trips.

**Prerequisite or Corequisite:** MATH 122 or MATH 141.

**Cross-listed course:** GEOL 502

**MSCI 503 - Environmental Microbiology (3 Credits)**

An overview of the microbial world including a survey of the distribution, functioning, and diversity of microorganisms in natural systems.

Discusses the crucial roles that microorganisms play in ecosystem function, biogeochemical cycles, and environmental quality.

**Prerequisites:** MSCI 102 or BIOL 102, CHEM 112.

**Cross-listed course:** BIOL 502

**MSCI 505 - Senior Seminar (1 Credit)**

CL: 2020.

**MSCI 509 - MATLAB-Based Data Analysis in Ocean Sciences (3 Credits)**

MATLAB-based course in processing, analysis, and visualization of large oceanographic data sets. Includes scalar and vector time series measured at fixed locations as well as shipboard surveys of oceanographic characteristics varying both in 3-D and in time. Methods and techniques are relevant to other geoscience disciplines.

**Prerequisites:** MATH 141.

**MSCI 510 - Invertebrate Zoology (4 Credits)**

Phylogenetic and comparative aspects of anatomy, physiology, reproduction, and embryology of the invertebrates. Three lecture and one three-hour laboratory period per week.

**Prerequisites:** BIOL 301 or MSCI 311.

**Cross-listed course:** BIOL 510

**Graduation with Leadership Distinction:** GLD: Research

**MSCI 511 - Advanced Paleontology (3 Credits)**

Systematic, ecologic, biogeographic, and evolutionary aspects of paleontology. Lectures, practical exercises, occasional field trips.

**Prerequisites:** GEOL 311.

**Cross-listed course:** GEOL 511

**MSCI 515 - Marine Micropaleontology (4 Credits)**

Marine microfossils; distribution, ecology, paleoecology, and biostratigraphy; use of microfossils in marine sediments to study oceanographic history. Three lectures and two laboratory hours per week.

**Cross-listed course:** GEOL 515

**MSCI 521 - Introduction to Geochemistry (3 Credits)**

Investigation of low temperature chemical reactions controlling the geochemistry of the earth's surface. Emphasis on CO<sub>2</sub>, carbonates, oxidation reduction, thermodynamics, isotopes, biogeochemistry.

**Cross-listed course:** GEOL 521

**MSCI 524 - Environmental Radioisotope Geochemistry (3 Credits)**

Introduction to radioactivity and the use of radionuclides to study environmental processes, including age-dating and biogeochemical cycling in aquatic systems. Two lectures per week.

**Prerequisites:** CHEM 111, CHEM 112, MATH 141.

**MSCI 525 - Marine Plants (4 Credits)**

Diversity, distribution, physiology, ecology, evolution, and economic importance of marine algal, seagrass, and mangrove communities. Three lecture and three laboratory hours per week. Scheduled field trips are required.

**Prerequisites:** BIOL 301 or MSCI 311.

**Cross-listed course:** BIOL 525

**MSCI 535 - Fishery Management (3 Credits)**

Management and conservation of aquatic and marine resources, with emphasis on fisheries. Data procurement and analysis; commercial and recreational fisheries; sociological, political, legal, and environmental factors that affect fishery management; and fish biodiversity.

**Prerequisites:** BIOL 301.

**Cross-listed course:** BIOL 535

**MSCI 536 - Ichthyology (4 Credits)**

Phylogeny, morphology, behavior, and ecology of fishes. Three lecture and 3 laboratory hours plus three field trips to be arranged.

**Prerequisites:** BIOL 301 or MSCI 311.

**Cross-listed course:** BIOL 536

**Graduation with Leadership Distinction:** GLD: Research

**MSCI 537 - Aquaculture (3 Credits)**

Introduction to the practical and scientific aspects of the commercial culture of freshwater and marine organisms. Three lecture hours per week. One all-day field trip required.

**Prerequisites:** BIOL 301 or MSCI 311.

**MSCI 538 - Behavior of Marine Organisms (4 Credits)**

The identification of behavioral adaptations of estuarine and marine organisms: their ecology, physiology, development, and evolutionary history; field observations.

**Prerequisites:** BIOL 101 and BIOL 102 or MSCI 311.

**Cross-listed course:** BIOL 538

**Graduation with Leadership Distinction:** GLD: Research

**MSCI 545 - Geological Oceanography (3 Credits)**

A comprehensive study of the origin and development of the major structural features of the ocean basins and the continental margins. Discussion of the techniques used in obtaining geologic data and the interpretation of sedimentary processes, vulcanism, and the stratigraphy of the ocean basins.

**Cross-listed course:** GEOL 545

**MSCI 550 - Sedimentary Simulations and Sequence Stratigraphy (4 Credits)**

Problems of sequence stratigraphy resolved with graphic computer simulations. Sedimentary fill of basins by carbonates and/or clastics tracked as a function of rate of sediment accumulation, tectonic behavior and sea level. Includes laboratory.

**Prerequisites:** GEOL 301.

**Cross-listed course:** GEOL 550

**MSCI 552 - Population Genetics (3 Credits)**

An introduction to the principles of population genetics, with emphasis on the origin, maintenance, and significance of genetic variation in natural populations.

**Prerequisites:** BIOL 301, MSCI 311, and BIOL 303.

**Cross-listed course:** BIOL 552

**Graduation with Leadership Distinction:** GLD: Research

**MSCI 553 - Marine Sediments (3 Credits)**

Marine sedimentary environments; physical/biological factors which control the formation and distribution of modern marine sediments.

**Prerequisites:** GEOL 516.

**Cross-listed course:** GEOL 553

**MSCI 555 - Conservation and Health in Marine Systems (3 Credits)**

Introduces the field of conservation and explores the intersection between conservation and environmental health with a particular focus on coastal and marine case studies.

**MSCI 557 - Coastal Processes (3 Credits)**

Physical and geological processes controlling the formation and evolution of beach, barrier, and nearshore environments, including discussion of coastal management issues.

**Cross-listed course:** GEOL 557

**MSCI 566 - Ecosystem Analysis (3 Credits)**

The formulation and simulation of compartment models of marine and terrestrial ecosystems with complex nutrient cycling, food chains, and energy flow. Analog and digital simulation techniques. Ecosystem stability and sensitivity. Organization, structure, and diversity of an ecosystem.

**MSCI 568 - Introduction to Micrometeorology (3 Credits)**

Small-scale processes in the atmospheric boundary layers, including energy budget, radiation, soil heat transfer, humidity, viscous flows, turbulence, momentum and heat exchanges, evaporation, and marine atmospheric boundary layer.

**Prerequisites:** PHYS 201 and MATH 141.

**Cross-listed course:** GEOL 568

**MSCI 574 - Marine Conservation Biology (3 Credits)**

Exploration of how human activities affect marine natural populations, species, communities and ecosystems, including threats to biodiversity; approaches to marine conservation; and ecological and evolutionary responses to anthropogenic disturbance.

**Prerequisites:** BIOL 301.

**Cross-listed course:** BIOL 574

**MSCI 575 - Marine Ecology (3 Credits)**

Structure, dynamics, and interactions between populations and communities in marine ecosystems. Attendance at designated departmental seminars is required. Three lecture hours per week.

**Prerequisites:** CHEM 111 and BIOL 301 or MSCI 311.

**Cross-listed course:** BIOL 575

**MSCI 575L - Marine Ecology Laboratory (1 Credit)**

Laboratory and field exercises in coastal environments. Three hours per week plus field trips.

**Prerequisite or Corequisite:** MSCI 575.

**Cross-listed course:** BIOL 575L

**MSCI 576 - Marine Fisheries Ecology (3 Credits)**

Interdisciplinary examination of the distribution, reproduction, survival, and historical variation of the principal commercial marine fisheries.

**Prerequisites:** BIOL 301.

**Cross-listed course:** BIOL 576

**MSCI 577 - Ecology of Coral Reefs (4 Credits)**

Structure, productivity, and biodiversity of coral reefs, emphasizing their sensitivity, stability, and sustainability. Taught as an extended field experience with daily lectures and guided research activities.

**Prerequisites:** BIOL 301 or MSCI 311.

**Cross-listed course:** BIOL 577

**MSCI 578 - Physiological and Pollution Ecology of Marine Organisms (3 Credits)**

Functional adaptation of marine plants and animals to ecological stresses including pollution. Three lecture hours per week.

**Prerequisites:** MSCI 311 or equivalent.

**MSCI 579 - Air-Sea Interaction (3 Credits)**

The physical mechanism responsible for interaction between the ocean and the atmosphere and the influence of air-sea interaction on atmospheric and oceanic dynamics and thermodynamics on a wide variety of spatial/temporal scales.

**Cross-listed course:** GEOL 579

**MSCI 580 - Satellite Oceanography (3 Credits)**

This course provides knowledge of various techniques used in satellite remote sensing of the oceans. Key skills will be developed in satellite data processing, image analysis, and hands-on research.

**Cross-listed course:** GEOL 580

**MSCI 581 - Estuarine Oceanography (3 Credits)**

Estuarine kinematics and dynamics; classification of estuaries; estuarine circulation and mixing. Scheduled field trips are required.

**Prerequisites:** MSCI 314.

**Cross-listed course:** GEOL 581

**MSCI 582 - Marine Hydrodynamics (3 Credits)**

Basic principles of fluid statics and dynamics. Conservation of mass, momentum, and energy; viscosity, vorticity, and boundary layers with examples from the marine environment. Applications to and analysis of ocean currents and waves.

**Prerequisites:** differential equations, PHYS 201 or PHYS 211.

**Cross-listed course:** GEOL 582

**MSCI 583 - Geology and Geochemistry of Salt Marshes (3 Credits)**

Geological and geochemical processes in salt marshes. Methods of geological research in marshes including instrumental techniques, sampling design, and data analysis. Two lectures per week plus four weekends of project oriented fieldwork and/or equivalent lab work. Scheduled field trips are required.

**Cross-listed course:** GEOL 583

**MSCI 585 - Coastal Tropical Oceanography (4 Credits)**

Descriptive oceanography of mangrove and coral reef coasts with emphasis on physical processes. Taught as an extended field experience with daily lectures and guided research activities.

**Prerequisites:** MSCI 312.

**MSCI 590 - Beach-Dune Interactions (3 Credits)**

Influence of wind on coastal systems, with emphasis on nearshore currents, sediment transport and bedforms, aeolian transport, and dunes. Minimum Junior standing required.

**Cross-listed course:** GEOG 590

**MSCI 599 - Topics in Marine Science (1-3 Credits)**

Current developments in marine science selected to meet faculty and student interests. Course content varies and will be announced by title in schedule of courses.

**MSCI 624 - Aquatic Chemistry (3 Credits)**

Study of the chemical reactions and processes affecting the distribution of chemical species in natural systems. Three lecture hours per week.

**Prerequisite or Corequisite:** CHEM 321, MATH 142.

**Cross-listed course:** CHEM 624

**MSCI 627 - Marine Phytoplankton (3 Credits)**

Examines the physiology and ecology of phytoplankton, including environmental controls on community composition, primary productivity, and detection and characterization of water quality (eutrophication) and harmful algal blooms.

**Prerequisites:** MSCI 102 or MSCI 450 or BIOL 450.

**Cross-listed course:** BIOL 627

**MSCI 711 - Paleoclimatology (3 Credits)**

An overview of Earth's climate history during Cenozoic. Emphasis will be placed on Pleistocene glacial-interglacial climate variability and understanding the proxies used to reconstruct past climate changes.

**Cross-listed course:** GEOL 711

**MSCI 716 - Eustasy and Global Variations in Sequence Stratigraphy (3 Credits)**

Relationship of sequence stratigraphy to sea level variations, tectonics and sedimentation. Construction and analyses of paleogeographic maps, regional cross-sections, and chronostratigraphic charts.

**Cross-listed course:** GEOL 716

**MSCI 717 - Organic Geochemistry (3 Credits)**

Sources, transport, and fate of organic matter in natural environments including soils, riverine, estuarine, coastal and open ocean sediments and waters.

**Prerequisites:** GEOL 521/MSCI 521.

**Cross-listed course:** GEOL 717

**MSCI 750 - Advanced Biological Oceanography (3 Credits)**

Three lecture hours per week.

**Prerequisites:** BIOL 450/MSCI 450.

**MSCI 752 - Marine Biogeochemistry (3 Credits)**

Biological, geological, and physical processes that influence the cycling of major bioactive elements (C, O, N, P, S) in marine waters and sediments.

**Cross-listed course:** BIOL 752

**MSCI 754 - Oceanographic Techniques (1 Credit)****MSCI 755 - Marine Conservation and Environmental Health (3 Credits)**

Explores the intersection between conservation and environmental health with a particular focus on coastal and marine case studies.

**MSCI 758 - Special Topics in Marine Sciences (1-3 Credits)**

CL: 2020.

**MSCI 767 - Ecological Modeling and Environmental Planning (4 Credits)**

Concepts in systems of models and computer simulations in examining environmental interactions, predicting environmental impact, and facilitating the process of environmental planning. Lab practice in analog and digital simulation and data interpretation.

**Prerequisites:** MATH 121 or equivalent, ecology, ENHS 660.

**Cross-listed course:** BIOL 768, ENHS 767

**MSCI 769 - Reproductive Ecology (3 Credits)**

Theoretical aspects and examples of the variety of reproductive and life history patterns found in animals and plants as adaptations to various environmental constraints. Three lecture hours per week.

**Prerequisites:** BIOL 570.

**Cross-listed course:** BIOL 769

**MSCI 777 - Current Topics in Marine Ecology for Teachers (3 Credits)**

Primarily for teachers. Marine science materials with emphasis on coastal environments. Field exercises.

**MSCI 778 - Current Topics in Marine Ecology for Teachers (3 Credits)**

Primarily for teachers. Marine science materials with emphasis on coastal environments. Field exercises.

**MSCI 781 - Physical Oceanography (3 Credits)**

Geographic and hydrodynamic aspects of oceanography, with emphasis on estuaries. Physical properties of sea water and theories and methods involved in ocean currents, air-sea interaction, waves, and tides.

**Cross-listed course:** GEOL 781

**MSCI 782 - Chemical Oceanography (3 Credits)**

Chemical characteristics of sea water, distribution of properties, and chemical processes in the oceans, with emphasis on estuaries.

**Cross-listed course:** GEOL 782

**MSCI 783 - Oceanographic Time Series Analysis (3 Credits)**

Techniques in the analysis of oceanographic data sequences, including filtering techniques, fast Fourier transformers, and empirical orthogonal functions.

**Cross-listed course:** GEOL 783

**MSCI 784 - Geophysical Fluid Dynamics (3 Credits)**

Equations governing the large-scale dynamics of the atmosphere and ocean, rotational influence, shallow water equations, vorticity, quasi-geostrophic dynamics, Rossby waves, energy and enstrophy, and geostrophic turbulence.

**Prerequisites:** MATH 241 or ECIV 360 or GEOL 582/MSCI 582 or GEOL 781/MSCI 781.

**Cross-listed course:** GEOL 784

**MSCI 785 - Atmospheric Dynamics (3 Credits)**

Elementary applications of the basic equations, scale analysis, planetary boundary layer, atmospheric oscillations, synoptic and mesoscale systems, hydrodynamic instability, cyclogenesis, frontogenesis, energy cycle, momentum budget, and tropical motion systems.

**Cross-listed course:** GEOL 785

**MSCI 790 - Directed Individual Studies in Marine Sciences (1-6 Credits)**

Directed research topics to be individually assigned and supervised by graduate faculty.

**MSCI 795 - Issues in Coastal Environmental Health (3 Credits)**

Problems associated with coastal population growth and development. Emphasis is on the working group approach to ameliorating impacts on ecosystem and human health.

**MSCI 798 - Research in Marine Science (1-9 Credits)**

In depth research methods and techniques in preparation of thesis or dissertation.

**MSCI 799 - Thesis Preparation (1-9 Credits)****MSCI 800 - Marine Science Seminar (0 Credits)**

Advanced topics in Marine Science research presented in Seminar format. Class meets weekly, every semester, during the Marine Science Program seminar.

**MSCI 899 - Dissertation Preparation (1-12 Credits)**

## Earth and Environmental Resources Management, M.E.E.R.M.

The Master of Earth and Environmental Resources Management (M.E.E.R.M.) degree is offered through the School of the Earth, Ocean and Environment.

### Learning Outcomes

- Students are required to demonstrate knowledge of business and policy by taking a minimum of twelve hours of courses from selectives offered and examine the scientific and engineering principles that govern this complex field by completing at least twelve hours of courses from selectives offered in these fields.
- Students, upon completing the program, should be able to demonstrate that they can effectively integrate business and/or policy concepts with scientific information.
- Students enrolled in the thesis option must successfully defend a thesis proposal which demonstrates an understanding of the interactions between earth resources, business, policy and the environmental concepts.
- All students must demonstrate that they comprehend and can apply the integrated concepts developed within the courses completed by successfully completing a writing which indicates their proficiency in this integration.

### Admission

Requirements for admission conform with general regulations of The Graduate School including satisfactory scores on the Graduate Record Examination and successful academic performance at an accredited institution. Applicants whose native language is not English are also required to submit a satisfactory score on the TOEFL or the IELTS Intl. Academic Course Type 2 exam. The minimum acceptable score on the TOEFL is 80 (internet-based) and the minimum acceptable overall band score on the IELTS Intl. Academic Course Type 2 exam is 6.5. Attention will be given not only to the applicant's academic record but also to relevant scientific and administrative experience.

Requests for further information should be addressed to the Graduate Director, School of the Earth, Ocean and Environment, via e-mail: [GradDir@seoe.sc.edu](mailto:GradDir@seoe.sc.edu).

### Degree Requirements (36 Hours)

This master's degree program is focus-based on students' backgrounds and interests. Electives are available in geological, biological, marine, and environmental health sciences; geography; chemistry and biochemistry; chemical, civil, and environmental engineering; environmental law; policy; and business administration, based on the background and needs of the student. At least one-third of the course work must be in earth and

environmental resources and at least one-third in management, finance, policy, and economics, but no more than 50 percent in either field. Students will be required to complete six hours of integrative seminars. Courses exist in business administration for graduate students with nonbusiness backgrounds. Students will be required to demonstrate sufficient background in one or more fields, gained by academic study or experience, to qualify for graduate courses in earth or environmental resources.

## Coursework

By design, no core curriculum is specified except the two required integrative seminars to be taken from the following courses:

Course	Title	Credits
ENVR 700	Current Topics in Environmental Studies	3
ENVR 800	Seminar in Environmental Studies	3
ENVR 804	Environmental Advocacy Seminar	3
ENVR 835	Seminar in Environmental Ethics	3
GEOL 560	Earth Resource Management	3
GEOL 743	Decision Making in Environmental Resource Management	3
<b>Total Credit Hours</b>		<b>18</b>

## Additional Information

Additional course offerings will be tailored to the individual's interests and background of experience and education. Students will enroll in existing courses in the Environmental and Sustainability Program (formerly School of the Environment); geological, biological, or marine sciences; chemical, civil, or environmental engineering; environmental health; chemistry or biochemistry; geography; business administration; and other disciplines. The integrative seminars serve the purpose of relating science and nonscience subject matter. A program of study will be developed with the student's interdisciplinary committee according to the guidelines established by the coordinating committee and will be approved by the student's advisor and by the graduate director. Theses will be supervised by an appropriate advisor and interdisciplinary committee based on the student's research topic.

The program requires a total of 36 credit hours, which includes 6 hours of thesis credit or, with director's approval, 6 hours of approved electives in lieu of a thesis. There is no foreign language requirement.

All candidates for a degree in the MEERM graduate program must complete a comprehensive examination followed by a comprehensive assessment that is distinct from program course requirements. A comprehensive assessment requires the student to synthesize and integrate knowledge acquired in coursework and other learning experiences and to apply theory and principles in a situation that approximates some aspect of professional practice or research in the discipline. It must be used as a means by which faculty judge whether the student has mastered the body of knowledge and can demonstrate proficiency in the required competencies. Since the MEERM degree has three paths to degree (traditional thesis, traditional non-thesis, and internship), each distinct path has a separate comprehensive assessment model. Students in the traditional thesis track need only successfully defend their thesis and provide a copy of the approved thesis as evidence of successful completion of the comprehensive assessment. Similarly, traditional non-thesis students should petition the Director of the MEERM program for non-thesis status and provide evidence of scholarly research, including, but not limited to, an applied

research project, comprehensive manual or other major written work. Students admitted into the traditional non-thesis track will be required to present a detailed public seminar prior to graduation that integrates this scholarly work with knowledge acquired in MEERM coursework. This integrated seminar may be used as evidence of successful completion of the comprehensive assessment. Internship track students ordinarily present a detailed, public seminar that outlines the internship experience after the internship has been completed. As the internship advisor, faculty advisor, all other committee members and the Graduate Studies Director are required to attend and critically evaluate this seminar, the internship seminar will be used as a means to judge the student's grasp of relevant knowledge and ability to synthesize coherently a swath of MEERM disciplines. Satisfactory completion of the internship seminar will be used as evidence for successful completion of the comprehensive assessment.

It is expected that students with demonstrated course work in earth or environmental resources and pertinent experience should be able to complete the program in two years.

## Geological Sciences, M.S.

### Learning Outcomes

- Students will demonstrate their understanding of the principles of the primary areas of the Earth sciences and demonstrate their facility for advanced study in their chosen specialized areas.
- Students will learn the scientific method and use it to gain knowledge.
- Students will demonstrate their proficiency in the use of laboratory, computational and field equipment and have problem-solving skills.

### Degree Requirements (30 Hours)

Degree requirements generally follow those of The Graduate School. The M.S. degree requires the satisfactory completion of 30 semester hours of graduate credit. A written thesis is required of all M.S. students. Students must successfully defend their thesis in a M.S. Thesis Defense. The M.S. Thesis Defense consists of a public seminar, public question and answer period, and a private consultation/examination with the Thesis committee. It must take place no earlier than sixty (60) days after a successful M.S. Thesis Proposal Presentation. This defense must be filed with the Graduate Studies Office at least one week in advance by submission of an abstract with the date, time, and place of the defense. This information will be distributed by the Graduate Studies Office to all faculty and students and posted on the department's website. Students must be registered for at least one semester hour of graduate credit during the term in which the Thesis is completed and approved.

A Program of Study must be filed with the Graduate School before the Thesis Defense. The results of the Thesis Defense should be filed with the Graduate Studies Office within one week of the defense date using the appropriate form. If the student fails the Thesis Defense, he/she is required to repeat it within 120 days. Failure to do so or a second failure leads to disqualification of the student from the M.S. program.

Additional course work is determined by the student and his/her advisory committee in accordance with departmental requirements and the student's background and specific needs. Qualifying and comprehensive exams are typically completed within the first year of study. The oral portion of the comprehensive exam consists, in part, of the defense of a paper written by the student.

Additional details are available from the director of graduate studies for the School of the Earth, Ocean and Environment via e-mail at: GradDir@seoe.sc.edu

## Geological Sciences, Ph.D.

### Learning Outcomes

- Students will demonstrate their ability to use appropriate laboratory and field equipment and have an understanding of scientific methodology, quantitative problem-solving skills and experimental/numerical techniques.
- Students will demonstrate an adequate level of understanding of the principles and practices of the primary areas of the Earth and Ocean sciences and demonstrate their facility for doctoral level study in their chosen specialized areas. This will be demonstrated through the preparation of two required articles for submission to peer-reviewed journals.
- Students will demonstrate the ability to conduct original scientific research at the doctoral level. In this regard the student will operate as an independent scientist.
- Students will prepare and publish a peer-reviewed manuscript and a doctoral Dissertation that demonstrate effective written communication skills, particularly those related to the Earth and Ocean Sciences. A second publication must be submitted prior to matriculation.
- Students will possess effective oral communication skills, particularly those related to the Earth and Ocean Sciences. This will be demonstrated in a public thesis defense, and question and answer session.
- Within two years of graduation with their Ph.D. degree, students will be engaged in professional careers.

### Degree Requirements (30 Post-Masters Hours)

The Ph.D. degree requires the satisfactory completion of a minimum of 60 semester hours of graduate credit beyond the bachelor's degree, or a minimum of 30 hours beyond the master's degree, including at least 12 credit hours of GEOL 899. Additional course work is determined by the student and his/her advisory committee in accordance with departmental requirements and the student's background and specific needs. Qualifying and comprehensive exams must be successfully completed in a timely manner. The oral portion of the comprehensive exam consists, in part, of the defense of a paper written by the student which has been submitted for publication in an approved peer-reviewed journal. All Ph.D. candidates are required to publish one paper in and submit a second paper to refereed scientific journals prior to graduation. A written dissertation is required which must be successfully defended. Additional details are available from the director of graduate studies for the School of the Earth, Ocean and Environment via e-mail at: GradDir@seoe.sc.edu.

## Marine Science, M.S.

### Learning Outcomes

- Students will conduct independent scientific research at the graduate level.
- Students will demonstrate teaching skills.

- Students will communicate orally to demonstrate their ability to present scientific results clearly, logically, and critically.
- Students will communicate in writing to demonstrate their ability to present scientific results clearly, logically, and critically.
- Students will apply scientific methodology, quantitative problem-solving, and experimental techniques within the core areas of marine science.

### Degree Requirements (30 Hours)

General requirements for degrees in Marine Science are the same as those established by the Graduate School. The M.S. program of study and other specific degree requirements are planned in consultation with the graduate student, the graduate student's advisory committee, the Marine Science Graduate Studies Committee, and the Marine Science Program Director.

The M.S. degree requires the satisfactory completion of a minimum of 30 credit hours, including 12 hours of core courses and one additional course numbered 700 or above (other than 799, Thesis Preparation). The remaining credits may be earned in courses numbered above 500, including 6 hours of 799.

M.S. students must achieve and maintain an overall GPA of 3.00 on all courses taken for graduate credit and complete each of the core courses with a minimum grade of B.

A written thesis is required of all Masters students. Students must successfully defend their thesis in a final Comprehensive Examination according to the calendar approved by the Graduate School. As a portion of the comprehensive assessment of the thesis, the material will be presented in a public seminar. This presentation must take place no earlier than sixty (60) days after successful MS Thesis Research Plan presentation. The student's major professor must notify the Graduate Studies Director of an impending defense in writing (an email is sufficient) not less than 14 days prior to the scheduled defense date. This notification must include an abstract of the thesis. The defense must be publicly announced not less than seven days prior to the defense and is open to all faculty and students. At the end of the seminar, the audience will be excused and the defense will continue with only the candidate, the advisory committee and interested members of the faculty present. The thesis advisor must inform the Graduate Studies Director via appropriate form when the thesis is satisfactorily defended and accepted by the committee.

### Required Courses for Marine Science Program

The following courses are required for students in the Marine Science Program unless they are specifically exempted:

Course	Title	Credits
MSCI 545	Geological Oceanography	3
MSCI 750	Advanced Biological Oceanograph	3
MSCI 781	Physical Oceanography	3
MSCI 782	Chemical Oceanography	3
<b>Total Credit Hours</b>		<b>12</b>

### Areas of Emphasis in Marine Science

A number of courses exist in various departments and colleges that enable students to specialize in a particular area of emphasis in marine science.

- Marine biology/Biological oceanography
- Marine chemistry/Chemical oceanography
- Marine geology/Geological oceanography
- Physical oceanography/Atmospheric dynamics

### Non-MSCI Courses Acceptable for Major Credit

Course	Title	Credits
BIOL 534	Animal Behavior	3
BIOL 534L	Animal Behavior Laboratory	1
BIOL 543	Comparative Physiology	3
BIOL 543L	Comparative Physiology Laboratory	1
BIOL 570	Principles of Ecology	3
BIOL 570L	Principles of Ecology Laboratory	1
BIOL 651	Limnology	4
BIOL 722	Aquatic Bacteriology	3
BIOL 722L	Aquatic Bacteriology Laboratory	1
BIOL 727	Marine Phytoplankton	3
BIOL 728	Advanced Phycology	3
BIOL 729	The Biology of Fish	3
BIOL 730	The Biology of Fish	3
BIOL 731	Advanced Invertebrate Zoology I	3
BIOL 755	Quantitative Ecology	3
BIOL 759	Physiological Ecology	3
BIOL 760	Electron Microscopy	3
BIOL 760L	Electron Microscopy Laboratory	1
CHEM 511	Inorganic Chemistry	3
CHEM 541L	Physical Chemistry Laboratory	2
CHEM 542	Physical Chemistry	3
CHEM 542L	Physical Chemistry Laboratory	2
CHEM 729	Special Topics in Analytical Chemistry	3
CHEM 741	Chemical Thermodynamics	3
EMCH 501	Engineering Analysis I	3
EMCH 502	Engineering Analysis II	3
EMCH 741	Viscous and Turbulent Flow	3
EMCH 751	Advanced Heat Transfer	3
EMCH 794	Thermodynamics	3
ECIV 751	Water and Wastewater Treatment Theory I	3
ECIV 752	Water and Wastewater Treatment Theory II	3
ECIV 755	Industrial Wastewater Treatment	3
ECIV 765	Erosion and Sediment Control	3
GEOG 510	Special Topics in Geographic Research	3
GEOG 531	Quantitative Methods in Geographic Research	3
GEOG 541	Advanced Cartography	3
GEOG 545	Synoptic Meteorology	4
GEOG 546	Applied Climatology	4
GEOG 551	Principles of Remote Sensing	3
GEOG 554	Spatial Programming	3
GEOG 563	Advanced Geographic Information Systems	3
GEOG 763	Seminar in Geographic Information Systems	3
GEOL 508	Palynology	3
GEOL 516	Sedimentology	4
GEOL 518	Surface to Subsurface Stratigraphy	3
GEOL 520	Isotope Geology and Geochronology	3

GEOL 546	Marine Geophysics	3
GEOL 570	Environmental Hydrogeology	3
GEOL 722	Aqueous Geochemistry	3
GEOL 750	Basin Analysis Seminar	3
GEOL 751	Carbonate Petrology	3
MATH 520	Ordinary Differential Equations	3
MATH 521	Boundary Value Problems and Partial Differential Equations	3
MATH 526	Numerical Linear Algebra	4
MATH 527	Numerical Analysis	3
MATH 544	Linear Algebra	3
MATH 723	Differential Equations	3
MATH 726	Numerical Differential Equations I	3
PHYS 503	Mechanics	4
PHYS 506	Thermal Physics and Statistical Mechanics	3
POLI 760	American Government and Politics	3
POLI 774	The Public Policy Process	3
POLI 777	Policy Evaluation	3
STAT 515	Statistical Methods I	3
STAT 516	Statistical Methods II	3
STAT 518	Nonparametric Statistical Methods	3
STAT 519	Sampling	3
STAT 700	Applied Statistics I	3
STAT 701	Applied Statistics II	3

**Total Credit Hours** **201**

## Marine Science, Ph.D.

### Learning Outcomes

- Students will formulate clear and testable research hypotheses.
- Students will communicate orally to demonstrate their ability to present scientific results clearly, logically, and critically. For PhD students a higher level of communication is expected relative to the MS.
- Students will communicate in writing to demonstrate their ability to present scientific results clearly, logically, and critically. For PhD students a higher level of communication efficiency and clarity is expected relative to the MS.
- Students will apply scientific methodology, quantitative problem-solving, and experimental techniques within the core areas of marine science. PhD students must demonstrate a more detailed proficiency with these skill in order to demonstrate an ability to conduct independent research.
- Students will demonstrate clear understanding of the four core areas of Marine Science (Biology, Chemistry, Geology, and Physics). Each core area is a subfield of science. The PhD student is expected to have a more detailed grasp of issues in these core areas as they affect the underlying research questions and methodologies.

### Degree Requirements (60 Post-Baccalaureate Hours)

General requirements for degrees in Marine Science are the same as those established by the Graduate School. The Ph.D. program of study and other specific degree requirements are planned in consultation with the graduate student, the graduate student's advisory committee, the



Marine Science Graduate Studies Committee, and the Marine Science Program Director.

The Ph.D. degree requires the satisfactory completion of a minimum of 60 credit hours (including only 12 hours of 899, Dissertation Preparation) beyond the baccalaureate, or a minimum of 30 credit hours (including only 12 hours of 899) beyond the master's degree. The core courses (12 hours) are required unless exempted. Students must complete at least half of their credit hours, exclusive of 12 hours of 899, in courses numbered 700 and higher.

Ph.D. students must achieve and maintain an overall GPA of 3.00 on all courses taken for graduate credit and complete each of the core courses with a minimum grade of B.

The Ph.D. degree requires a research plan presentation, a comprehensive exam, a peer-reviewed publication, a written dissertation, and a dissertation defense.

Ph.D. students must achieve and maintain an overall GPA of 3.00 on all courses taken for graduate credit and complete each of the core courses with a minimum grade of B.

The Ph.D. degree requires a research plan presentation, a comprehensive exam, a peer-reviewed publication, a written dissertation, and a dissertation defense.

## Required Courses for Marine Science Program

The following courses are required for students in the Marine Science Program unless they are specifically exempted:

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<b>Total Credit Hours</b>		<b>12</b>

## Areas of Emphasis in Marine Science

A number of courses exist in various departments and colleges that enable students to specialize in a particular area of emphasis in marine science.

- Marine biology/Biological oceanography
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BIOL 570L	Principles of Ecology Laboratory	1
BIOL 651	Limnology	4
BIOL 722	Aquatic Bacteriology	3
BIOL 722L	Aquatic Bacteriology Laboratory	1
BIOL 727	Marine Phytoplankton	3

BIOL 728	Advanced Phycology	3
BIOL 729	The Biology of Fish	3
BIOL 730	The Biology of Fish	3
BIOL 731	Advanced Invertebrate Zoology I	3
BIOL 755	Quantitative Ecology	3
BIOL 759	Physiological Ecology	3
BIOL 760	Electron Microscopy	3
BIOL 760L	Electron Microscopy Laboratory	1
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CHEM 541L	Physical Chemistry Laboratory	2
CHEM 542	Physical Chemistry	3
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CHEM 729	Special Topics in Analytical Chemistry	3
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GEOG 551	Principles of Remote Sensing	3
GEOG 554	Spatial Programming	3
GEOG 563	Advanced Geographic Information Systems	3
GEOG 763	Seminar in Geographic Information Systems	3
GEOL 508	Palynology	3
GEOL 516	Sedimentology	4
GEOL 518	Surface to Subsurface Stratigraphy	3
GEOL 520	Isotope Geology and Geochronology	3
GEOL 546	Marine Geophysics	3
GEOL 570	Environmental Hydrogeology	3
GEOL 722	Aqueous Geochemistry	3
GEOL 750	Basin Analysis Seminar	3
GEOL 751	Carbonate Petrology	3
MATH 520	Ordinary Differential Equations	3
MATH 521	Boundary Value Problems and Partial Differential Equations	3
MATH 526	Numerical Linear Algebra	4
MATH 527	Numerical Analysis	3
MATH 544	Linear Algebra	3
MATH 723	Differential Equations	3
MATH 726	Numerical Differential Equations I	3
PHYS 503	Mechanics	4
PHYS 506	Thermal Physics and Statistical Mechanics	3
POLI 760	American Government and Politics	3

POLI 774	The Public Policy Process	3
POLI 777	Policy Evaluation	3
STAT 516	Statistical Methods II	3
STAT 518	Nonparametric Statistical Methods	3
STAT 519	Sampling	3
STAT 700	Applied Statistics I	3
STAT 701	Applied Statistics II	3

**Total Credit Hours** **198**

## School of Visual Art and Design

Department Website ([https://www.sc.edu/study/colleges\\_schools/artsandsciences/visual\\_art\\_and\\_design/](https://www.sc.edu/study/colleges_schools/artsandsciences/visual_art_and_design/))

Laura Kissel, *Director*

Andrew Graciano, *Associate Chair*

The School of Visual Art and Design draws upon the strengths of multiple artistic and aesthetic disciplines, newer media, and information technology to provide superior instruction in the visual and media arts. The school seeks to foster and maintain an intellectual and physical environment that encourages and supports research, scholarship, artistic expression, and creative production.

The School of Visual Art and Design offers programs of study leading to the degrees of Master of Arts, Master of Arts in Teaching, Interdisciplinary Master of Arts, and Master of Fine Arts. The school is divided into four areas: art education, art history, studio art, and media arts. These areas offer seven separate programs of study leading to advanced graduate degrees.

### Admission

Applicants for a graduate degree in the School of Visual Art and Design must have a baccalaureate degree from an approved and accredited college or university and meet all requirements for admission to both The Graduate School and the School of Visual Art and Design.

Applications deadlines are as follows:

- Studio Art (MFA and MA): January 15
- Art History (MA): March 1
- Media Arts (MA): March 1
- Art Education (MA, IMA, MAT): March 1 for fall admission and November 1 for spring admission.

### Applications Requirements

Requirements that are common to all programs are listed first, followed by program-specific items. Please be sure to fulfill all appropriate requirements.

For all programs:

1. completion of an online Graduate School application;
2. official transcripts from all institutions attended, including proof of baccalaureate degree from an accredited institution;
3. two letters of recommendation (at least one from a professor);
4. submission by applicants whose native language is not English of a satisfactory score on the TOEFL or the IELTS Intl. Academic Course Type 2 exam; or Pearson Test of English (Academic). The minimum acceptable score on the TOEFL is 80 (computer-based) or 550 (paper-

based); the minimum acceptable overall band score on the IELTS Intl. Academic Course Type 2 exam is 6.5; and the minimum Pearson Score is 59;

5. measles immunization form (if born after December 1956).

### Programs

- Art Education, M.A. (p. 161)
- Art Education, M.A.T. (P-12 Certification) (p. 242)
- Art History, M.A. (p. 163)
- Art Studio, M.A. (p. 164)
- Art Studio, M.F.A. (p. 164)
- Media Arts, M.A. (p. 165)

### Courses

#### ARTE 520 - Art for Elementary Schools (3 Credits)

Methods of teaching art to elementary and preschool children. Major emphasis will be given to relevant studio experiences.

#### ARTE 525 - Elementary Methods for K-12 Art Certification (3 Credits)

Curriculum, methods, and materials for teaching art to elementary and preschool children.

#### ARTE 525P - Elementary Methods for K-12 Art Certification Practicum (1 Credit)

Experiential practice and learning in elementary schools.

**Corequisite:** ARTE 525.

#### ARTE 530 - Art of Children (3 Credits)

A study of prominent theories of the artistic development of children from infancy through adolescence. Students will examine children's art from various age groups and apply theoretical explanations to these observations.

#### ARTE 540 - The School Art Program (3 Credits)

An introduction to art education as a profession. The history, curricular development, and current issues are examined. Students practice proven teaching techniques.

**Prerequisites:** ARTE 520.

#### ARTE 540P - Practicum in Art Education (1 Credit)

A sequence of supervised practicum experiences in middle and secondary school art education settings. Seminars and group discussions.

**Corequisite:** ARTE 540.

#### ARTE 550 - Incorporating New Media in Art Education (3 Credits)

Applications new media such as digital photography, sound, and other interactive hypermedia for the art classroom. Emphasis on integrating art production with art history, criticism, and aesthetics.

#### ARTE 560 - Secondary Methods for K-12 Art Certification (3 Credits)

Curriculum, methods, and materials for teaching art to secondary school students.

**Corequisite:** ARTE 560P.

#### ARTE 560P - Secondary Methods for K-12 Art Certification Practicum (1 Credit)

Experiential curriculum, methods, and materials for teaching secondary schoolchildren.

**Corequisite:** ARTE 560.

#### ARTE 565 - Field Experience Seminar (3 Credits)

**Corequisite:** EDSE 471.

**ARTE 595 - Art Education Workshop (1-6 Credits)**

A workshop especially for teachers and prospective teachers, featuring practical art experiences and projects for elementary and secondary school. Topic varies by title.

**ARTE 701 - Seminar in Art Education (3 Credits)**

Research methods used in art education and related areas.

**ARTE 702 - Problems in the Teaching of Art (3 Credits)**

Problems in teaching a discipline-based approach to art education; examination of the lives and works of famous artists and production of teaching materials.

**ARTE 703 - Issues and Trends in Art Education (3 Credits)**

Subject-centered approach to art history; the interrelationship of art and society, and the significance of art in social change.

**ARTE 705 - Program Development in Art (3 Credits)**

Comprehensive studies of curriculum designs and methods, methods and technologies from modernist to postmodernist assumptions in elementary and high school art education programs.

**ARTE 725 - Elementary Pedagogy Methods for Art Instruction (3 Credits)**

Art methods for elementary schools.

**Corequisite:** ARTE 725P.

**ARTE 725P - Elementary Pedagogy Methods for Art Instruction Practicum (1 Credit)**

Art methods for elementary schools practicum.

**Corequisite:** ARTE 725.

**ARTE 740 - Art Program for Schools (3 Credits)**

An introduction to the art education profession. Curriculum development and current issues are examined.

**Prerequisites:** ARTE 725 and ARTE 725P.

**Corequisite:** ARTE 741.

**ARTE 740P - Art Program for Schools Practicum (1 Credit)**

An introduction to the art education profession through practical experience.

**Prerequisites:** ARTE 725 and ARTE 725P.

**Corequisite:** ARTE 740.

**ARTE 750 - Interactive Technology for Art Teachers (3 Credits)**

Interactive technology in art programs using the computer as a creative tool in art education.

**ARTE 760 - Secondary Pedagogy Methods for Art Instruction (3 Credits)**

Secondary methods of art instruction.

**Corequisite:** ARTE 760P.

**ARTE 760P - Secondary Pedagogy Methods for Art Instruction Practicum (1 Credit)**

Practical experience in secondary methods of art instruction.

**Corequisite:** ARTE 760P.

**ARTE 765 - Art Education Internship Seminar (3 Credits)**

Seminar for art education internship. Students will be guided through practical field experience and the ADEPT evaluation system.

**Corequisite:** ARTE 771.

**ARTE 771 - Art Education Internship (12 Credits)**

Internship in art education.

**ARTE 790 - Problems in Art Education (3 Credits)**

May be repeated up to a maximum of nine hours.

**ARTE 799 - Thesis Preparation (1-9 Credits)****ARTH 501 - Methodologies of Art History (3 Credits)**

A seminar for art history majors and graduate students in the history and various methodologies of the discipline.

**ARTH 503 - Internship in Art History (1-6 Credits)**

Supervised experience in the field of art history, including museums, galleries, art dealers and auction houses. Requires a university internship contract and is subject to approval by advisor. May be repeated.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Internships

**ARTH 511 - Etruscan Art and Archaeology (3 Credits)**

Seminar in the art and civilization of the pre-Roman Etruscan peoples of Italy. Slide lectures, discussion sessions, and some examination of archaeological field methods and pottery classification.

**ARTH 514 - Topics in Ancient Art (3 Credits)**

Topic varies by title.

**ARTH 519 - Topics in Medieval Art (3 Credits)**

Topic varies by title.

**ARTH 520 - History of Renaissance Painting (3 Credits)**

An analysis of the paintings and painters of importance during the period of the Renaissance in Europe.

**ARTH 521 - History of Renaissance Sculpture (3 Credits)**

A survey of the major developments in the art of sculpture associated with the European Renaissance.

**ARTH 522 - History of Renaissance Architecture (3 Credits)**

European architecture and architectural theory during the 15th and 16th centuries.

**ARTH 523 - Florentine Art (3 Credits)**

The artistic development of Florence from the age of Giotto to that of Michelangelo as seen in the context of social and cultural developments.

**ARTH 524 - Topics in Renaissance Art (3 Credits)**

Topic varies by title.

**ARTH 525 - History of Baroque Painting (3 Credits)**

17th-century European painting.

**Prerequisites:** ARTH 106 or ARTH 325 or ARTH 326.

**ARTH 526 - History of Baroque Sculpture (3 Credits)**

17th and 18th-century European sculpture.

**Prerequisites:** ARTH 106 or ARTH 325 or ARTH 326.

**ARTH 527 - History of Baroque Architecture (3 Credits)**

The architecture of Europe in the 17th century with special attention to the major architects of Italy, France, Germany, and England. Topics to be included are: the church, the palace, the garden, and city planning.

**Prerequisites:** ARTH 106 or ARTH 325 or ARTH 326.

**ARTH 529 - Topics in 18th-Century Art (3 Credits)**

Topic varies by title.

**Prerequisites:** ARTH 106 or ARTH 327.

**ARTH 534 - Topics in 19th-Century Art (3 Credits)**

Topic varies by title.

**Prerequisites:** ARTH 106 or ARTH 330.

**ARTH 535 - History of Modern Painting (3 Credits)**

A detailed examination of 20th century painting.

**ARTH 536 - History of Modern Sculpture (3 Credits)**

The development of sculpture in the 19th and 20th centuries with special attention to contemporary tendencies.

**ARTH 537 - Topics in Modern Architecture (3 Credits)**

Topic varies by title.

**Prerequisites:** ARTH 106 or ARTH 337.

**ARTH 539 - Topics in Modern Art (3 Credits)**

Topic varies by title.

**ARTH 540 - History of American Painting (3 Credits)**

Important aspects of American painting with emphasis on the 19th and 20th centuries.

**ARTH 542 - History of American Architecture (3 Credits)**

A consideration of the evolution of architecture in America including aspects of town and city planning.

**ARTH 543 - The History of American Antiques and Decorative Arts (3 Credits)**

A survey of our material culture concentrating upon the evolution of styles.

**ARTH 544 - Topics in American Art (3 Credits)**

Topic varies by title.

**ARTH 545 - Special Topics in Modern Chinese Art (3 Credits)**

Topics in modern Chinese art selected for specialized study. May be repeated as content varies by title.

**ARTH 546 - Special Topics in Asian Art (3 Credits)**

Topics in Asian art selected for specialized study. May be repeated as content varies by title.

**ARTH 549 - Topics in Non-Western Art (3 Credits)**

Topic varies by title.

**ARTH 550 - Trends in Art History (3 Credits)**

A critical examination of the development of the discipline of art history and an analysis of its major trends and theoretical positions.

**ARTH 551 - Special Topics in Film and Media Studies (3 Credits)**

Intensive study of a specific topic in film and media studies. May be repeated as content varies by title.

**Prerequisites:** FAMS 240.

**Cross-listed course:** FAMS 511, MART 591

**ARTH 557 - History of Printmaking (3 Credits)**

Technical, aesthetical, and historical study of the development of printmaking.

**ARTH 560 - Museology I (3 Credits)**

The history and theory of museums and an introduction to museum practices in the setting of a multi-disciplinary institution. Practical experience provided through the various units of the University Museums.

**ARTH 561 - Museology II (3 Credits)**

Museum practices emphasizing the conservation, installation, and interpretation of the object in the context of an art museum. Practical experience provided through the Columbia Museum of Art.

**ARTH 562 - Art Conservation (3 Credits)**

History, theory, practices, ethics, and procedures of modern art conservation. Practical experience provided through the South Carolina Institute of Archaeology and Anthropology.

**ARTH 569 - Special Topics in Film and Media Histories (3 Credits)**

Intensive study of a specific topic in film and media history. May be repeated as content varies by title.

**Prerequisites:** FAMS 300.

**ARTH 590 - Topics in Art History (3 Credits)**

Topic varies by title.

**Prerequisites:** ARTH 105 or ARTH 106 or any ARTH 300.

**ARTH 599 - Independent Study (1-6 Credits)**

Independent study for advanced undergraduate majors and graduate students in art history. Approved independent study contract required for enrollment. May be repeated, but no more than 12 credits of Independent Study may be applied to the degree.

**ARTH 701 - Methodologies and Practices of Art History (3 Credits)**

Critical study of the discipline of art history and scholarly approaches to practices of the discipline.

**ARTH 720 - Problems in Renaissance Art (3 Credits)****ARTH 725 - Problems in Baroque and Rococo Art (3 Credits)**

**Prerequisite:** A course in baroque or 18th-century art.

**ARTH 730 - Problems in 19th-Century Art (3 Credits)****ARTH 735 - Problems in 20th-Century Art (3 Credits)****ARTH 737 - Contemporary Trends in Visual Arts (3 Credits)**

A history of art seminar focusing on contemporary trends in the visual arts.

**ARTH 739 - Special Topics: Problems in Modern Art (3 Credits)**

Selected problems in the visual arts from c.1780 to the present. May be repeated as content varies by title.

**ARTH 745 - Special Topics - Problem in Modern Chinese Art (3 Credits)**

Selected problems in modern Chinese art. May be repeated as content varies by title.

**ARTH 746 - Special Topics: Problems in Asian Art (3 Credits)**

Selected problems in Asian art. May be repeated as content varies by title.

**ARTH 769 - Problems in Film History (3 Credits)**

Topic varies with title.

**Prerequisites:** FAMS 240, or MART 270, or ENGL 565, or ENGL 566, or THEA 580.

**ARTH 790 - Problems in Art History (3 Credits)****ARTH 798 - Master's Project Planning (1-9 Credits)**

Independent final project in art history.

**ARTH 799 - Thesis Preparation (1-9 Credits)****ARTS 500 - Visual Meaning (4 Credits)**

The analysis, structuring, and production of individual works of art using traditional and non-traditional approaches.

**ARTS 501 - Art Business (3 Credits)**

Business practices for the studio artist. Contracts, portfolio preparation, promotion, alternate professions, museums, galleries, copyright, and shipping will be discussed.

**ARTS 510 - Painting I (6 Credits)**

BFA Painting Capstone course stressing focus on further development of individual approaches to painting culminating in a cohesive body of work and a written thesis defense.

**Prerequisites:** ARTS 210, ARTS 211, ARTS 310, and ARTS 311.

**ARTS 511 - Painting II (6 Credits)**

BFA Painting Capstone course focusing on further development of individual approaches to painting culminating in a BFA Senior Thesis Exhibition and defense.

**Prerequisites:** ARTS 510.

**ARTS 512 - Introduction to Watercolor (3 Credits)**

Introduction to traditional and experimental transparent watercolor technique. Encompasses field work at off campus locations.

**ARTS 513 - Advanced Watercolor (3 Credits)**

Advanced study of watercolor and water-based media with emphasis on individual creative expression. Encompasses field work at off campus locations.

**ARTS 514 - Workshop: Painting (4 Credits)**

Advanced study in various painting problems, content varies by title.

**ARTS 515 - Printmaking I (3 Credits)**

Further development of individual approaches to printmaking.

**Prerequisites:** ARTS 416.

**ARTS 516 - Capstone Printmaking I: Professional Practices (3-6 Credits)**

Professional development practices including preparing a portfolio and oral presentation of work, researching career options, and preparing applications for exhibition and funding opportunities.

**Prerequisites:** ARTS 215 and one ARTS 300 - ARTS 400 level print course.

**ARTS 517 - Capstone Printmaking II: Exhibition (3-6 Credits)**

Preparing for an exhibition.

**Prerequisites:** ARTS 215 and one ARTS 300 - ARTS 400 level print course.

**ARTS 519 - Workshop: Printmaking (3 Credits)**

Advanced investigation and analysis of various printmaking techniques.

Topic varies by title.

**ARTS 520 - Ceramics I (6 Credits)**

Further development of a personal approach to the ceramic process, supported by an investigation of ceramic history.

**Prerequisites:** ARTS 421.

**ARTS 521 - Ceramics II (6 Credits)**

Further development of a personal approach to the ceramic process, supported by an investigation of ceramic history.

**Prerequisites:** ARTS 520.

**ARTS 524 - Workshop: Ceramics (3 Credits)**

Advanced investigation and analysis of problems and methods in ceramics. Topics vary by title.

**ARTS 525 - Three-Dimensional Studies I (3-6 Credits)**

Personal concepts and expressions in various three-dimensional media.

**Prerequisites:** C or Better in ARTS 425 or ARTS 426.

**ARTS 526 - Three-Dimensional Studies II (3-6 Credits)**

Personal concepts and expressions in various three-dimensional media.

**Prerequisites:** C or better in ARTS 425 or ARTS 426.

**ARTS 529 - Workshop: Three-Dimensional Studies (3 Credits)**

Investigation and analysis of various three-dimensional concepts, processes, and techniques. Content varies by title.

**ARTS 530 - Drawing Capstone I (3-6 Credits)**

Further development of individual approaches to drawing with emphasis on intellectual and visual perception as content.

**Prerequisites:** ARTS 431.

**ARTS 531 - Drawing Capstone II (6 Credits)**

Further development of individual drawing with emphasis on intellectual and emotive approaches.

**Prerequisites:** ARTS 530.

**ARTS 532 - Advanced Life Drawing (3 Credits)**

Human anatomy and instruction in drawing and painting the model from life in a variety of media.

**Prerequisites:** ARTS 232 or ARTS 233.

**ARTS 535 - Fiber Arts I (3 Credits)**

Advanced study in the processes and materials of fiber arts.

**Prerequisites:** ARTS 436.

**ARTS 536 - Fiber Arts II (3 Credits)**

Advanced study in the processes and materials of fiber arts.

**Prerequisites:** ARTS 535.

**ARTS 537 - Papermaking (3 Credits)**

The art and techniques of handmade paper.

**ARTS 539 - Workshop: Fiber Arts (3 Credits)**

Advanced study in various technical aspects of fiber arts. Topic varies by title.

**ARTS 545 - Internship in Graphic Design (4 Credits)**

Work experience at a visual communication place of business.

**Prerequisites:** C or better in ARTS 346.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Internships

**ARTS 546 - Graphic Design II (3 Credits)**

Advanced individual projects in graphic design.

**Prerequisites:** ARTS 545.

**ARTS 555 - Jewelrymaking I (4 Credits)**

The development of individual directions in jewelrymaking.

**Prerequisites:** C or better in ARTS 456.

**ARTS 556 - Jewelrymaking II (3 Credits)**

The development of individual directions in jewelrymaking.

**Prerequisites:** ARTS 555.

**ARTS 558 - Crafts (3 Credits)**

Contemporary applications of traditional craft media, emphasizing the design and conceptual development of works of art.

**ARTS 559 - Workshop: Jewelrymaking (3 Credits)**

Advanced study in various technical aspects of jewelrymaking. Topic varies by title.

**ARTS 560 - Photography Thesis: Portfolio (6 Credits)**

Further development of individual approaches to photography.

**Prerequisites:** ARTS 460.

**ARTS 561 - Photography Thesis: Exhibition (6 Credits)**

Further development of individual approaches to photography.

**Prerequisites:** ARTS 461.

**ARTS 564 - Workshop: Photography (4 Credits)**

Advanced investigation and analysis of problems in photography. Topic varies by title.

**ARTS 570 - Visual Arts Computing (3 Credits)**

Advanced visual arts computing techniques on using software such as Photoshop, Studio Pro, and Netscape.

**Prerequisites:** ARTS 102.

**ARTS 590 - Video Art: Theory and Practice (3 Credits)**

Television as a medium; small format video systems are used in the creation of individual projects.

**ARTS 595 - Independent Study (3 Credits)**

Independent study for advanced undergraduate majors and graduate students in art studio. Approved independent study contract required for enrollment.

**ARTS 710 - Painting (3 Credits)**

A multi-level graduate painting class focusing on field work and studio practice through both individual tutorial and group exercises with a painting area faculty member. May be repeated up to a maximum of 15 hours.

**ARTS 715 - Printmaking (3 Credits)**

May be repeated up to a maximum of 15 hours.

**ARTS 720 - Ceramics (3 Credits)**

May be repeated up to a maximum of 15 hours.

**ARTS 725 - Three-Dimensional Studies (3 Credits)**

May be repeated up to a maximum of 15 hours.

**ARTS 730 - Drawing (3 Credits)**

May be repeated up to a maximum of 15 hours.

**ARTS 735 - Fiber Arts (3 Credits)**

May be repeated up to a maximum of 15 hours.

**ARTS 760 - Photography (3 Credits)**

May be repeated up to a maximum of 15 hours.

**Prerequisites:** ARTS 561.

**ARTS 790 - Special Topics in Art (3 Credits)**

Individually directed studies in art. Content varies with instructor. May be repeated up to a maximum of 9 hours.

**ARTS 795 - Independent Study (3 Credits)**

Independent study for advanced graduate students in art studio. Approved independent study contract required for enrollment.

**ARTS 799 - Thesis Preparation (1-9 Credits)**

May be repeated up to a maximum of 18 hours.

**Prerequisites:** MFA degree candidate status.

**ARTS 810 - Painting (3 Credits)**

A multi-level graduate level painting class that includes both group seminar and individual tutorial under the direction of a painting area faculty member. The course will address student's individual initiatives in context of issues in the medium. May be repeated up to a maximum of 18 hours.

**Prerequisites:** MFA degree candidate status.

**ARTS 815 - Printmaking (3 Credits)**

May be repeated up to a maximum of 18 hours.

**Prerequisites:** MFA degree candidate status.

**ARTS 820 - Ceramics (3 Credits)**

May be repeated up to a maximum of 18 hours.

**Prerequisites:** MFA degree candidate status.

**ARTS 825 - Three-Dimensional Studies (3 Credits)**

May be repeated up to a maximum of 18 hours.

**Prerequisites:** MFA degree candidate status.

**ARTS 830 - Drawing (3 Credits)**

May be repeated up to a maximum of 18 hours.

**Prerequisites:** MFA degree candidate status.

**ARTS 835 - Fiber Arts (3 Credits)**

May be repeated up to a maximum of 18 hours.

**Prerequisites:** MFA degree candidate status.

**ARTS 860 - Photography (3 Credits)**

May be repeated up to a maximum of 15 hours.

**Prerequisites:** MFA degree candidate status.

**ARTS 890 - Special Topics in Art (3 Credits)**

May be repeated up to a maximum of 9 hours.

**Prerequisites:** MFA degree candidate status.

**ARTS 896 - Project (3 Credits)**

Formulation of a proposal for a creative terminal project and initiation of that project.

**Prerequisites:** MFA degree candidate status.

**ARTS 897 - Project (3-6 Credits)**

Creation of creative terminal project.

**Prerequisites:** ARTS 896 and MFA degree candidate status.

**MART 521A - Media Writing Advanced: Screenwriting (3 Credits)**

Advanced study of screenwriting. Content varies by course title: 521A Screenwriting; 521B Feature Film; 521C Manga and Anime; 521D Television Writing. May be repeated as content varies by title up to 3 times.

**Prerequisites:** MART 321.

**MART 521B - Media Writing Advanced: Feature Film (3 Credits)**

Advanced study of feature film writing. Content varies by course title: 521A Screenwriting; 521B Feature Film; 521C Manga and Anime; 521D Television Writing. May be repeated as content varies by title up to 3 times.

**Prerequisites:** MART 321.

**MART 521C - Media Writing Advanced: Manga and Anime (3 Credits)**

Advanced study of Manga and Anime. Content varies by course title: 521A Screenwriting; 521B Feature Film; 521C Manga and Anime; 521D Television Writing. May be repeated as content varies by title up to 3 times.

**Prerequisites:** MART 321.

**MART 521D - Media Writing Advanced: Television Writing (3 Credits)**

Advanced study of television writing. Content varies by course title: 521A Screenwriting; 521B Feature Film; 521C Manga and Anime; 521D Television Writing. May be repeated as content varies by title up to 3 times.

**Prerequisites:** MART 321.

**MART 571A - Moving Image Advanced: Narrative (3 Credits)**

Narrative for motion picture.

**Prerequisites:** MART 371.

**MART 571B - Moving Image Advanced: Documentary (3 Credits)**

Documentary production.

**Prerequisites:** MART 371.

**MART 571C - Moving Image Advanced: Animation (3 Credits)**

Animation production.

**Prerequisites:** MART 371.

**MART 571D - Moving Image Advanced: Experimental (3 Credits)**

Experimental motion picture production.

**Prerequisites:** MART 371.

**MART 571E - Moving Image Advanced: Cinematography (3 Credits)**

Motion picture cinematography.

**Prerequisites:** MART 371.

**MART 571F - Moving Image Advanced: Sound for Motion Picture (3 Credits)**

Sound production for motion picture.

**Prerequisites:** MART 371.

**MART 581A - New Media Advanced: Site-based and Installation Art (3 Credits)**

Art and practice of site-based and installation art. Content varies by course title: 581A, Site-based and Installation Art; 581B, Mobile Platforms; 581C, Media Performance; 581D, Video Game Design; 581E, Sound Art. May be repeated as content varies by title up to 3 times.

**Prerequisites:** MART 380.

**MART 581B - New Media Advanced: Mobile Platforms (3 Credits)**

Art and practice of mobile platforms. Content varies by course title: 581A, Site-based and Installation Art; 581B, Mobile Platforms; 581C, Media Performance; 581D, Video Game Design; 581E, Sound Art. May be repeated as content varies by title up to 3 times.

**Prerequisites:** MART 380.

**MART 581C - New Media Advanced: Media Performance (3 Credits)**

Art and practice of media performance. Content varies by course title: 581A, Site-based and Installation Art; 581B, Mobile Platforms; 581C, Media Performance; 581D, Video Game Design; 581E, Sound Art. May be repeated as content varies by title up to 3 times.

**Prerequisites:** MART 380.

**MART 581D - New Media Advanced: Video Game Design (3 Credits)**

Art and practice of video game design. Content varies by course title: 581A, Site-based and Installation Art; 581B, Mobile Platforms; 581C, Media Performance; 581D, Video Game Design; 581E, Sound Art. May be repeated as content varies by title up to 3 times.

**Prerequisites:** MART 380.

**MART 581E - New Media Advanced: Sound Art (3 Credits)**

Art and practice of sound art. Content varies by course title: 581A, Site-based and Installation Art; 581B, Mobile Platforms; 581C, Media Performance; 581D, Video Game Design; 581E, Sound Art. May be repeated as content varies by title up to 3 times.

**Prerequisites:** MART 380.

**MART 590 - Special Topics in Media Arts (3 Credits)**

Selected topics in media arts. Course content varies and will be announced in the schedule of classes by title.

**MART 591 - Special Topics in Film and Media Studies (3 Credits)**

Intensive study of a specific topic in film and media studies. May be repeated as content varies by title.

**Prerequisites:** FAMS 240.

**Cross-listed course:** ARTH 551, FAMS 511

**MART 592 - Special Topics in Film and Media Histories (3 Credits)**

Intensive study of a specific topic in film and media history. May be repeated as content varies by title.

**Prerequisites:** FAMS 300.

**MART 593 - Special Topics in U.S. Film and Media (3 Credits)**

Intensive study of a specific topic in U.S. film and media studies. May be repeated as content varies by title.

**Prerequisites:** FAMS 240.

**MART 594 - Special Topics in Global Film and Media (3 Credits)**

Intensive study of a specific topic concerning films produced in a country other than the United States. May be repeated as content varies by title.

**Prerequisites:** FAMS 240.

**Cross-listed course:** FAMS 598, FORL 598

**MART 598 - Media Management and Distribution (3 Credits)**

Research in media management and distribution.

**Prerequisites:** MART 110 and MART 210.

**MART 701 - The Role of Research in Media Arts Practice (3 Credits)**

Approaches to research methods as these inform media arts and practice. Emphasis on the development of critical (e.g., theoretical, historical, social, cultural, etc.) engagement.

**MART 702 - Principles of Media Arts Practice (3 Credits)**

Application of theoretical concepts to media arts practice.

**Prerequisites:** MART 701.

**MART 721A - Research and Practice in Media Writing: Screenwriting (3 Credits)**

Advanced study of media storytelling in one or more of the following topics: 721A Screenwriting; 721B Feature Film; 721C Manga and Anime; 721D Television Writing.

**MART 721B - Research and Practice in Media Writing: Feature Film (3 Credits)**

Advanced study of media storytelling in one or more of the following topics: 721A Screenwriting; 721B Feature Film; 721C Manga and Anime; 721D Television Writing.

**MART 721C - Research and Practice in Media Writing: Manga and Anime (3 Credits)**

Advanced study of media storytelling in one or more of the following topics: 721A Screenwriting; 721B Feature Film; 721C Manga and Anime; 721D Television Writing.

**MART 721D - Research and Practice in Media Writing: Television Writing (3 Credits)**

Advanced study of media storytelling in one or more of the following topics: 721A Screenwriting; 721B Feature Film; 721C Manga and Anime; 721D Television Writing.

**MART 771A - Research and Practice in Media Arts Production: Narrative (3 Credits)**

Advanced study of moving image production in one or more of the following topics: 771A Narrative; 771B Documentary; 771C Animation; 771D Experimental; 771E Cinematography; 771F Sound for Motion Picture. Course may be taken 2 times.

**MART 771B - Research and Practice in Media Arts Production: Documentary (3 Credits)**

Advanced study of moving image production in one or more of the following topics: 771A Narrative; 771B Documentary; 771C Animation; 771D Experimental; 771E Cinematography; 771F Sound for Motion Picture. Course may be taken 2 times.

**MART 771C - Research and Practice in Media Arts Production: Animation (3 Credits)**

Advanced study of moving image production in one or more of the following topics: 771A Narrative; 771B Documentary; 771C Animation; 771D Experimental; 771E Cinematography; 771F Sound for Motion Picture. Course may be taken 2 times.

**MART 771D - Research and Practice in Media Arts Production: Experimental (3 Credits)**

Advanced study of moving image production in one or more of the following topics: 771A Narrative; 771B Documentary; 771C Animation; 771D Experimental; 771E Cinematography; 771F Sound for Motion Picture. Course may be taken 2 times.

**MART 771E - Research and Practice in Media Arts Production: Cinematography (3 Credits)**

Advanced study of moving image production in one or more of the following topics: 771A Narrative; 771B Documentary; 771C Animation; 771D Experimental; 771E Cinematography; 771F Sound for Motion Picture. Course may be taken 2 times.

**MART 771F - Research and Practice in Media Arts Production: Sound for Motion Picture (3 Credits)**

Advanced study of moving image production in one or more of the following topics: 771A Narrative; 771B Documentary; 771C Animation; 771D Experimental; 771E Cinematography; 771F Sound for Motion Picture. Course may be taken 2 times.

**MART 781A - Research and Practice in New Media Art: Site-based and Installation Art (3 Credits)**

Advanced study of new media art in one or more of the following topics: 781A Site-based and Installation Art; 781B Mobile Platforms; 781C Media Performance; 781D Video Game Design; 781E Sound Art. Course may be taken 2 times.

**MART 781B - Research and Practice in New Media Art: Mobile Platforms (3 Credits)**

Advanced study of new media art in one or more of the following topics: 781A Site-based and Installation Art; 781B Mobile Platforms; 781C Media Performance; 781D Video Game Design; 781E Sound Art. Course may be taken 2 times.

**MART 781C - Research and Practice in New Media Art: Media Performance (3 Credits)**

Advanced study of new media art in one or more of the following topics: 781A Site-based and Installation Art; 781B Mobile Platforms; 781C Media Performance; 781D Video Game Design; 781E Sound Art. Course may be taken 2 times.

**MART 781D - Research and Practice in New Media Art: Video Game Design (3 Credits)**

Advanced study of new media art in one or more of the following topics: 781A Site-based and Installation Art; 781B Mobile Platforms; 781C Media Performance; 781D Video Game Design; 781E Sound Art. Course may be taken 2 times.

**MART 781E - Research and Practice in New Media Art: Sound Art (3 Credits)**

Advanced study of new media art in one or more of the following topics: 781A Site-based and Installation Art; 781B Mobile Platforms; 781C Media Performance; 781D Video Game Design; 781E Sound Art. Course may be taken 2 times.

**MART 790 - Independent Study (3 Credits)**

Specialized research in media arts theory and/or practice.

**MART 795A - Media Arts Research: Media Theory (3 Credits)**

Advanced study in one or more of the following topics in the media arts: 795A Media Theory; 795B Media History; 795C Media Aesthetics; 795D Global Media Culture; 795E Media Management and Distribution. Course can be taken 2 times.

**MART 795B - Media Arts Research: Media History (3 Credits)**

Advanced study in one or more of the following topics in the media arts: 795A Media Theory; 795B Media History; 795C Media Aesthetics; 795D Global Media Culture; 795E Media Management and Distribution. Course can be taken 2 times.

**MART 795C - Media Arts Research: Media Aesthetics (3 Credits)**

Advanced study in one or more of the following topics in the media arts: 795A Media Theory; 795B Media History; 795C Media Aesthetics; 795D Global Media Culture; 795E Media Management and Distribution. Course can be taken 2 times.

**MART 795D - Media Arts Research: Global Media Culture (3 Credits)**

Advanced study in one or more of the following topics in the media arts: 795A Media Theory; 795B Media History; 795C Media Aesthetics; 795D Global Media Culture; 795E Media Management and Distribution. Course can be taken 2 times.

**MART 795E - Media Arts Research: Media Management and Distribution (3 Credits)**

Advanced study in one or more of the following topics in the media arts: 795A Media Theory; 795B Media History; 795C Media Aesthetics; 795D Global Media Culture; 795E Media Management and Distribution. Course can be taken 2 times.

**MART 797 - Practicum in Media Arts (3 Credits)**

Field experience in the media arts combined with directed research.

**MART 798 - Project Research and Preparation (1-6 Credits)**

Development and completion of a creative media arts project grounded in theory and research. May be repeated twice for up to 6 hours.

**MART 799 - Thesis Research and Preparation (1-6 Credits)**

## Art Education, I.M.A.

The Interdisciplinary Master of Arts degree with a major in art education is designed for college graduates who already hold a professional certificate in art or who are academically certifiable by virtue of course work previously earned. Upon completion of the I.M.A. degree program, recipients will be eligible for a South Carolina Class I certificate in art. Major emphasis in this program is placed on course work in the teaching area.

## Learning Outcomes

- Students will demonstrate the ability to make art using two and three-dimensional materials appropriate for use in elementary and early childhood settings.
- Students will demonstrate the ability to make art using two and three-dimensional materials appropriate for use in secondary settings.
- Students will write an arts unit of instruction centered on relevant themes and demonstrates the ability to write learning outcomes that match assessment.
- Students will recall the kinds of assessment used in the elementary and secondary art classroom and demonstrate its use in the arts unit of instruction by creating various assessment tools.
- Students will recall various teaching strategies used for challenging different kinds of learners and integrative learning.
- Students will develop effective communication skills while teaching in the Young Artist's Workshop program.
- Students will develop two thematically based lessons to teach during the Young Artist's Workshop program.
- Students will begin to master successful teaching skills and behavior indicated on the ADEPT assessment instrument.



- Students will examine, become knowledgeable of and begin to incorporate the Teacher Candidate Dispositions into their planning and teaching for the Young Artist's Workshop.
- Students will write curricula that incorporates ethnically diverse artists and meaningful themes into their Young Artist's Workshop lessons.
- Students will analyze children's artwork created as a result of their teaching in the Young Artist's Workshop program.
- Students will write critically thoughtful reflections of each lesson taught during the Young Artist's Workshop program.
- Students will observe or practice teaching in a school setting for at least 3 hours each week for a total of 30 hours.
- Students will record observations of teaching content, interaction patterns, classroom management, use of technology, use of time and space, and knowledge of students.
- Students will write a case study on the interaction between one K-12 students and the teacher.
- Students will create digital artworks by utilizing contemporary interactive technologies.
- Students will analyze and respond to assigned course readings in writing.
- Students write original scripts for their animation and video films.
- Students will develop curriculum outlines for integrating digital technologies in to the K-12 art curriculum.
- Student will conduct an independent research on a topic of new media and technologies and present it to class.
- Students will present assigned course readings to class.
- Students read and discuss research designs and effectiveness published in art education research journals.
- Students research, design, conduct, and write Historical research study.
- Students research, design, conduct, and write Aesthetic Response research study.
- Students research, design, conduct, and write Drawing Abilities and Methods research study.
- Students research, design, conduct, and write Ethnographic research study.
- Students research, design, conduct, and write Experimental/Quasi-Experimental research study.
- Students will discuss and examine specific disabilities, looking specifically at characteristics of specific disabilities, and accommodations applicable for the art classroom.
- Students read articles and chapters and respond to them verbally and in writing.
- Students will write multicultural thematic art units of instruction related to a specific ethnic group and region in the world. Students will include connections to traditional and contemporary artists from that specific region.
- Students will discuss and then select a specific challenging research issue, set up a research design, and write a graduate level paper that explores difficult content
- Student will examine relevant theories through class discussions and completion of reading responses.
- Students will write a theoretical midterm essay on a topic of choice.
- Students will develop a curriculum rationale within an art unit of instruction on a critical issue of choice.
- Students will develop a curriculum unit plan, and one lesson that on a critical issue of choice.
- Students will read contemporary art education research journals and book chapters and discuss innovative curriculum theories related to teaching in the K-12 art classroom.
- Students will engage in community based art education settings
- Students write a rationale for teaching a thematic curriculum in a community based setting
- Students write an art unit of instruction for a community based setting
- Students choose a major professor/advisor to guide the thesis study and writing.
- Students successfully complete and pass a thesis defense according to thesis requirements put forth by the Graduate School.

## Admissions

1. Submission of a digital portfolio of 20 recent art works reflecting the proposed major and minor areas of concentration.  
**Note:** The photographic quality of slides will affect the evaluation of work.
2. Successful applicants to the graduate programs in Art Education typically have an undergraduate GPA of 3.00 or higher on a 4.00 scale and acceptable scores on either the Miller Analogies Test (35 and above) or the GRE (total score of 170 and above). These numbers are provided as guidelines; meeting the minimum GPA and test scores does not guarantee admission. All parts of an application are carefully considered in admissions decisions.
3. Completion of a written diagnostic questionnaire.

## Degree Requirements (33 Hours)

The I.M.A. degree requires 33 hours of graduate-level course work with 9 credits in professional education, 21 credits in art and art education, and 3 credits in an elective course that addresses current issues and concerns of teachers. Candidates must also pass a written comprehensive examination.

## Art Education, M.A.

### Learning Outcomes

- Students will demonstrate the ability to make art using two and three-dimensional materials appropriate for use in elementary and early childhood settings.
- Students will demonstrate the ability to make art using two and three-dimensional materials appropriate for use in secondary settings.
- Students will write an arts unit of instruction centered on relevant themes and demonstrates the ability to write learning outcomes that match assessment.
- Students will recall the kinds of assessment used in the elementary and secondary art classroom and demonstrate its use in the arts unit of instruction by creating various assessment tools.
- Students will recall various teaching strategies used for challenging different kinds of learners and integrative learning.
- Students will develop effective communication skills while teaching in the Young Artist's Workshop program.
- Students will develop two thematically based lessons to teach during the Young Artist's Workshop program.

- Students will begin to master successful teaching skills and behavior indicated on the ADEPT assessment instrument.
- Students will examine, become knowledgeable of and begin to incorporate the Teacher Candidate Dispositions into their planning and teaching for the Young Artist's Workshop.
- Students will write curricula that incorporates ethnically diverse artists and meaningful themes into their Young Artist's Workshop lessons.
- Students will analyze children's artwork created as a result of their teaching in the Young Artist's Workshop program.
- Students will write critically thoughtful reflections of each lesson taught during the Young Artist's Workshop program.
- Students will observe or practice teaching in a school setting for at least 3 hours each week for a total of 30 hours.
- Students will record observations of teaching content, interaction patterns, classroom management, use of technology, use of time and space, and knowledge of students.
- Students will write a case study on the interaction between one K-12 students and the teacher.
- Students will create digital artworks by utilizing contemporary interactive technologies.
- Students will analyze and respond to assigned course readings in writing.
- Students write original scripts for their animation and video films.
- Students will develop curriculum outlines for integrating digital technologies in to the K-12 art curriculum.
- Student will conduct an independent research on a topic of new media and technologies and present it to class.
- Students will present assigned course readings to class.
- Students read and discuss research designs and effectiveness published in art education research journals.
- Students research, design, conduct, and write Historical research study.
- Students research, design, conduct, and write Aesthetic Response research study.
- Students research, design, conduct, and write Drawing Abilities and Method research study.
- Students research, design, conduct, and write Ethnographic research study.
- Students research, design, conduct, and write Experimental/Quasi-Experimental research study.
- Students will discuss and examine specific disabilities, looking specifically at characteristics of specific disabilities, and accommodations applicable for the art classroom.
- Students read articles and chapters and respond to them verbally and in writing.
- Students will write multicultural thematic art units of instruction related to a specific ethnic group and region in the world. Students will include connections to traditional and contemporary artists from that specific region.
- Students will discuss and then select a specific challenging research issue, set up a research design, and write a graduate level paper that explores difficult content
- Student will examine relevant theories through class discussions and completion of reading responses.
- Students will write a theoretical midterm essay on a topic of choice.
- Students will develop a curriculum rationale within an art unit of instruction on a critical issue of choice.
- Students will develop a curriculum unit plan, and one lesson that on a critical issue of choice.
- Students will read contemporary art education research journals and book chapters and discuss innovative curriculum theories related to teaching in the K-12 art classroom.
- Students will engage in community based art education settings.
- Students write a rationale for teaching a thematic curriculum in a community based setting
- Students write an art unit of instruction for a community based setting
- Students choose a major professor/advisor to guide the thesis study and writing.
- Students successfully complete and pass a thesis defense according to thesis requirements put forth by the Graduate School.

## Admissions

### Required Documents

- Online Application through the Graduate School
- Official Transcripts
- Official GRE or MAT Score
- 2 Letters of Recommendation (at least one must be from a professor)
- Personal Statement
- Curriculum Vitae/Resume
- Teaching Certificate
- Portfolio: Please upload a digital portfolio of 20 images of recent work and an identifying list of works, as a single .pdf document

Note: Successful applicants to the graduate programs in Art Education typically have an undergraduate GPA of 3.00 or higher on a 4.00 scale and acceptable scores on either the Miller Analogies Test (35 and above) or the GRE (total score of 170 and above). These numbers are provided as guidelines; meeting the minimum GPA and test scores does not guarantee admission. All parts of an application are carefully considered in admissions decisions.

## Degree Requirements (33 Hours)

The MA degree in art education may be completed with a thesis or without a thesis.

The **thesis option** requires passing a written comprehensive exam, a thesis defense, and a minimum of 33 hours of graduate coursework:

- Minimum 15 hours graduate-level art education
- 8-9 hours of graduate-level electives in art education, studio art, art history, or other discipline (as approved)
- Maximum of 9 hours of thesis coursework (ARTE 799: Thesis Preparation)
- The above must total a minimum of 33 hours

The **non-thesis option** requires passing a written comprehensive exam and a minimum of 33 hours of graduate coursework:

- Minimum 9 hours of graduate professional education courses
- Minimum 15 hours of graduate courses in Art Education
- 6-8 hours of graduate courses in Studio Art and/or Art History

- One 3-4 hour elective course at the graduate level (as approved)
- The above must total a minimum of 33 hours

## Art History, M.A.

### Learning Outcomes

- MA art history students evidence knowledge of major movements in Asian and Western art.
- MA art history students successfully demonstrate in writing the ability to apply the currently used methods in the history of art to the analysis of works of art and/or architecture.
- MA art history students demonstrate in writing the ability to conduct research to develop original ideas about the meanings of works of art or architecture using one or more of the methodologies currently in use in the profession.
- MA art history students demonstrate the ability to write and to speak persuasively and coherently about works of art or architecture using a sophisticated art historical vocabulary.
- MA art history students demonstrate a reading proficiency in a foreign language selected with advisor approval.
- Students successfully pursue their post-graduation career goals.

## Admissions

### Required Documents

- Online Application to the Graduate School
- Official Transcripts
- Official GRE or MAT Score
- Curriculum Vitae or Resume
- Cover Letter
- Writing Sample
- Personal Statement
- 2 or more Letters of Recommendation (at least one must be from a professor)

Note: Successful applicants to the graduate program in Art History typically have an undergraduate GPA of 3.00 or higher on a 4.00 scale and acceptable score on the GRE (160 verbal and 145 quantitative, or a combined minimum of 305). These numbers are provided as guidelines; meeting the minimum GPA and test scores does not guarantee admission. All parts of an application are carefully considered in admissions decisions.

### Degree Requirements (30 Hours)

All students accepted into the program must take the M.A. proficiency examination in the history of art during the first semester of their residence. The examination consists of the identification and discussion of certain major works of Western and Asian art from antiquity to the present. Students who fail the exam may retake it at the beginning of their second semester. Failure to pass the exam on the second attempt results in dismissal from the program. Faculty advisors are assigned to students by the end of their first semester. All art history majors are required to pass a reading proficiency test in a foreign language approved by the faculty advisor.

Students are required to complete 24 hours of course work, at least half at the 700-level or above, including ARTH 701 and at least one course in three of the four areas of core study offered by the faculty:

- Renaissance, Baroque, and 18th-Century Art and Architecture
- Modern and Contemporary European Art and Architecture
- American Art and Architecture
- Asian Art and Architecture

Courses may only fulfill the requirement for a single area. With the advisor's approval, up to 6 hours of electives may be fulfilled with courses outside of ARTH. Finally, students are required to complete a written thesis (ARTH 799, 6 hours) or master's project (ARTH 798, 6 hours). The thesis or master's project committee will consist of a director and two readers. Where appropriate, one of the two readers may be chosen from another department, school, or program. A 4-6 page thesis or master's project proposal must be approved by the committee. A formal oral defense of the finished written thesis or master's project will also be required. The oral defense of the thesis or master's project serves as the student's comprehensive assessment for the degree.

### Degree Requirements

1. Proficiency exam (completed in the first semester)
2. ARTH 701
3. At least one course in three of the four areas of core study
4. ARTH 799 or ARTH 798
5. Reading proficiency in an approved foreign language
6. At least half of approved courses at or above the 700 level

### Course Work (30 Hours)

#### Required (3 Hours)

Course	Title	Credits
ARTH 701	Methodologies and Practices of Art History	3
<b>Total Credit Hours</b>		<b>3</b>

#### Core Study (15 Hours)

15 hours selected from the following courses with at least one course in three of the four areas.

#### Renaissance, Baroque, and 18th-Century Art and Architecture

Course	Title	Credits
ARTH 520	History of Renaissance Painting	3
ARTH 521	History of Renaissance Sculpture	3
ARTH 522	History of Renaissance Architecture	3
ARTH 523	Florentine Art	3
ARTH 524	Topics in Renaissance Art	3
ARTH 525	History of Baroque Painting	3
ARTH 526	History of Baroque Sculpture	3
ARTH 527	History of Baroque Architecture	3
ARTH 529	Topics in 18th-Century Art	3
ARTH 557	History of Printmaking	3
ARTH 720	Problems in Renaissance Art	3
ARTH 725	Problems in Baroque and Rococo Art	3
ARTH 790	Problems in Art History	3

#### Modern and Contemporary European Art and Architecture

Course	Title	Credits
ARTH 534	Topics in 19th-Century Art	3
ARTH 535	History of Modern Painting	3
ARTH 536	History of Modern Sculpture	3
ARTH 537	Topics in Modern Architecture	3

ARTH 539	Topics in Modern Art	3
ARTH 569	Special Topics in Film and Media Histories	3
ARTH 590	Topics in Art History	3
ARTH 730	Problems in 19th-Century Art	3
ARTH 735	Problems in 20th-Century Art	3
ARTH 739	Special Topics: Problems in Modern Art	3
ARTH 769	Problems in Film History	3
ARTH 790	Problems in Art History	3

**American Art and Architecture**

Course	Title	Credits
ARTH 534	Topics in 19th-Century Art	3
ARTH 537	Topics in Modern Architecture	3
ARTH 539	Topics in Modern Art	3
ARTH 540	History of American Painting	3
ARTH 542	History of American Architecture	3
ARTH 543	The History of American Antiques and Decorative Arts	3
ARTH 544	Topics in American Art	3
ARTH 730	Problems in 19th-Century Art	3
ARTH 735	Problems in 20th-Century Art	3
ARTH 739	Special Topics: Problems in Modern Art	3
ARTH 769	Problems in Film History	3
ARTH 790	Problems in Art History	3

**Asian Art and Architecture**

Course	Title	Credits
ARTH 545	Special Topics in Modern Chinese Art	3
ARTH 546	Special Topics in Asian Art	3
ARTH 569	Special Topics in Film and Media Histories	3
ARTH 739	Special Topics: Problems in Modern Art	3
ARTH 745	Special Topics - Problem in Modern Chinese Art	3
ARTH 746	Special Topics: Problems in Asian Art	3
ARTH 769	Problems in Film History	3
ARTH 790	Problems in Art History	3

**Electives (6 Hours)**

Selected from ARTH or related disciplines, as approved by faculty advisor.

**Thesis (6 Hours)**

Course	Title	Credits
ARTH 799	Thesis Preparation	6
or ARTH 798	Master's Project Planning	

**Total Credit Hours** **6**

## Art Studio, M.A.

### Learning Outcomes

- All MA Studio Art graduate students will explore the development of art, within their own and other cultures, from pre-history to the present.
- All MA Studio Art graduate students will critically analyze aspects of the design and art making process and evaluate theories, philosophies, and research in the practice of the studio arts.

- All MA Studio Art graduate students will, through their artwork, demonstrate their competency of aesthetic literacy.
- All MA Studio Art graduate students will identify the processes, techniques, materials and technologies of art as they pertain to the areas of studio, media arts, and art education.

## Admissions

### Required Documents

- Online Application to the Graduate School
- Official Transcripts
- 2 Letters of Recommendation (at least one must be from a professor)
- Curriculum Vitae or Resume
- Personal Statement
- Portfolio: Please upload a digital portfolio of 20 images of recent work and an identifying list of works, as a single .pdf document

## Degree Requirements (30 Hours)

The Master of Arts degree with a major in studio art consists of 30 hours of graduate credit, including a thesis. Programs of study must include a minimum of 15 hours of graduate-level course work in art studio. A minimum of 9 hours of electives may be taken in art education, studio art, art history, or other disciplines. A comprehensive exam and a defense of one's thesis are also required.

## Art Studio, M.F.A.

### Learning Outcomes

- Student will demonstrate a sophisticated level of technical skill in their chosen discipline.
- Student will produce original artworks that effectively convey the conceptual content of their project.
- Student will demonstrate mastery of the historical and theoretical underpinnings of their project.
- Student will be able to effectively critique visual artwork including their own and the work of others.
- Student will effectively research write and speak about their studio practice and its historical and conceptual origins.

## Admissions

### Required Documents

- Online Application to the Graduate School
- Official Transcripts
- 2 Letters of Recommendation (at least one must be from a professor)
- Curriculum Vitae or Resume
- Personal Statement
- Portfolio: Please upload a digital portfolio of 20 images of recent work and an identifying list of works, as a single .pdf document. Works should reflect your proposed major and minor areas of concentration. (The photographic quality of images will affect the evaluation of your application.)

Note: Successful applicants to the graduate programs in Studio Art typically have an undergraduate GPA of 2.50 or higher on a 4.00 scale. This number is provided as a guideline; meeting the minimum GPA does not guarantee admission. All parts of an application are carefully considered in admissions decisions.

## Degree Requirements (60 Hours)

The University of South Carolina offers the MFA degree program in Art Studio. The MFA degree provides the opportunity for professional growth and mastery of skills by requiring students pursue major and minor areas of concentration from among the following subject areas: drawing, painting, printmaking, photography, ceramics, and/or sculpture (3-D studies). Completion of the degree primarily affirms a candidate's mastery of studio production in their major and minor areas of concentration. Additionally, through competitively assigned assistantships, candidates may develop professional competency in the teaching of studio art at the college and university level. The MFA degree requires a minimum of 60 hours of graduate level course credit:

- 33 hours art studio-to include 18 hours in the major area of concentration, 9 hours in the minor area of concentration, and 6 hours of Art Studio electives.
- 12 hours from art history, theory, criticism, and/or art education.
- 6 to 9 hours of the MFA Project (ARTS 896 and ARTS 897), including a written proposal and project documentation, and oral defense.
- 6 to 9 hours of graduate electives.

All MFA candidates are also required to complete a first semester critique with the Art Studio faculty. The critique is non-evaluative, allowing for open discussion of the student's work produced during the semester.

MFA candidates must then successfully complete and pass two progress reviews, one each at the completion of the second and third semesters. Each review intends to provide a forum for discussion and evaluation of work produced during the semester, to give students an opportunity for contact with studio faculty and to monitor the candidate's progress. The reviews are equivalent to master's comprehensive exams.

Failure to pass will result in a re-review at the end of the next semester by the entire faculty. Candidates who do not pass re-reviews may not continue in the program. Students will not be allowed to register for ARTS 896 prior to successfully completing the two reviews.

## Media Arts, M.A.

The Master of Arts (M.A.) degree in Media Arts provides advanced education in media theory, history, and artistic practice. The program prepares students to pursue media arts in a variety of contexts including independent, commercial, and academic. Students pursuing the degree will refine their creative arts practice in one or more of the following areas: moving image, writing, new media, and media theory. Recognizing the interdisciplinarity of the media arts, the program encourages students to foster interests in and affiliations with other disciplines across the university. Students applying to the program should have academic and/or work experience in a field related to media arts and a portfolio that exhibits a capacity for theoretical, historical, and/or cultural inquiry.

## Learning Outcomes

- Media Arts graduate students will demonstrate specialization and mastery appropriate to their developed program of practice.
- Media Arts graduate students will conceptualize, research and realize sophisticated and critically informed projects.
- Media Arts graduate students will submit and exhibit their artworks in appropriate external forums and proceedings.

- Media Arts graduate students will frame their own artwork in terms of current issues and theories in media culture.

### Admissions

### Required Documents

- Online Application to the Graduate School
- Official Test Scores (GRE or MAT)
- Official Transcripts
- Curriculum Vitae/Resume
- Personal Statement
- Link to online portfolio of media artworks
- 2 or more Letters of Recommendation (at least one must be from a professor)

### Notes:

1. The Master of Arts (M.A.) degree in Media Arts provides advanced education in media theory, history, and artistic practice. The program prepares students to pursue media arts in a variety of contexts including independent, commercial, and academic. Recognizing the interdisciplinarity of the media arts, the program encourages students to foster interests in and affiliations with other disciplines across the university. Students applying to the program should have academic and/or work experience in a field related to media arts and a portfolio that exhibits a capacity for theoretical, historical, and/or cultural inquiry.
2. Successful applicants to the graduate program in Media Arts typically have an undergraduate GPA of 3.00 or higher on a 4.00 scale and acceptable scores on either the Miller Analogies Test (35 and above) or the GRE (total score of 170 and above). These numbers are provided as guidelines; meeting the minimum GPA and test scores does not guarantee admission. All parts of an application are carefully considered in admissions decisions.

## Degree Requirements (30 Hours)

Candidates for the M.A. in Media Arts shall file a Program of Study during their second semester. The Program of Study outlines the student's program requirements and should be planned in consultation with a faculty adviser. In order to advance to the second year of coursework and thesis preparation, M.A. candidates must successfully pass a comprehensive examination. Comprehensive exams are scheduled at the culmination of the first year of course work.

Candidates for the M.A. in Media Arts take 30 hours of coursework, of which 6 hours are for the project/thesis project. Credit hours are to be distributed as follows:

### Required Courses (6 Hours)

*For all M.A. students.*

Course	Title	Credits
MART 701	The Role of Research in Media Arts Practice	3
MART 702	Principles of Media Arts Practice	3
<b>Total Credit Hours</b>		<b>6</b>

### Media Arts Coursework (15 Hours)

Course	Title	Credits
ARTS 560	Photography Thesis: Portfolio	6
ARTS 561	Photography Thesis: Exhibition	6

## MART 581

**Special Topics in Research and Practice in Media Writing**

Select one of the following: 3

MART 721A	Research and Practice in Media Writing: Screenwriting
MART 721B	Research and Practice in Media Writing: Feature Film
MART 721C	Research and Practice in Media Writing: Manga and Anime
MART 721D	Research and Practice in Media Writing: Television Writing

**Special Topics in Research and Practice in Media Arts Production**

Select one of the following: 3

MART 771A	Research and Practice in Media Arts Production: Narrative
MART 771B	Research and Practice in Media Arts Production: Documentary
MART 771C	Research and Practice in Media Arts Production: Animation
MART 771D	Research and Practice in Media Arts Production: Experimental

**Special Topics in Research and Practice in New Media Art**

Select one of the following: 3

MART 781A	Research and Practice in New Media Art: Site-based and Installation Art
MART 781B	Research and Practice in New Media Art: Mobile Platforms
MART 781C	Research and Practice in New Media Art: Media Performance
MART 781D	Research and Practice in New Media Art: Video Game Design

**Special Topics in Research Seminar in Media Arts**

Select one of the following: 3

MART 795A	Media Arts Research: Media Theory
MART 795B	Media Arts Research: Media History
MART 795C	Media Arts Research: Media Aesthetics
MART 795D	Media Arts Research: Global Media Culture

**Total Credit Hours** 24**Project/Thesis Preparation (6 Hours)**

Course	Title	Credits
MART 798	Project Research and Preparation	1-6
MART 799	Thesis Research and Preparation	1-6

**Total Credit Hours** 2-12**Media Theory and/or Creative Production (3 Hours)**

Must be taken outside of Media Arts to support the candidate's research in media theory and/or creative production.

**Sociology**

Department Website (<http://artsandsciences.sc.edu/socy/home/>)

Matthew E. Brashears, *Graduate Program Director*

**Overview**

The Department of Sociology offers a program of study that provides students with a thorough grounding in the theories and research methods of the discipline. Students with a B.A. or B.S. should apply to the Masters program only. Students with post-graduate degrees should apply to the Ph.D. program. Emphasis is placed on training students to apply theories and research methods while conducting empirical inquiry. Courses are taught, and students are mentored, by a faculty composed of nationally and internationally recognized scholars. The research specialties of the faculty span several areas. It is expected that the master's and dissertation research projects of students will be carried out in specialty areas that fall in the purview of the faculty's expertise. A description of the graduate program, including the specialty areas of each faculty member, is provided at [https://sc.edu/study/colleges\\_schools/artsandsciences/sociology/research/index.php](https://sc.edu/study/colleges_schools/artsandsciences/sociology/research/index.php) ([https://sc.edu/study/colleges\\_schools/artsandsciences/sociology/research/](https://sc.edu/study/colleges_schools/artsandsciences/sociology/research/)). Our graduates pursue careers in a wide range of academic and nonacademic fields. Graduates of the master's program often find employment in government agencies or in private firms that require professionals with research skills and experience in data management. Graduates of the doctoral program also work for government agencies and in private firms, but many accept appointments at universities and colleges.

**Admission**

Applications should be submitted to:

The Graduate School  
University of South Carolina  
901 Sumter St.  
Columbia, SC 29208

Baccalaureates should apply to the M.A. program. Additionally, applicants must send a letter describing their academic interests and an example of recent written work to Director of the Graduate Program Committee, Department of Sociology, University of South Carolina, Columbia, SC 29208. Other materials that will be helpful in evaluating the application may be included. Electronic applications are available at <http://www.gradschool.sc.edu>. Application deadlines are July 1 for the fall semester and November 15 for the spring semester. The Department of Sociology encourages students to begin their graduate studies during the fall semester. Applications completed by February 15 receive priority in decisions about assistantships.

The Graduate Program Committee evaluates applications and makes recommendations about admission to the dean of The Graduate School. A minimum GPA of 3.20 (on a 4.00 scale) for the last 60 semester hours of undergraduate work is required for admission to the master's program. For applicants with a master's degree, a minimum grade point average of 3.50 for all graduate work is required for admission to the doctoral program. GRE scores must be submitted with the application to The Graduate School. The department does not have a minimum GRE requirement, but scores approaching or exceeding 600 on the verbal and quantitative sections of the GRE and 4 on the analytical section increase the applicant's likelihood of being admitted and funded.

**Programs**

- Sociology, M.A. (p. 168)
- Sociology, Ph.D. (p. 169)

## Courses

### **SOCY 500 - Social Networks (3 Credits)**

Analysis of personal, social and organizational networks, their structural patterns, practical consequences, and principles of formation and change.

### **SOCY 502 - Political Sociology (3 Credits)**

Theory and research concerning the interrelationship between the polity and social structures.

### **SOCY 503 - Family and Social Stratification (3 Credits)**

An analysis of the contemporary American family emphasizing social stratification, mobility, occupations, and urbanization.

### **SOCY 504 - Social Stratification (3 Credits)**

Theory and research in social stratification.

### **SOCY 505 - Social Structures in Communities (3 Credits)**

Interrelationships of major social structures within communities.

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy

### **SOCY 506 - Social Organizations (3 Credits)**

Selected theoretical orientation, methodological procedures, and illustrative substantive issues pertaining to organizations.

### **SOCY 507 - Sociology of Social Control (3 Credits)**

Theories and issues relating to the definition of and response to crime and/or deviance.

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy

### **SOCY 509 - Advanced Social Structures (3 Credits)**

The analysis of core methodological and substantive issues in the study of social structures.

### **SOCY 510 - Life Course Demographics (3 Credits)**

People's demographic lives, structural contexts, and social change. Emphasis on the socioeconomic context in which lives unfold.

**Prerequisites:** SOCY 310.

### **SOCY 512 - Internal and International Migration (3 Credits)**

A survey of methods of analysis and research findings with emphasis on the social and economic concomitants of internal migration. Cultural, economic, and historical aspects of international migration. Effects of governmental policies on immigration and emigration. Examination of selected countries.

### **SOCY 514 - Urbanization (3 Credits)**

Analysis of urbanization using contemporary and historical data from developing societies. The demographic components of metropolitan growth and the changing structure of metropolitan communities.

### **SOCY 515 - Scientific Methods and Sociological Inquiry (3 Credits)**

Introduction to methods used to answer theoretical, empirical, and practical sociological questions, including scientific inquiry and research design.

### **SOCY 520 - Advanced Social Psychology (3 Credits)**

Advanced survey of social psychological perspectives and research on inequality, discrimination, power and status, cooperation and collective action, social norm and morality, networks and relationships.

### **SOCY 521 - Small Group Analysis (3 Credits)**

A behavioral analysis of small groups.

### **SOCY 522 - Power and Authority Structures in Groups (3 Credits)**

An exploration of theoretical perspectives, methodological approaches, and substantive issues in the study of interpersonal power and authority.

### **SOCY 523 - Social Processes of Deviance Control (3 Credits)**

A systematic analysis of the interrelation among the creation, involvement, recognition, and control of deviance.

### **SOCY 524 - Interpersonal Behavior in Families (3 Credits)**

Social psychological perspectives on family behavior.

### **SOCY 525 - Selves and Social Transaction (3 Credits)**

A systematic analysis of interrelationships among social acts, selves, roles, transactions, and language.

### **SOCY 540 - Sociology of Law (3 Credits)**

Review of theoretical and empirical developments in the sociology of law, including classical and modern sociological theories of law and selected sociological themes of law in various social settings.

### **SOCY 550 - Sociology of Science (3 Credits)**

Interrelationships among society, culture, and contemporary science.

### **SOCY 557 - Sociology of Education and Inequality (3 Credits)**

Advanced inquiry into the relationship between education and inequality.

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy

### **SOCY 560 - Advanced Sociological Theory (3 Credits)**

Theoretical perspectives on society and social behavior.

### **SOCY 561 - Integrative Research Experience (3 Credits)**

Design and conduct of original research using sociological research methods to meet Carolina Core Integrative course requirement for the BA and the BS.

**Prerequisites:** SOCY 101, SOCY 220 and SOCY 300-level or higher course.

**Experiential Learning:** Experiential Learning Opportunity

### **SOCY 562 - Advanced Sociological Research Methods (3 Credits)**

Advanced survey of methods used in sociological research.

### **SOCY 598 - Selected Topics (3 Credits)**

Readings and research on selected sociological topics. Course and content varies and will be announced in the schedule of classes by title.

**Prerequisites:** SOCY 101.

### **SOCY 599 - Advanced Independent Study (3-6 Credits)**

Advanced Independent study. Contract approved by instructor, advisor, and department chair is required.

**Prerequisites:** SOCY 101.

### **SOCY 698 - Special Topics (3 Credits)**

Reading and research.

**Prerequisites:** SOCY 101.

### **SOCY 710 - Theoretical Foundations of Sociology (3 Credits)**

Survey of theoretical and empirical works of sociological scholars.

### **SOCY 711 - Theory Construction (3 Credits)**

Presentation and study of the major theory groups in contemporary sociology, including functionalism, exchange, and consistency theories. Analysis of theoretical perspectives using criteria of logical consistency and adequacy of explanation. Techniques of building formal theory in sociology.

### **SOCY 719 - Selected Topics in Sociological Theory (3 Credits)**

Prerequisite: SOCY 710.

### **SOCY 720 - Survey of Research Methods (3 Credits)**

Survey of data-gathering techniques used in sociology including questionnaires, interviews, surveys, archival searches, experiments, and observational techniques.

**SOCY 721 - Selected Sociological Topics in Methodology (3 Credits)**

Intensive focus on selected social research methods having applications to the study of sociology.

**SOCY 729 - Selected Sociological Topics in Methodology (3 Credits)**

Prerequisite: SOCY 701.

**SOCY 730 - Statistical Analysis in Sociology (3 Credits)**

Introduction to statistical analysis in sociology, including bivariate and multiple regression, correlation and analysis of variance.

**Prerequisites:** SOCY 700.

**SOCY 731 - Topics in the Quantitative Analysis of Sociological Data (3 Credits)**

Recursive and non-recursive modelling, multiple regression using longitudinal data, event history analysis.

**Prerequisites:** SOCY 515.

**SOCY 732 - Topics in the Analysis of Social Networks (3 Credits)**

Selected topics in the theory, measurement, and analysis of social networks.

**SOCY 733 - Topics in Scaling and Measurement Methods (3 Credits)**

Selected topics in scaling and measurement of social science data emphasizing exploratory and descriptive techniques such as correspondence analysis, proximity scaling and contingency table representations.

**SOCY 734 - Experimental Methods in Sociology (3 Credits)**

Purposes, design and implementation of laboratory experiments in sociology.

**SOCY 739 - Selected Topics in the Quantitative Analysis of Sociological Data (3 Credits)**

Prerequisite: SOCY 700.

**SOCY 745 - Social Demography (3 Credits)**

Classical and contemporary theories and analytical approaches to demography.

**SOCY 746 - Sociology of the Family (3 Credits)**

Sociological theories of the family and social change.

**SOCY 749 - Selected Topics in Demography (3 Credits)**

Introduction to selected research methodologies having applications to the study of demography.

**Prerequisites:** SOCY 515.

**SOCY 755 - Social Structures and Inequality (3 Credits)**

Social inequality and stratification studied from a structural perspective, focusing on patterns in institutions that perpetuate inequality.

**SOCY 756 - Race, Class, Gender, and Sexuality (3 Credits)**

Historical and contemporary dimensions of social inequality centered in race, social class, gender, and sexuality.

**Cross-listed course:** PSYC 751

**SOCY 759 - Selected Sociological Topics in Social Structures (3 Credits)**

Prerequisite: SOCY 700.

**SOCY 765 - Contemporary Group Processes (3 Credits)**

Theories and problems in contemporary groups processes; primary emphasis on theories of status, power, justice, emotion, and legitimacy.

**SOCY 769 - Selected Sociological Topics in Social Psychology (3 Credits)**

Prerequisite: SOCY 700.

**SOCY 775 - Medical Sociology (3 Credits)**

Social and cultural meanings, determinants, and experiences of health and illness; organization of health care delivery system; impact of culture, roles, and relationships on patients and providers.

**SOCY 779 - Selected Topics in Medical Sociology (3 Credits)**

Topics from Medical Sociology theory and research. May be repeated as content varies by title.

**SOCY 780 - Sociology Proseminar (1 Credit)**

This seminar introduces graduate students in sociology to aspects of the sociological profession that are beyond the confines of sociological theory, methodology, and the discipline's substantive interests.

**SOCY 781 - Teaching Sociology (1-3 Credits)**

An exploration of college teaching of sociology, including goals, means, and challenges.

**Prerequisites:** SOCY 515.

**SOCY 790 - Special Topics: Reading and Research (3 Credits)****SOCY 791 - Special Topics: Reading and Research (3 Credits)****SOCY 799 - Thesis Research and Preparation (1-9 Credits)**

CL: 2020.

**SOCY 890 - Special Topics: Reading and Research (3 Credits)****SOCY 891 - Special Topics: Reading and Research (3 Credits)****SOCY 899 - Dissertation Preparation (1-12 Credits)**

CL: 2020.

## Sociology, M.A.

### Learning Outcomes

- Sociology MA students will demonstrate an understanding of the components of the theoretical explanations used in the varied substantive areas of the discipline. The theoretical explanations will be based on classical and contemporary theorists central to the discipline.
- Sociology MA students will demonstrate an understanding and ability to use the following types of statistical tools: 1. the distinction between descriptive and inferential statistics 2. causal modeling techniques 3. use of appropriate statistical analysis packages 4. sampling.
- Students will become familiarized with aspects of presentation of research results and findings to a professional audience.
- Students will learn to successfully complete research projects and prepare results for professional dissemination.
- Students will demonstrate an aggregate integrated mastery of sociological skills appropriate to an MA degree in their substantive area.

### Degree Requirements (30 Hours)

The M.A. requires a minimum of 30 credit hours beyond the B.A. or B.S. This includes 6 hours of thesis preparation. Consult the Sociology Graduate Student Handbook for further information (<http://www.cas.sc.edu/socy/GradHandbook.pdf>).

### Theoretical and Substantive Foundations (12 Hours)

Course	Title	Credits
SOCY 515	Scientific Methods and Sociological Inquiry	3
SOCY 560	Advanced Sociological Theory	3



Select 6 hours in one of four areas of department specialization (No more than six hours can be at the 500-level.):

Methods	6
Population & Health	
Institutions & Inequalities	
Social Psychology	
<b>Total Credit Hours</b>	<b>12</b>

### Research Methods and Statistics (6 Hours)

Course	Title	Credits
SOCY 562	Advanced Sociological Research Methods	3
SOCY 730	Statistical Analysis in Sociology	3
<b>Total Credit Hours</b>		<b>6</b>

### Electives (6 Hours)

Select from SOCY 500-SOCY 891. A maximum of 3 credit hours earned from other departments may be applied toward this requirement.

### Thesis and Research Preparation (6 Hours)

Course	Title	Credits
SOCY 799	Thesis Research and Preparation	6
<b>Total Credit Hours</b>		<b>6</b>

## Additional Information

Students must maintain a **B** average for all graduate courses taken at the University of South Carolina. Grades below **B** are generally unacceptable in graduate school. After completing 12 hours of graduate credit at the University, students whose cumulative GPA falls below 3.00 are dropped from the program without further review. Also, students receiving a second grade of **C+** or below are dropped from the program without further review.

For transfer students who do not hold a master's degree, some program requirements may be waived if the student has taken a course or its equivalent in graduate work elsewhere and earned a grade of **A** (excluding **A-**). However, such waivers may not exceed 6 credit hours to be applied toward the 30-hour requirement for the master's degree. Students requesting a waiver must inform the Graduate Program Committee in writing. The Graduate Program Committee evaluates the files of students to determine whether a waiver is warranted.

As students near the end of their course work, they select a thesis committee composed of at least three member's of the department's faculty. Faculty members have the right of refusal. The student chooses one faculty member to serve as director. The director of the Thesis Committee notifies the director of the Graduate Program Committee in writing of the composition of the Thesis Committee. The director of the Graduate Program Committee informs the chair of the department and the dean of The Graduate School of the composition of the Thesis Committee. Pursuant to the rules of The Graduate School, the department and The Graduate School must approve the Thesis Committee. Working with the Thesis Committee, the student prepares a thesis proposal. The Thesis Committee has the right to approve, request revisions, or reject the proposal. The committee also conducts an oral comprehensive examination to determine if the student has acquired the theoretical and methodological background required to complete the proposed research. For full-time students, this examination usually occurs late in the first semester of the second year of study. Students who fail the M.A.

comprehensive examination twice are removed from the program without further review.

If the Thesis Committee approves the proposal and the oral examination, all members sign a letter stating that the student has passed the comprehensive examination. The director of the Thesis Committee provides a copy of this letter to the chair of the department and gives the original letter to the director of the Graduate Program Committee. The original letter is placed in the student's file. The director of the Graduate Program Committee notifies the dean of The Graduate School that the student has passed the comprehensive examination.

After the student submits the thesis for evaluation, the Thesis Committee conducts an oral examination to determine if the proposed work has been successfully completed. The committee members have the right to approve, request revisions and further analysis to, or reject the thesis. The M.A. degree is granted only after the Thesis Committee approves the thesis, all members sign the title page, The Graduate School accepts the approved thesis, and all other requirements are met.

## Sociology, Ph.D.

### Learning Outcomes

- Students will recognize and be knowledgeable of the major theories and theoretical approaches of the discipline.
- Students will demonstrate an understanding and ability to use advanced statistical tools, and a range of research methods including but not limited to advanced causal modeling techniques, survey research, experimental methods, qualitative methods.
- PhD students should demonstrate a breadth and depth of knowledge in the student's specialty area.
- Students will become familiar with aspects of the profession not covered in traditional coursework to prepare them for active professional involvement in the discipline.
- Students should develop research skills through regular contact hours of research mentorship and collaborative research experience in the years prior to defense of their dissertation proposal.
- Students should have direct teaching mentorship as a course assistant or class instructor in the years leading to their PhD degree completion.
- Students will have depth and breadth in the discipline (depth contingent on their specialty area) and the necessary research skills to bring a research project to fruition.
- Students will have knowledge of the job market for Sociologists and interviewing skills.

### Degree Requirements (66 Post-Baccalaureate (minimum)/36 Post-Masters Hours)

The Ph.D. requires a minimum of 66 credit hours beyond the BA or BS. Students enrolled in the post-baccalaureate PhD program will concurrently work toward an MA while completing the requirements for the PhD. Thus, a minimum of 30 of the 66 hours of coursework will be applied to the MA.

Students entering the PhD program with an MA or MS in Sociology or a related field will be required to complete a minimum of 36 hours. Once enrolled in the program, the Graduate Program Committee and the student's academic advisor will assess what, if any, of required

courses and MA thesis work are satisfied by equivalent coursework and thesis research in the student's MA or MS program. Consult the Sociology Graduate Student Handbook for further information <http://www.cas.sc.edu/socy/GradHandbook.pdf>.

## Post Masters Requirements (36 Hours)

### Theoretical and Substantive Foundations (9 Hours)

9 hours in one of four areas of departmental specialization:

- Methods
- Population & Health
- Institutions & Inequities
- Social Psychology

(No more than 3 hours at the 500-level)

### Research Methods and Statistics (9 Hours)

Course	Title	Credits
SOCY 731	Topics in the Quantitative Analysis of Sociological Data	3

Select 6 additional hours in methods or statistics at 500-level or higher; a maximum of 3 hours at the 500-level may be applied toward the PhD. No more than 3 hours may be taken outside the department without permission.

**Total Credit Hours** 9

### Electives (6 Hours)

- A maximum of 3 hours at the 500-level may be applied toward the PhD
- A maximum of 3 hours may be earned from other departments

### Research Apprenticeship (3 Hours)

Course	Title	Credits
SOCY 899	Dissertation Preparation	1-12

**Total Credit Hours** 1-12

## Direct Admit Requirements for Students with a BA or BS (66 Hours)

### Theoretical and Substantive Foundations (15 Hours)

Course	Title	Credits
SOCY 515	Scientific Methods and Sociological Inquiry	3
SOCY 560	Advanced Sociological Theory	3

Select nine additional hours in one of four areas of departmental specialization (No more than 6 hours at the 500-level):

- Methods
- Population & Health
- Institutions & Inequalities
- Social Psychology

**Total Credit Hours** 15

### Research Methods and Statistics (15 Hours)

Course	Title	Credits
SOCY 562	Advanced Sociological Research Methods	3
SOCY 730	Statistical Analysis in Sociology	3
SOCY 731	Topics in the Quantitative Analysis of Sociological Data	3

Select six additional hours in methods or statistics at 500-level or higher; no more than 3 hours may be taken outside the department without permission	6
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**Total Credit Hours** 15

### Electives (18 Hours)

- A maximum of 6 hours at the 500-level may be applied toward the PhD
- A maximum of 9 hours may be earned from other departments

### MA Thesis Preparation (6 Hours)

Course	Title	Credits
SOCY 799	Thesis Research and Preparation	6

**Total Credit Hours** 6

### Dissertation Preparation (12 Hours)

Course	Title	Credits
SOCY 899	Dissertation Preparation	12

**Total Credit Hours** 12

## Additional Information

In accordance with The Graduate School's regulations, all students entering the Ph.D. program must pass a written Ph.D. candidacy examination. The candidacy examination is taken early in the first fall semester of residence. In passing the examination, the student is admitted to candidacy and may work toward meeting the remaining requirements that lead to the Ph.D. degree. Students who do not pass the candidacy examination will be expected to acquire the needed knowledge by attending courses beyond the Ph.D. requirements or by individual study. In either case, the examination must be taken again at the end of the following spring semester. Failing the candidacy examination a second time will result in removal from the program without further review. Administration of the examination is the responsibility of the Graduate Program Committee. For details, consult the department's Handbook for Graduate Students.

After advancement to candidacy, the Graduate Program Committee, acting as the Program Advisory Committee, oversees the subsequent progress of each doctoral candidate toward the Ph.D. degree. After advancement to candidacy, each doctoral candidate must file an approved program of study. This program of study should be completed before the end of a Ph.D. student's first year in the program.

Students must maintain a **B** average on all post-M.A. graduate courses taken at the University of South Carolina. After completing 12 hours of post-M.A. graduate credit at the University, students whose cumulative GPA falls below a 3.00 (on a 4.00 scale) are dropped from the program without further review. Also, students receiving a second post-M.A. grade of **C+** or below are dropped from the program without further review.

For a transfer entrant with an M.A. degree, some program requirements can be waived if the student has taken a course or its equivalent in graduate work elsewhere and earned a grade of **A** (excluding **A-**). However, such waivers do not reduce the minimum number of post-M.A. credit hours (36) that must be completed at the University for the Ph.D. Students requesting a waiver must inform the Graduate Program Committee in writing. The Graduate Program Committee evaluates the files of students to determine whether a waiver is warranted.

The Graduate School's foreign language competence requirement may be fulfilled by passing an examination that demonstrates a reading

knowledge of one foreign language. These examinations are normally administered by one of the foreign language programs at the University. English may be accepted as a foreign language for students whose native language is not English, with the approval of the dean of The Graduate School and the chair of the department. The foreign language requirement may also be met by completing a fifth research methodology course with a grade of **B** or higher.

## Area Requirements

In addition to successfully completing course work, three area requirements must be passed. Normally, completion of these requirements coincides with the completion of course work. All students must meet both the theory and the research methodology area requirements. Written theory and research methodology area examinations are given once a year, but students with excellent grades in the relevant courses earn a waiver from the examinations. All students must also pass a written and an oral examination in a research speciality of their choosing. Each student forms a Research Speciality Examination Committee made up of at least two faculty members from the Department of Sociology. Faculty members have the right of refusal. The student selects one member as chairperson of the committee. In consultation with the committee, each student prepares a list of appropriate readings. The length of the reading list will vary by research area, but as a guideline it should consist of about 25 books and 100 journal articles/book chapters. Reading lists must be approved by all members of the committee. The reading list should define a broad substantive area of sociological research that is roughly equivalent to a commonly recognized sociological specialty. Normally, students will conduct their dissertation research in the same speciality area that they choose for their research speciality examination. Guidelines for meeting the three area requirements are provided in the department's *Handbook for Graduate Students*.

## Dissertation

As students near the end of their course work, they select a Dissertation Committee composed of at least four members, one of whom is from outside the department. Faculty members have the right of refusal. The student chooses one faculty member to serve as director. The director of the Dissertation Committee notifies the director of the Graduate Program Committee in writing of the composition of the Dissertation Committee. A student's Dissertation Committee assumes the role of the Program Advisory Committee. Working with the Dissertation Committee, the student prepares a dissertation proposal. Once the proposal is submitted to the Dissertation Committee, a comprehensive examination is held. By the rules of the Graduate School, a Comprehensive Examination Committee is appointed by the chair of the department and approved by the dean of The Graduate School. Normally, the Dissertation Committee serves as the Comprehensive Examination Committee. The comprehensive examination includes a written component, usually the dissertation proposal, and an oral component. The content of the examination may include any topics for which the student is responsible. If the Comprehensive Examination Committee concludes that the student has successfully completed the oral examination and approves the proposal, all members sign a letter stating that the student has passed the comprehensive examination. The director of the Dissertation Committee provides a copy of this letter to the chair of the department and gives the original letter to the director of the Graduate Program Committee. The original letter is placed in the student's file. The director of the Graduate Program Committee notifies the dean of The Graduate School that the student has passed the comprehensive examination.

Students who fail the Ph.D. comprehensive examination twice are removed from the program without further review.

After passing the comprehensive examination, the student is expected to pursue dissertation research and writing. Once the student is prepared to defend the dissertation, a Dissertation Examining Committee is formed. By the rules of The Graduate School, the Dissertation Examining Committee is appointed by the chair of the department and approved by the dean of The Graduate School. This committee is composed of at least four members, one of whom is from outside the department. Normally, the Dissertation Committee serves as the Dissertation Examining Committee. In addition to reading the dissertation, the committee conducts an oral examination of the student. The committee members have the right to approve, request revisions and further analysis, or reject the dissertation. The Ph.D. is granted only after the Dissertation Examining Committee approves the dissertation, all members sign the title page, The Graduate School accepts the approved dissertation, and all other requirements are met.

## Southern Studies

Department Website (<http://artsandsciences.sc.edu/iss/>)

Walter B. Edgar, *Director*  
 Robert H. Brinkmeyer, *Director of Research*  
 Bob Ellis, *Assistant Director*  
 Tara F. Powell, *Assistant Professor*  
 Mindi Spencer, *Assistant Professor*  
 Jodi Skipper, *Post-Doctoral Fellow*  
 Walter Liniger, *Distinguished Lecturer*

The interdisciplinary minor in Southern Studies offers training in analytic methods and research skills designed to help students excel in their departmental fields of concentration and establish a lasting basis for independent exploration of the South.

## Courses

### SOST 500 - Topics in the American South (3 Credits)

Selected topics related to the study of the American South. Course content varies and will be announced in the schedule of classes by title. May be repeated for credit as topics vary.

## Statistics

Department Website (<http://www.stat.sc.edu/>)

Joshua Tebbs, *Chair*

Statistics plays a vital role in science, industry, business, and government. Competitive starting salaries and a promising job market make a career in statistics an excellent choice for those with mathematical talent, computer skills, and a desire to work with people. The Department of Statistics offers programs of study emphasizing a broad training in both applied and theoretical statistics, including statistical computing and the art of statistical consulting. The department houses the Statistical Laboratory, which offers statistical consulting services to clients throughout the University, government, and industry. The department offers programs of study leading to the Master of Science, Master of Applied Statistics, and Doctor of Philosophy degrees. It also offers the Post-Baccalaureate Certificate in Applied Statistics. Courses for the P.B.A.C.C. and M.A.S. programs are available within 24 hours anywhere in the world via video streaming.

## Admission

Requirements for admission to all graduate programs conform with general regulations of The Graduate School, including official test scores on the GRE, two letters of recommendation, and successful academic performance at an accredited baccalaureate institution. The GMAT is acceptable in lieu of the GRE for M.A.S. applicants. At least two semesters of calculus are prerequisite for admission to the M.S. and Ph.D. programs plus an additional semester of advanced calculus and a semester of linear algebra. Applicants for the M.A.S. program should have at least two semesters of calculus with a 3.0 GPA. Applicants for the M.S. and Ph.D. who have their materials in by January 15th are considered for financial support in the form of teaching or research assistantships. For more details, contact the department or go to <http://www.stat.sc.edu/curricula/grad/>.

## Programs

- Applied Statistics, Certificate (p. 175)
- Applied Statistics, M.A.S. (p. 176)
- Statistics, M.S. (p. 176)
- Statistics, Ph.D. (p. 177)

## Courses

### STAT 506 - Introduction to Experimental Design (3 Credits)

Techniques of experimentation based on statistical principles with application to quality improvement and other fields. Full and fractional factorial designs for factors at two levels; dispersion effects; related topics.

**Prerequisites:** C or higher in MATH 122 or MATH 141; or both MATH 111 or higher and any statistical class.

### STAT 509 - Statistics for Engineers (3 Credits)

Basic probability and statistics with applications and examples in engineering. Elementary probability, random variables and their distribution, random processes, statistical inference, linear regression, correlation and basic design of experiments with application to quality assurance, reliability, and life testing. May not be taken concurrently with or after STAT 513, STAT 515, or STAT 516. Not for C.A.S., M.A.S., or Ph.D. credit in Statistics.

**Prerequisites:** MATH 142 or equivalent.

### STAT 511 - Probability (3 Credits)

Probability and independence; discrete and continuous random variables; joint, marginal, and conditional densities; moment generating functions; laws of large numbers; binomial, Poisson, gamma, univariate and bivariate normal distributions.

**Prerequisites:** C or better in MATH 241.

**Corequisite:** MATH 241.

**Cross-listed course:** MATH 511

### STAT 512 - Mathematical Statistics (3 Credits)

Functions of random variables, order statistics, sampling distributions, central limit theorem, quality of estimators, interval estimation, sufficient statistics, minimum-variance unbiased estimator, maximum likelihood, large-sample theory, introduction to hypothesis testing.

**Prerequisites:** C or better in STAT 511 or MATH 511.

### STAT 513 - Theory of Statistical Inference (3 Credits)

Hypothesis testing, Neyman-Pearson lemma, likelihood ratio tests, power, the theory of linear models including multiple linear regression and ANOVA, the Chi-square goodness-of-fit test, Chi-square inference for contingency tables, Bayesian inference, and advanced topics including survival analysis (only if time permits).

**Prerequisites:** C or better in STAT 512.

### STAT 515 - Statistical Methods I (3 Credits)

Applications and principles of elementary probability, essential discrete and continuous probability distributions, sampling distributions, estimation, and hypothesis testing. Inference for means, variances, proportions, one-way ANOVA, simple linear regression, and contingency tables. Statistical packages such as SAS or R. May not be taken concurrently with or after STAT 509, STAT 513, or STAT 516. Not for CAS, MAS, MS, or PhD credit in Statistics.

**Prerequisites:** C or higher in MATH 122 or MATH 141; or both MATH 111 or higher and any statistics class.

### STAT 516 - Statistical Methods II (3 Credits)

Applications and principles of linear models. Simple and multiple linear regression, analysis of variance for basic designs, multiple comparisons, random effects, and analysis of covariance. Statistical packages such as SAS. Not for CAS, MAS, MS, or PhD credit in Statistics.

**Prerequisites:** C or higher in STAT 515, STAT 509, STAT 512, or equivalent.

### STAT 517 - Advanced Statistical Models (3 Credits)

Theory and applications of advanced statistical models. Includes implementation and assessment of generalized linear, nonlinear and nonparametric regression, mixed effect, repeated measures, multivariate regression, and spatial models.

**Prerequisites:** STAT 512 or STAT 516 or equivalent.

### STAT 518 - Nonparametric Statistical Methods (3 Credits)

Applications and principles of nonparametric statistics. Classical rank-based methods, and selected categorical data analysis and modern nonparametric methods. Statistical packages such as R.

### STAT 519 - Sampling (3 Credits)

Techniques of statistical sampling in finite populations with applications in the analysis of sample survey data. Topics include simple random sampling for means and proportions, stratified sampling, cluster sampling, ratio estimates, and two-stage sampling.

**Prerequisites:** C or higher in STAT 515, STAT 509, STAT 512, or equivalent.

### STAT 520 - Forecasting and Time Series (3 Credits)

Time series analysis and forecasting using the multiple regression and Box-Jenkins approaches.

**Prerequisites:** STAT 516 or MGSC 391.

**Cross-listed course:** MGSC 520

### STAT 521 - Applied Stochastic Processes (3 Credits)

An introduction to stochastic processes, including conditional probability, Markov chains, Poisson processes, and Brownian motion. Incorporates simulation and applications to actuarial science.

**Prerequisites:** C or higher in STAT 511.

**STAT 522 - Financial Mathematics I (3 Credits)**

Probability spaces. Random variables. Mean and variance. Geometric Brownian Motion and stock price dynamics. Interest rates and present value analysis. Pricing via arbitrage arguments. Options pricing and the Black-Scholes formula.

**Prerequisites:** C or better in MATH 241.

**Cross-listed course:** MATH 514

**STAT 523 - Financial Mathematics II (3 Credits)**

Convex sets. Separating Hyperplane Theorem. Fundamental Theorem of Asset Pricing. Risk and expected return. Minimum variance portfolios. Capital Asset Pricing Model. Martingales and options pricing. Optimization models and dynamic programming.

**Prerequisites:** C or better in MATH 514 or STAT 522.

**Cross-listed course:** MATH 515

**STAT 525 - Statistical Quality Control (3 Credits)**

Statistical procedures for process control including CUSUM and Shewhart Control Charts, and lot-acceptance sampling.

**Prerequisites:** STAT 509 or STAT 515 or MGSC 391.

**Cross-listed course:** MGSC 525

**STAT 528 - Environmental Statistics (3 Credits)**

Statistical analysis of environmental data. Review of multiple regression and ANOVA, nonlinear regression models and generalized linear models, analyses for temporally and spatially correlated data, and methods of environmental sampling.

**Prerequisites:** STAT 516.

**STAT 530 - Applied Multivariate Statistics and Data Mining (3 Credits)**

Introduction to fundamentals of multivariate statistics and data mining. Principal components and factor analysis; multidimensional scaling and cluster analysis; MANOVA and discriminant analysis; decision trees; and support vector machines. Use of appropriate software.

**Prerequisites:** C or higher in STAT 515, STAT 205, STAT 509, STAT 512, ECON 436, MGSC 391, PSYC 228, or equivalent.

**STAT 535 - Introduction to Bayesian Data Analysis (3 Credits)**

Principles of Bayesian statistics, including: one- and multi-sample analyses; Bayesian linear models; Monte Carlo approaches; prior elicitation; hypothesis testing and model selection; hierarchical models; selected advanced models; statistical packages such as WinBUGS and R.

**Prerequisites:** C or higher in STAT 512; or CSCE 582 [=STAT 582]; or both STAT 511 and either STAT 509 or STAT 515; or equivalent.

**STAT 540 - Computing in Statistics (3 Credits)**

An introduction to statistical packages such as R and SAS with special focus on data management and computing procedures such as Monte Carlo simulation.

**Prerequisites:** C or higher in STAT 515, STAT 509, STAT 512, or equivalent.

**STAT 541 - Advanced SAS Programming (3 Credits)**

Advanced programming techniques in SAS, including database management, macro language, and efficient programming practices.

**Prerequisites:** STAT 540.

**STAT 582 - Bayesian Networks and Decision Graphs (3 Credits)**

Normative approaches to uncertainty in artificial intelligence.

Probabilistic and causal modeling with Bayesian networks and influence diagrams. Applications in decision analysis and support. Algorithms for probability update in graphical models.

**Prerequisites:** CSCE 350, STAT 509, or STAT 515.

**Cross-listed course:** CSCE 582

**STAT 587 - Big Data Analytics (3 Credits)**

Foundational techniques and tools required for data science and big data analytics. Concepts, principles, and techniques applicable to any technology or industry for establishing a baseline that can be enhanced by future study.

**Prerequisites:** STAT 509, STAT 513, or STAT 515.

**Cross-listed course:** CSCE 587

**STAT 588 - Genomic Data Science (3 Credits)**

This course focuses on quantitative knowledge for interdisciplinary applications in genetics as well as hands-on experience in analyzing genetic data. In this course, students will have programming exercises in using analysis tools to conduct genome-wide analysis, annotation, and interpretation of genetic data using R/Bioconductor packages.

**Prerequisites:** C or better in STAT 201 or higher.

**Cross-listed course:** BIOL 588

**STAT 591 - Data Analysis for Teachers (3 Credits)**

Introduction to statistics for elementary, middle, and high school teachers. The fundamentals of data collection, descriptive statistics, probability, and inference with special focus on methods of teaching statistical reasoning. For M.A.T. (excluding mathematics) / M.Ed. / M.T. and nondegree credit only.

**Cross-listed course:** SMED 591

**STAT 599 - Topics in Statistics (1-3 Credits)**

Course content varies and will be announced in the schedule of courses by title.

**STAT 600 - Statistics for Applied Management (3 Credits)**

Introduction to data collection, descriptive statistics, and statistical inference with examples from hospitality, retail, sport, and entertainment management. Focus on selecting, implementing, and interpreting the appropriate statistical methods using software such as Excel and SPSS. Not for minor or degree credit in Mathematics or Statistics. Does not prepare students for STAT 516, STAT 518, STAT 519 or STAT 525.

**STAT 650 - AP Statistics for Teachers (3 Credits)**

A thorough study of the topics covered on the AP Statistics Examination. A non-calculus-based introduction, including descriptive and inferential one- and two-variable statistics, and emphasizing activities illustrating statistical thinking. Current secondary high school teacher certification in mathematics. For I.M.A./M.A.T. (excluding mathematics)/M.Ed./M.T. and nondegree credit only. Restricted to graduate students.

**STAT 700 - Applied Statistics I (3 Credits)**

Introduction to probability and the concepts of estimation and hypothesis testing for use in experimental, social, and professional sciences. One and two-sample analyses, nonparametric tests, contingency tables, sample surveys, simple linear regression, various statistical packages.

Not to be used for M.S. or Ph.D. credit in statistics or mathematics. Not to be used for M.S. or Ph.D. credit in statistics or mathematics.

**STAT 701 - Applied Statistics II (3 Credits)**

Continuation of STAT 700. Simple linear regression, correlation, multiple regression, fixed and random effects analysis of variance, analysis of covariance, experimental designs, some multivariate methods, various statistical packages. Not to be used for M.S. or Ph.D. credit in statistics or mathematics.

**Prerequisites:** STAT 700 or the equivalent.

**STAT 702 - Introduction to Statistical Theory I (3 Credits)**

Fundamental theory of statistics and how it applies to industrial problems. Topics include probability, random variables and vectors and their distributions, sampling theory, point and interval estimators, and application to the theory of reliability, regression, process control and quality issues. Not to be used for M.S. or Ph.D. credit in statistics.

**Prerequisites:** MATH 142.

**STAT 703 - Introduction to Statistical Theory II (3 Credits)**

Continuation of STAT 702. Topics include discussion of theoretical properties of point estimators and tests of hypotheses, elements of statistical tests, the Neyman-Pearson Lemma, UMP tests, likelihood ratio and other types of tests, and Bayes procedures in the decision process. Not to be used for M.S. or Ph.D. credit in statistics.

**Prerequisites:** STAT 702.

**STAT 704 - Data Analysis I (3 Credits)**

Primarily for graduate students in statistics and the mathematical sciences. Probability concepts, inferences for normal parameters, regression, correlation, use of computer statistical packages.

**Prerequisite or Corequisite:** STAT 712.

**STAT 705 - Data Analysis II (3 Credits)**

Continuation of STAT 704. Analysis of variance (fixed and random effects), analysis of covariance, experimental design, model building, other applied topics, and use of computer statistical packages.

**Prerequisites:** STAT 704 and STAT 712.

**STAT 706 - Experimental Design (3 Credits)**

Specialized experimental design:  $2n$  and  $3n$  factorials; fractional replication; confounding; incomplete block designs, including split-plot, split-block, and Latin square designs; general principles of design.

**Prerequisites:** STAT 701 or STAT 705.

**STAT 708 - Environmetrics (3 Credits)**

Statistical methods for environmental and ecological sciences, including nonlinear regression, generalized linear models, spatial analyses/kriging, temporal analyses, meta-analysis, quantitative risk assessment.

**Prerequisites:** STAT 701 or STAT 705 or BIOS 757.

**Cross-listed course:** BIOS 808

**STAT 709 - Environmetrics II (3 Credits)**

Theoretical underpinnings of environmetrics. Spatial statistics, temporal and longitudinal analysis, hierarchical modeling, and Bayesian inferences for environmental data.

**Prerequisites:** STAT 708 or BIOS 808; STAT 714.

**Cross-listed course:** BIOS 809

**STAT 712 - Mathematical Statistics I (3 Credits)**

Sample spaces, probability and conditional probability, independence, random variables, expectation, distribution theory, sampling distributions, laws of large numbers and asymptotic theory, order statistics, and estimation.

**Prerequisites:** advanced calculus.

**STAT 713 - Mathematical Statistics II (3 Credits)**

Further development of estimation theory and tests of hypotheses, including an introduction to Bayes estimation, sufficiency, minimum variance principles, uniformly most powerful and likelihood ratio tests, and sequential probability ratio tests.

**Prerequisites:** STAT 712.

**STAT 714 - Linear Statistical Models (3 Credits)**

A study of the general linear statistical model and the linear hypothesis. Topics include the multivariate normal distribution, distributions of quadratic forms, and parameter estimation and hypothesis testing for full-rank models, regression models, and less than full-rank models.

**Prerequisites:** STAT 513 and MATH 544 or STAT 712 or equivalent.

**STAT 715 - Nonlinear Statistical Models (3 Credits)**

Inference for general nonlinear parametric statistical models for univariate and multivariate response; linear and quadratic estimating equations; models for covariance structure; effects of model misspecification and robustness.

**Prerequisites:** STAT 713, STAT 714.

**STAT 716 - Selected Topics in Probability (1-3 Credits)**

Special topics in probability theory and stochastic processes not offered in other courses.

**STAT 718 - Selected Topics in Statistics (1-3 Credits)**

Special topics in statistics not offered in other courses.

**STAT 720 - Times Series Analysis (3 Credits)**

Stochastic properties, identification, estimation, and forecasting methods for stationary and nonstationary time series models.

**Prerequisites:** STAT 704 and STAT 512.

**STAT 721 - Stochastic Processes (3 Credits)**

Theory of stochastic processes, including branching processes, discrete and continuous time Markov chains, renewal theory, point processes, and Brownian motion.

**Prerequisites:** STAT 711 or STAT 712.

**STAT 730 - Multivariate Analysis (3 Credits)**

A survey of the theory and applications of the fundamental techniques for analyzing multivariate data.

**Prerequisites:** STAT 713.

**STAT 740 - Statistical Computing (3 Credits)**

A survey of current algorithms and software for solving fundamental problems of statistical computing with emphasis on computer generation of random variates.

**Prerequisites:** STAT 713 and knowledge of a computer programming language.

**STAT 750 - Response Surface Methodology (3 Credits)**

Methods for fitting (regression) response surfaces and interpreting them subject to random error. Includes designs and industrial process optimization methods.

**Prerequisites:** STAT 701 or STAT 705.

**STAT 761 - Reliability and Life Testing (3 Credits)**

The various statistical and probability models in reliability and life testing and inference procedures for such models, including life distributions, parametric and nonparametric inference methods, hazard and failure rate functions, plotting methods, analysis of mixtures, censoring.

**Prerequisites:** STAT 703 or STAT 713.

**STAT 770 - Categorical Data Analysis (3 Credits)**

Advanced methods for analysis of discrete data. Higher-order contingency tables, log-linear and other generalized linear models. Multivariate methods for matched pairs and longitudinal data.

**Prerequisites:** STAT 704 or BIOS 759.

**Cross-listed course:** BIOS 805

**STAT 771 - Applied Longitudinal Data Analysis (3 Credits)**

Modern methods for the analysis of repeated measures, correlated outcomes, and longitudinal data, including repeated measures ANOVA, generalized linear models, random effects, and generalized estimating equations.

**Prerequisites:** BIOS 757 or BIOS 758 or STAT 701 or STAT 705.

**Cross-listed course:** BIOS 770

**STAT 772 - Binary Dose Response Theory and Methods (3 Credits)**

Threshold, mass action, and target theory; empirical dose response functions; methods in current use among health science researchers.

**Prerequisites:** STAT 512.

**STAT 775 - Generalized Linear Models (3 Credits)**

Statistical theory and applications extending regression and analysis of variance to non-normal data. Encompasses logistic and other binary regressions, log-linear models, and gamma regression models.

**Prerequisites:** STAT 713 or STAT 513, and STAT 705 or BIOS 757.

**Cross-listed course:** BIOS 815

**STAT 777 - Statistics Phylogenetics and Molecular Evolution (3 Credits)**

Theory and applications of phylogenetics; estimation via Markov models, likelihood, distances and parsimony; hypothesis testing of evolutionary trees and parameters; related topics including molecular divergence time inference.

**Prerequisites:** B or better in MATH 241 or STAT 510.

**STAT 778 - Item Response Theory (3 Credits)**

Statistical models for item response theory, Rasch and other models for binary and polytomous data, and applications. Use of statistical software.

**Prerequisites:** EDRM 711 or PSYC 710 or STAT 701 or STAT 704.

**Cross-listed course:** EDRM 828

**STAT 790 - Seminar in Statistical Consulting (1 Credit)**

An exposure to the techniques of statistical consulting through discussion and analysis of actual statistical problems which occur in fields of application.

**Prerequisites:** STAT 700 or equivalent.

**STAT 791 - Practicum in Statistical Consulting (1 Credit)**

Experiences in actual statistical consulting settings; participation and critiques.

**Prerequisites:** STAT 790.

**STAT 798 - Independent Study (1-6 Credits)****STAT 799 - Thesis Preparation (1-9 Credits)**

CL: 2020.

**STAT 810 - Probability Theory I (3 Credits)**

Probability spaces, random variables and distributions, expectations, characteristic functions, laws of large numbers, and the central limit theorem.

**Prerequisites:** STAT 511, STAT 512, or MATH 703.

**Cross-listed course:** MATH 710

**STAT 811 - Probability Theory II (3 Credits)**

More about distributions, limit theorems, Poisson approximations, conditioning, martingales, and random walks.

**Cross-listed course:** MATH 711

**STAT 822 - Advanced Statistical Inference (3 Credits)**

The advanced theory of statistical inference, including the general decision problem; Neyman-Pearson theory of testing hypotheses; the monotone likelihood ratio property; unbiasedness, efficiency, and other small sample properties of estimators; asymptotic properties of estimators, especially maximum likelihood estimators; and general sequential procedures.

**Prerequisites:** STAT 713.

**STAT 823 - Large Sample Theory (3 Credits)**

Modes of convergence, limit theorems, and the asymptotic properties of estimators and tests.

**Prerequisites:** STAT 713.

**STAT 824 - Nonparametric Inference (3 Credits)**

The general theory of nonparametric statistics, including order statistic theory, theory of ranks, U-statistics in nonparametric estimation and testing, linear rank statistics and their application to location and scale problems, goodness-of-fit, and other distribution-free procedures.

**Prerequisites:** STAT 713.

**STAT 890 - Doctoral Seminar (3 Credits)**

For doctoral candidates.

**STAT 898 - Directed Readings and Research (1-12 Credits)**

CL: 2020.

**STAT 899 - Dissertation Preparation (1-12 Credits)**

For doctoral candidates.

## Applied Statistics, Certificate

The Post-Baccalaureate Certificate in Applied Statistics (PBACC) is designed to provide engineers and scientists with the modern data analytic tools needed for effective practice as a specialist in statistical methods.

Admission to the PBACC program typically requires a GRE score (verbal plus quantitative) of 300 or more and one upper-division or graduate statistics course with a B or better. Students currently enrolled in other graduate degree programs at USC are automatically eligible to pursue the certificate (with permission of their home department for concurrent enrollment) as long as they have taken the prerequisite calculus course.

## Learning Outcomes

- The PBACC recipient should be able to apply and interpret general statistical methods, including their implementation in standard statistical packages.
- The PBACC recipient should have the maturity and writing ability to plan, carry out, and report on a self-directed course project, such as though required for elective courses STAT 506, STAT 540, STAT 541, or STAT 706. These courses are not required for the PBACC but nearly every PBACC graduate takes at least one of these courses.

## Certificate Requirements (12 Hours)

The PBACC requires at least 12 semester hours of graduate credits in statistics, at least half of which must be courses at the 700-level or above

with the STAT designator, completed within a period of six years before the award of the certificate.

The 12 Hours must include the following:

### Basic Data Analysis (6 Hours)

Course	Title	Credits
STAT 700	Applied Statistics I (Or the equivalent)	3
STAT 701	Applied Statistics II (Or the equivalent)	3
<b>Total Credit Hours</b>		<b>6</b>

### Additional Courses (6 Hours)

- At least 6 Hours of additional courses must be selected with the approval of the graduate director or the director for part-time students.

Note: Up to 6 semester hours of approved statistics courses may be taken from other departments and/or by transfer credit. With the approval of the department, and subject to the regulations of The Graduate School, courses taken in a certificate program can be applied toward other graduate degrees.

## Applied Statistics, M.A.S.

The M.A.S. degree is geared toward persons who are currently working in a business, government, educational or industrial setting. While some theory is introduced, the focus is on applications of statistics and, in particular, how statistics can be used to improve quality in an organization or process.

Admission to the M.A.S. degree program requires a GRE quantitative score of at least 550 and a GRE verbal score of at least 400, or a comparable GMAT score, and at least two semesters of calculus with a 3.00 or higher GPA. The successful candidate will also have a cumulative undergraduate/graduate GPA of 3.0 or higher and two letters of recommendation.

### Learning Outcomes

- The MAS degree recipient should be able to apply and interpret general statistical methods, including their implementation in standard statistical packages.
- The MAS recipient should have a solid knowledge of basic mathematical statistics at the level needed to understand and apply general statistical methods. Specifically, at least 90% should meet or exceed expectations as specified in the rubrics.
- The MAS recipient should have the writing ability to successfully explain on paper standard statistical methods and analyses.

### Degree Requirements (30 Hours)

The degree requires at least 30 semester hours of approved course work built around a core of five courses:

#### Core Courses

Course	Title	Credits
STAT 700	Applied Statistics I	3
STAT 701	Applied Statistics II	3
STAT 702	Introduction to Statistical Theory I	3
STAT 703	Introduction to Statistical Theory II	3

STAT 540	Computing in Statistics	3
<b>Total Credit Hours</b>		<b>15</b>

### Electives

- The remaining 15 hours will consist of elective courses, of which at least 3 semester hours are at the 700-level. No more than 9 semester hours may be taken outside the STAT designator.

### Two-Part Comprehensive Exam

In addition to the 30 semester hours of course work, the MAS student must pass a two-part comprehensive exam. Part I is applied in nature and is based on required courses STAT 700-STAT 701. Part II is more theoretical and is based on required courses STAT 702-STAT 703. The two parts may be taken together or separately.

## Statistics, M.S.

The M.S. degree is designed to provide students with the necessary background for employment as a professional statistician in business, industry, or government and to build a solid foundation for students interested in the Ph.D. program. Considerable flexibility in program emphasis is possible through the selection of elective courses.

The profile of a successful M.S. applicant includes an average GRE verbal in the 65th or higher percentile and an average GRE quantitative ranking in the 80th or higher percentile with an undergraduate average GPA of 3.30 or higher. He/she will also have a strong math background including 3 semester sequence in calculus, linear algebra, and often real analysis.

### Learning Outcomes

- The M.S. recipient should have solid knowledge of the standard methods of statistical data analysis, including their implementation in standard statistical packages.
- The M.S. recipient should have solid knowledge of the foundational results of mathematical statistics at the level needed to utilize the standard statistical texts and applied journals.
- The M.S. recipient should have the ability to apply their statistical knowledge to substantial problems that extend beyond their course work.
- The M.S. recipient should have the ability to successfully communicate their statistical knowledge to statisticians and statistical consumers.

### Degree Requirements (33 Hours)

Students in the M.S. program may elect either the non-thesis or the thesis option. Both options require a total of 33 semester hours of approved course work built around a core of five three-credit courses. The remaining 18 credit hours are taken in electives.

#### Core Courses (15 Hours)

Course	Title	Credits
STAT 704	Data Analysis I	3
STAT 705	Data Analysis II	3
STAT 712	Mathematical Statistics I	3
STAT 713	Mathematical Statistics II	3
STAT 714	Linear Statistical Models	3
<b>Total Credit Hours</b>		<b>15</b>



## Thesis Option

Students who choose the thesis option may substitute 3 semester hours of thesis preparation for an elective.

Course	Title	Credits
STAT 799	Thesis Preparation	3
<b>Total Credit Hours</b>		<b>3</b>

## Additional Requirements

Non-thesis M.S. students are required to obtain a "Masters Pass" or "Ph.D. Pass" on the Ph.D. Qualifying Examination. For thesis-option students, the examination will be the oral presentation and defense of the thesis.

## Note

At least half of the elective credit hours satisfying the M.S. degree requirements must be at the 700-level or higher. Up to 9 credit hours may be taken outside of the STAT designator or transferred in from another accredited university with the approval of the Graduate Director.

Typically, the M.S. requires two full years (four major semesters) of study.

## Statistics, Ph.D.

The Ph.D. degree is designed to prepare the student to teach statistics at the collegiate level, to do independent research, and/or to work as a lead statistician in business or industry.

The profile of a successful Ph.D. applicant includes either a master's degree with excellent performance from an accredited institution, or post baccalaureate with an average GRE verbal in the 65th or higher percentile and an average GRE quantitative in the 80th or higher percentile with an average GPA of 3.30 or higher. He/she will also have a strong math background including 3 semester sequence in calculus, linear algebra, and often real analysis.

## Learning Outcomes

- The Ph.D. recipient should have solid knowledge of the advanced theory of statistics and probability.
- The Ph.D. recipient should have the ability to substantially add to the body of knowledge in the field in statistics.
- The Ph.D. recipient who desires a career in academia should have the ability to teach at the collegiate level.
- Doctoral students should complete all required coursework, pass the qualifying exam at the Ph.D. level, then propose, write, and defend their dissertation in a timely manner.

## Degree Requirements (63 Post-Baccalaureate Hours)

A total of 63 semester hours of approved course work built around a core of twelve three-credit courses. The remaining 27 credit hours are comprised of 3 hours of Doctoral seminar, 12 hours of Dissertation Preparation and 12 hours of elective courses.

### Core Courses (36 Hours)

Course	Title	Credits
STAT 704	Data Analysis I	3
STAT 705	Data Analysis II	3
STAT 712	Mathematical Statistics I	3

STAT 713	Mathematical Statistics II	3
STAT 714	Linear Statistical Models	3
STAT 721	Stochastic Processes	3
STAT 740	Statistical Computing	3
STAT 810	Probability Theory I	3
STAT 811	Probability Theory II	3
STAT 822	Advanced Statistical Inference	3
STAT 823	Large Sample Theory	3
STAT 824	Nonparametric Inference	3
<b>Total Credit Hours</b>		<b>36</b>

## Post Master's Degree Requirements

### Minimum of 48 hours

A minimum of 48 semester hours of approved course work built around a core of seven three-credit courses. The remaining 27 credit hours are comprised of 3 hours of Doctoral Seminar, 12 hours of Dissertation Preparation and 12 hours of elective courses. Some remedial coursework may be required by the Graduate Director.

### Core Courses

Course	Title	Credits
STAT 721	Stochastic Processes	3
STAT 740	Statistical Computing	3
STAT 810	Probability Theory I	3
STAT 811	Probability Theory II	3
STAT 822	Advanced Statistical Inference	3
STAT 823	Large Sample Theory	3
STAT 824	Nonparametric Inference	3
<b>Total Credit Hours</b>		<b>21</b>

### Doctoral Seminar (3 Hours)

Course	Title	Credits
STAT 890	Doctoral Seminar	3
<b>Total Credit Hours</b>		<b>3</b>

### Dissertation Preparation (12 Hours)

Course	Title	Credits
STAT 899	Dissertation Preparation	12
<b>Total Credit Hours</b>		<b>12</b>

Note: The doctoral dissertation must be written in conjunction with the dissertation preparation (STAT 899).

Up to 9 semester hours may be taken outside of the STAT designator or transferred in from another accredited university with the approval of the Graduate Director. Credit hours used in fulfilling requirements for a previous degree may not be transferred.

## Additional Requirements

The progression through the degree program involves three examinations: the admission-to-candidacy exam, usually taken after the first year of study; the comprehensive exam in the form of a dissertation proposal, usually completed near the end of required course work; and the dissertation defense.

# Theatre and Dance

Department Website (<http://www.cas.sc.edu/thea/>)

Stephanie L. Milling, Ph.D. , *Interim Chair*

The curricula in theatre arts are based on the belief that critical study, performance, and studio work are all necessary for the education of the theatre artist. Study of literature, theatre history, and theory deepens the artist's understanding of principles and perspectives. Likewise, the studio provides the necessary practical training for the artist, and productions become the laboratory for practice of new skills gained.

The production of plays is the principal means available for coordinating all the elements of theatre art. The play is the single experience in which the knowledge and insight gained from history, theory, and criticism are given substance by the arts of the playwright, director, actor, and designer. In this way the production program of the department is an integral component of the education of graduate students.

To excel in the practical disciplines of theatre, an individual's natural abilities must be developed through study combined with practice. Hence, while individual students with a high degree of natural talent are selected, it will be their ability to apply themselves with discipline and determination to the preparation and practice of classroom work that will lead to their final success in programs and in the profession.

An important aim of our graduate program is to produce theatre artists who have knowledge of representative plays from all periods of Western European theatre history and of the theoretical foundations of Western drama and the theatre arts. Students also have opportunities to explore non-western theatre. Graduates should be capable of applying that knowledge in performance and production work.

The department uses a combination of permanent faculty and visiting professionals to provide its graduate population with appropriate instructional experiences. The department also uses artists-in-residence to augment graduate instruction, play production, and the dance program.

This faculty serves graduate students in the M.A., M.A.T., and M.F.A. degree programs. With an attractive student-teacher ratio, the graduate program in theatre provides a number of forums in which experiences, ideas, and knowledge can be shared.

## Admissions

### Master of Arts, Master of Arts in Teaching

Applicants for the M.A. and M.A.T. degrees should hold a baccalaureate degree that includes a minimum of 24 semester hours in theatre, with grades indicating graduate ability. Applicants for the M.A.T. should submit satisfactory scores on the Miller Analogies Test. Applicants for the M.A. degree must submit satisfactory scores on the general section of the Graduate Record Examination and a recent writing sample. While there is no absolute minimum score required on the MAT or GRE, students with less than a 40 (MAT) or 1000 (GRE verbal and quantitative) usually find it difficult to complete the program and may need to justify their scores during the application process.

### Master of Fine Arts

Applicants for the M.F.A. degree should hold a B.F.A. or B.A. degree from an accredited institution with a major in theatre. Acceptance of an M.F.A. applicant, determined by the departmental admissions committee, will

be based upon academic records, letters of recommendation, interviews, and either the critical examination of appropriate portfolio materials or the audition.

## Programs

The Theatre and Dance Department offers the Theatre, M.A.T. (P-12 Certification) in conjunction with the College of Education.

- Theatre, M.A. (p. 181)
- Theatre, M.F.A. (p. 182)

## Courses

### DANC 500 - Selected Topics in Dance (1 Credit)

A series of courses, each lasting one-third of a semester. Topics and required courses are announced in the class schedule for each semester.

### DANC 573 - Dancer's Workshop (1 Credit)

Individual advanced training in movement, improvisation, flexibility, and precision in dance styles including modern and ballet.

**Prerequisites:** graduate standing or three credits in dance.

### DANC 577 - Dance Performance (3 Credits)

Rehearsal, choreographic analysis, and dance performance. All components of dance production—including music, costume, lighting, and scenery—will be considered.

**Cross-listed course:** PEDU 577

### DANC 586 - The Articulate Body (3 Credits)

Theoretical and experimental exploration of the major body systems and development movements to bring more articulation to the body and more awareness and physical ease in performance.

**Cross-listed course:** THEA 586

### DANC 599 - Special Topics in Dance (3 Credits)

Reading and research on selected topics. Course content varies and will be announced in the schedule of classes by title. May be repeated once as topics vary.

### THEA 500 - Selected Topics in Theatre (1 Credit)

A series of courses, each lasting one-third of a semester. Topics and **Prerequisites:** are announced in the class schedule for each semester.

### THEA 510 - Rendering Techniques for the Theatre (3 Credits)

Rendering techniques for the communication of concepts and mood in the design process.

### THEA 520 - Playwright's Workshop (3 Credits)

Principles and practice of playwriting. Writing, adapting, and revising plays. May be repeated with consent of department chair.

### THEA 522 - Drama in Education (3 Credits)

Comprehensive review of drama strategies, methods and pedagogical practices to be applied to non-drama learning contexts. Practical experience with the necessary skills, philosophies and techniques of drama in education.

### THEA 526 - Children's Theatre (3 Credits)

Special problems in producing plays for child audiences.

**Prerequisites:** THEA 170 and THEA 253.

### THEA 527 - Applied Theatre Arts (3 Credits)

Principles and practices of theatre-making within community contexts to address local issues and to provide aesthetic strategies for creative problem solving through theatre.

**THEA 529 - Theatre Management (3 Credits)**

Problems involved in organizing, administering, and promoting the non-professional theatre.

**THEA 530 - Period Styles for Wig and Hair Design (3 Credits)**

Research and execution of period styles for wigs, hair, and facial pieces as related to theatrical and media design.

**Prerequisites:** THEA 230 and THEA 550.

**THEA 531 - Theatre Graphics (3 Credits)**

Specialized graphic techniques used in the preparation of a theatrical production. Practice in the execution and interpretation of working drawings, perspective sketches, color renderings, scale models, etc.

**THEA 540 - Voice and Movement: Practice and Performance (3 Credits)**

A variety of vocal and movement techniques that apply to acting and coaching with special emphasis on the physical and vocal processes in performance.

**THEA 547 - Global/Contextual Issues in Theatre Education Practice and Performance (3 Credits)**

Survey and analysis of current drama teacher practice across international contexts in relationship to global, social and educational change.

**THEA 550 - History of Costume (3 Credits)**

A survey of clothing through the ages with emphasis on the dress of the actor in significant periods of theatrical activity. From ancient times to present day.

**THEA 552 - Stage Costume Pattern Drafting and Drawing (3 Credits)**

The principles of pattern making for costume construction using flat-pattern and draping techniques.

**THEA 553 - Advanced Stagecraft (3 Credits)**

Advanced principles and practices of stagecraft.

**Prerequisites:** THEA 253 or equivalent.

**THEA 554 - Performing Arts Safety (3 Credits)**

Study of health and safety hazards for actors, technicians, and audience members.

**THEA 555 - Scene Painting for the Stage (3 Credits)**

Techniques of scene painting. Application of principles of painting to the stage.

**THEA 556 - Stage Design (3 Credits)**

Survey of the history and principles of scene design. Assignments will involve drawings, watercolor sketches, and scale models.

**THEA 557 - Advanced Scenic Design (3 Credits)**

Advanced procedures and techniques of scenic design.

**Prerequisites:** THEA 556.

**THEA 558 - Draping for the Modern Silhouette (3 Credits)**

Apparel design through basic draping techniques on industry standard dress forms. Analysis of fit and design, problem solving and interaction of fabric characteristics with style features.

**Prerequisites:** B or better in THEA 551.

**THEA 559 - Introductory Methods for K-12 Theatre Certification (3 Credits)**

Developmental approaches to drama instruction in K-12 classroom settings.

**THEA 561 - History of the Theatre I (3 Credits)**

A survey of plays, playwrights, actors, production, and the physical development of theatres from the time of the Greeks to 1660; reading of representative plays required.

**THEA 562 - History of the Theatre II (3 Credits)**

A survey of plays, playwrights, actors, production, and the physical development of theatres from 1660 to the present; reading of representative plays required.

**THEA 563 - History of Modern Theatre (3 Credits)**

History of Western Theatre since the early 20th century. Students will be introduced to major figures, plays, and movements and explore influences from the broader culture on theatrical expression.

**THEA 565 - African American Theatre (3 Credits)**

The major movements, figures, plays, and critical strategies that have marked the development of African American theatre in the 19th, 20th, and 21st centuries.

**Cross-listed course:** AFAM 565, ENGL 565

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy, GLD: Professional and Civic Engagement Leadership Experiences

**THEA 567 - Dramatic Theory I (3 Credits)**

A survey of the major works of dramatic theory and criticism, with emphasis on theories of theatrical performance. from Aristotle through 18th-century neo-classicism.

**THEA 568 - Dramatic Theory II (3 Credits)**

A survey of the major works of dramatic theory and criticism, with emphasis on theories of theatrical performance from the 18th century to the present.

**THEA 569 - Dramaturgy (3 Credits)**

A study of dramatic structure as it relates to theatrical production. Emphasis on script reading and analysis. Production and new-works dramaturgy will be covered.

**THEA 570 - Advanced Acting I (3 Credits)**

Theory and practice in the development of a role and an understanding of the psychology of the audience-actor relationship.

**Prerequisites:** B or better in THEA 240 and THEA 372 and THEA 370.

**THEA 571 - Advanced Acting II (3 Credits)**

Technique of performing play scripts with heightened language and styles other than naturalism/realism. Some examples of genres that may be taught are Classical Greek, Elizabethan, absurdist.

**Prerequisites:** B or better in THEA 240 and THEA 372 and THEA 370.

**THEA 572 - Advanced Makeup for Theatre and Film (3 Credits)**

Makeup design for specific character types, prosthetics and three-dimensional makeup effects. Special attention to the process of sculpting and modeling for makeup prosthetics.

**Prerequisites:** THEA 230.

**THEA 575 - Rehearsal and Performance (3 Credits)**

An intensive laboratory course in theatrical and media performances.

**THEA 576 - Rehearsal and Performance (3 Credits)**

An intensive laboratory course in repertory theatre.

**THEA 577 - Special Topics in Physical Theatre (3 Credits)**

Research and performance training in selected topics related to physical theatre. Course content varies and will be announced in the schedule of classes by title. May be repeated as topics vary.

**THEA 578 - Play Direction I (3 Credits)**

A study of the principles, procedures and practice of stage direction, with the selection, analysis, casting, and rehearsal of a one-act play to be presented in the laboratory theatre.

**Prerequisites:** THEA 270, THEA 280, and 6 hours from 300 level or above.

**THEA 579 - Play Direction II (3 Credits)**

A continuation of THEA 578.

**Prerequisites:** THEA 578.

**THEA 581 - Film as Performance (3 Credits)**

Study and analysis of film production, performance, and aesthetics.

**THEA 582 - Costume Design (3 Credits)**

Theory and practice in the design of theatre costumes.

**THEA 583 - Advanced Practice in Sound Design (3 Credits)**

Advanced study in sound, production and design. Emphasis will be on mounting designs and refining design skills for Theatre, Music, and Media Arts students.

**THEA 585 - Design for Communications Media Production (3 Credits)**

The study and application of techniques in theatrical stagecraft, design, lighting, costuming, and makeup applicable to specialized fields of communication media.

**Prerequisites:** THEA 253, THEA 351.

**THEA 586 - The Articulate Body (3 Credits)**

Theoretical and experimental exploration of the major body systems and developmental movements to bring more articulation to the body and more awareness and physical ease in performance.

**Cross-listed course:** DANC 586

**THEA 587 - Film and Television Acting (3 Credits)**

Theory and practice of film and television acting.

**Prerequisites:** THEA 170.

**THEA 588 - Stage Light Design I (3 Credits)**

The interrelationship of stage lighting and other production elements. Design techniques, equipment, and script analysis. Laboratory work on department productions. Restricted to theatre majors or those having special permission of instructor.

**THEA 589 - Adv. Stage Lighting Des. II (3 Credits)**

Stage lighting equipment and design techniques. Laboratory work on departmental productions.

**THEA 599 - Special Topics in Theatre (3 Credits)**

Reading and research on selected topics. Course content varies and will be announced in the schedule of classes by title. May be repeated once as topics vary.

**THEA 701 - Research Methodology (1 Credit)**

Introduction to research methods, sources, and practices for graduate work in theatre and theatre studies. Concentration on preparing for paper writing and thesis production.

**THEA 710 - Graduate Design Studio (3 Credits)**

The collaborative process between directors and theatrical designers.

**THEA 720 - Dramatic Literature for Youth (3 Credits)**

This course is designed to expand pre-service theatre teachers' exposure to the canon of plays written for young audiences and actors. Students will gain insight into issues surrounding creating plays for young audiences.

**THEA 721 - M.F.A. Practicum, Technical Direction (1-6 Credits)**

A studio workshop for advanced study of theatre arts and crafts.

**Prerequisites:** admission into MFA program.

**THEA 721A - M.F.A. Practicum, Technical Direction (1-6 Credits)**

A studio workshop for advanced study of theatre arts and crafts.

**Prerequisites:** admission into MFA program.

**THEA 721B - M.F.A. Practicum, Management (1-6 Credits)**

A studio workshop for advanced study of theatre arts and crafts.

**Prerequisites:** admission into MFA program.

**THEA 721C - M.F.A. Practicum, Costuming (1-6 Credits)**

A studio workshop for advanced study of theatre arts and crafts.

**Prerequisites:** admission into MFA program.

**THEA 721D - M.F.A. Practicum, Lighting (1-6 Credits)**

A studio workshop for advanced study of theatre arts and crafts.

**Prerequisites:** admission into MFA program.

**THEA 721E - M.F.A. Practicum, Acting (1-6 Credits)**

A studio workshop for advanced study of theatre arts and crafts.

**Prerequisites:** admission into MFA program.

**THEA 721F - M.F.A. Practicum, Scenery and Properties (1-6 Credits)**

A studio workshop for advanced study of theatre arts and crafts.

**Prerequisites:** admission into MFA program.

**THEA 721G - M.F.A. Practicum, Directing (1-6 Credits)**

A studio workshop for advanced study of theatre arts and crafts.

**Prerequisites:** admission into MFA program.

**THEA 730 - Stage Management (3 Credits)**

The aim of this course is to train graduate students in the requirements of stage management production meetings, assisting the director, and running the show. Professional, community, and academic theatre will be covered.

**THEA 731 - Technical Drawing for the Theatre (3 Credits)**

Advanced training in the technique and practice of technical drawing for the theatre.

**THEA 741 - Advanced Voice Lab (1-3 Credits)**

Advanced training in vocal skills needed by actors. (A) Techniques of Berry and Linklater, (B) Technique of Skinner. May be repeated for a total of 15 hours.

**THEA 741A - Advanced Voice Lab (1-3 Credits)**

Advanced training in vocal skills needed by actors. Techniques of Berry and Linklater. Note: May be repeated for a total of 15 hours.

**THEA 741B - Advanced Voice Lab (1-6 Credits)**

Advanced training in vocal skills needed by actors. (A) Techniques of Berry and Linklater, (B) Technique of Skinner. Note: May be repeated for a total of 15 hours.

**THEA 752 - Advanced Costume Construction (3 Credits)**

Advanced procedures and techniques of drafting, draping, pattern making, and wig making. Fabrics, their selection and modification for stage use.

**THEA 754 - Theatrical Rigging and Mechanics (3 Credits)**

Traditional and modern techniques for solving problems from actual theatrical productions.

**Prerequisites:** THEA 553.

**THEA 755 - Advanced Scene Painting for the Stage (3 Credits)**

Advanced techniques in scene painting. Application of principles of painting to the stage.

**THEA 756 - Advanced Costume Design (3 Credits)**

Advanced procedures and techniques of costume design: includes color theory, fabric potentiality, theatrical use of line, mass, and color.

**THEA 757 - Problems in Theatre Practice I (3 Credits)**

Analysis of selected problems in theatrical design, technical execution, or performance techniques. May be repeated once for credit.

**THEA 758 - Problems in Theatre Practice II (3 Credits)**

Analysis of selected problems in theatrical design, technical execution, or performance techniques. May be repeated once for credit.

**THEA 759 - Design Motifs (3 Credits)**

Practical and research projects on identification, isolation, and selection of historic motifs for theatrical purposes.

**THEA 760 - Graduate Text Analysis (3 Credits)**

Analytical skills, a shared vocabulary, and techniques for interpreting the dramatic text for the purposes of staging and performance. For theatrical collaborators.

**THEA 761 - Studies in Theatre History (3 Credits)**

May be repeated as topics vary for a total of 12 hours.

**THEA 765 - Staging in the Non-Traditional Theatre (3 Credits)****THEA 770 - Problems in Acting, Rehearsal, and Performance (3 Credits)****THEA 771 - Problems in Acting, Rehearsal, and Performance (3 Credits)****THEA 773 - Performing in Period Plays I (3 Credits)**

A synthesis of literary, critical, historical, and acting problems of selected period pieces with public performance providing the laboratory for testing alternative solutions. Registration by audition only.

**THEA 774 - Performing in Period Plays II (3 Credits)**

A synthesis of literary, critical, historical, and acting problems of selected period pieces with public performance providing the laboratory for testing alternative solutions. Registration by audition only.

**THEA 775 - Advanced Methods in Drama Education (3 Credits)**

Focus on dispositions and experiences applicable to developing comprehensive theatre arts programs in K-12 schools.

**Prerequisites:** THEA 559.

**THEA 777 - Advanced Movement and Dance (1-3 Credits)**

Advanced training in movement skills needed by actors. May be repeated for a total of 15 hours.

**THEA 778 - Directorial Workshop I (3 Credits)**

Principles and practice of directing for the stage. The advanced study of the director's role in patterning the auditory stimuli for arena and proscenium theatres.

**THEA 779 - Directorial Workshop II (3 Credits)**

A continuation of THEA 778.

**Prerequisites:** THEA 778.

**THEA 782 - Professional Costume Design Practices I (3 Credits)**

Rendering techniques, script study, color, and textile applications, prepared for presentation.

**THEA 783 - Professional Costume Design Practices II (3 Credits)**

Complex design projects, advanced rendering techniques, and translation to stage.

**THEA 784 - Teaching Internship in Theatre I (3 Credits)**

A practical teaching experience in K-12 theatre classrooms consisting of a minimum of seven and a half to ten hours per week.

**THEA 785 - Teaching Internship in Theatre B (9 Credits)**

Practical experiences in observing, teaching lessons, and applying theory and student-centered approaches in order to implement K-12 theatre classroom strategies.

**Prerequisites:** THEA 784 and Acceptance to the Professional Program in Education and Internship as MAT Student.

**THEA 786 - Professional Scene Design Practices I (3 Credits)**

Production-related scene design problems and projects.

**Prerequisites:** THEA 557.

**THEA 787 - Professional Scene Design Practices II (3 Credits)**

Responsibilities of the professional scene designer; analysis of problems and preparation of projects.

**Prerequisites:** THEA 786.

**THEA 788 - Professional Stage Lighting Practices I (3 Credits)**

Large scale projects, such as musical theatre, ballet and multi-set plays, prepared with appropriate professional techniques for presentation and critique.

**Prerequisites:** THEA 589 or equivalent.

**THEA 789 - Professional Stage Lighting Practices II (3 Credits)**

Continuation of THEA 788, to include complex stage lighting problems as well as projects involving related lighting fields.

**Prerequisites:** THEA 788 or equivalent.

**THEA 790 - Professional Theatre Internship (3-9 Credits)**

CL: 2020.

**THEA 796 - Special Projects (1-3 Credits)****THEA 797 - Special Projects (1-3 Credits)****THEA 799 - Thesis Preparation (1-9 Credits)**

## Theatre, M.A.

This program is designed for those seeking preparation for the Ph.D. or M.F.A. degree as well as for experienced and certified secondary-school teachers who wish intensive academic course work in theatre.

### Learning Outcomes

- Students will demonstrate the ability to conduct in-depth analysis of theatre literature.
- Students will become proficient in methods of research and will demonstrate an ability to analyze texts and contexts by recognizing differences and comparisons for the purpose of generalizing the principles of the theatre art.
- Students will demonstrate an in-depth knowledge of theatre history and dramatic critical theory.

### Degree Requirements (31 Hours)

Candidates for the M.A. degree must take a minimum of 31 semester hours in addition to 3 to 6 hours of thesis work, distributed as follows:

Requirements	Credit Hours
History and Criticism	9-12
Research Methods	1
Critical Studies	6-9
Dramaturgy or Historiography	3

Seminars in Production	3
Electives	6

At least 21 hours must be elected in the Department of Theatre and Dance. Candidates must pass a comprehensive examination. A scholarly thesis is required.

## Theatre, M.F.A.

This degree program is intended primarily for those entering the profession of theatre.

### Learning Outcomes

- Students will demonstrate a comprehensive understanding of the dramatic form through the process of written text analysis, as well as written description and critical analysis of the personal process of the theatre performing artist.
- Acting students will demonstrate the ability to express artistic choices of dramatic action and character development through the written documentation and performance presentations in the department's theatre production program.
- Design students will demonstrate the ability to express artistic choices of production design in scenery, costumes, and lighting through the written documentation, oral presentations, and production presentations in the department's theatre production program.

### Degree Requirements (63 Hours)

It requires at least 63 hours of graduate credit and residency at the University of South Carolina. The M.F.A. degree may be taken with an emphasis in acting, directing, costume design, scene design or lighting design. Each student's program of courses will be determined by departmental guidelines with the agreement of the major advisor and will be formulated using three criteria: professional goals, past education and experience, and appropriate preparation for a thesis project and written comprehensive examination. All students in the program will complete a professional internship.

## Women's and Gender Studies

Department Website ([https://www.sc.edu/study/colleges\\_schools/artsandsciences/womens\\_and\\_gender\\_studies/](https://www.sc.edu/study/colleges_schools/artsandsciences/womens_and_gender_studies/))

Ed Madden, *Director*

The Women's and Gender Studies Program at the University of South Carolina promotes understanding of the diverse array of women's experiences through a complete program of teaching, research, and service to the University, the local community, the state, and the nation. Through its research mission, women's and gender studies reconceptualizes knowledge, creates new knowledge, and reinterprets existing knowledge through the lens of gender and the prism of diversity. Its teaching mission is to share this knowledge with students so they learn to think critically, to communicate effectively, to solve problems, and to interpret human experience. Emerging from an activist tradition, women's and gender studies serves university, local, state, and national communities by acting as a resource and guide for issues related to women and gender. Our research, teaching, and service missions interweave as we create, share, and apply the knowledge, skills, and values that promote the full participation of women in society.

## Other Courses Offered From Other Disciplines

Course	Title	Credits
ANTH/LING 747	Language as Social Action	3
EDCS 723	Understanding Sexual Diversity in Schools and Other Social Institutions	3
EDCS 724	Gender Diversity in Schools and Communities	3
EDFI 845	Seminar of Advanced Students in Foundations of Education	3-9
HPEB 513	Race, Ethnicity, and Health: Examining Health Inequalities	3
HPEB 621	Maternal and Child Health	3
NURS 768	Psychiatric Mental Health Nurse Practitioner: Legal, Ethical, and Role Transition	2
SPAN 769	Hispanic Women Writers	3

## Certificate of Graduate Study in Women's and Gender Studies

The Certificate of Graduate Study in Women's and Gender Studies is open to the graduate student seeking an interdisciplinary program in women's and gender studies in addition to the master's or doctoral degree that the student is pursuing in a traditional discipline. The program is also intended for postbaccalaureate working professionals such as psychologists, social workers, nurses, librarians, and teachers who wish to obtain information and skills in women's and gender studies to aid them in their professions.

### Admission

Applicants will need to submit a completed application together with official transcripts; a CV or resumé; two letters of recommendation; a Statement of Intent explaining their interest in Women's and Gender Studies and how it relates to their future plans; and a sample of your own scholarly writing, preferably on a Women's and Gender Studies topic. For more information, contact the Women's and Gender Studies Program.

### Programs

- Women's and Gender Studies, Certificate (p. 184)

### Courses

#### WGST 515 - Race, Gender, and Graphic Novels (3 Credits)

Representations of race and gender in comics with a special emphasis on the experiences of African Americans.

**Cross-listed course:** AFAM 515

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

#### WGST 525 - The Psychology of the Midlife Woman (3 Credits)

Biological, social, and psychological aspects of the midlife woman.

**Cross-listed course:** PSYC 525

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

**WGST 535 - Ecofeminism (3 Credits)**

An exploration of the connections between oppression of women and oppression of nature.

**Prerequisites:** 3 hours in philosophy beyond the 100 level.

**Cross-listed course:** PHIL 535

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy, GLD: Professional and Civic Engagement Leadership Experiences

**WGST 541 - Issues in Women's Health (3 Credits)**

An exploration of women's health and health care concerns from multiple perspectives.

**Cross-listed course:** NURS 541

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

**WGST 554 - Women and Crime (3 Credits)**

Impact of gender-based relations on crime and the criminal justice system.

**Cross-listed course:** CRJU 554

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy, GLD: Global Learning, GLD: Professional and Civic Engagement Leadership Experiences

**WGST 555 - Language and Gender (3 Credits)**

Approaches to gender and language emphasizing the social grounding of both; how language reflects sociocultural values and is a tool for constructing different types of social organization.

**Cross-listed course:** ANTH 555, LING 541

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy, GLD: Professional and Civic Engagement Leadership Experiences

**WGST 598 - Special Topics in Women's & Gender Studies (3 Credits)**

Course content varies and will be announced in the schedule of courses by title. May be repeated as content varies by title.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

**WGST 621 - Maternal and Child Health (3 Credits)**

Public health issues, social and behavioral science, policies, programs, and services related to maternal and child health in the United States and other countries.

**Cross-listed course:** HPEB 621

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

**WGST 701 - Feminist Theories and Epistemologies (3 Credits)**

Examination of feminist theories and epistemologies from diverse disciplines and intellectual movements, providing an overview of historical developments in feminist discourse. Emphasis on debates surrounding such concepts as gender, identity, difference, power, and embodiment.

**WGST 704 - Political Theory and Feminism (3 Credits)**

How contemporary feminist theory has responded to and reformulated traditional theories about the role and nature of women.

**Cross-listed course:** POLI 704

**WGST 705 - Race, Class, Gender and Sexuality (3 Credits)**

Historical and contemporary dimensions of social inequality centered in race, social class, gender, and sexuality.

**WGST 706 - Engendering Global Capitalism (3 Credits)**

The origins of global capitalism, the nature of money and debt, the roles of gender, race and class in social formations, and the relationship between production and reproduction.

**Cross-listed course:** ANTH 706

**WGST 708 - Women in American Politics (3 Credits)**

Impact of gender in American politics; elections, representation, rights, social movements, legal institutions, and public policy. Explores class, race, and sexuality issues within gender.

**Cross-listed course:** POLI 708

**WGST 709 - Women Explorers and Travelers (3 Credits)**

Examines in geographical and historical contexts the activities of various women travelers and explorers.

**Cross-listed course:** GEOG 709

**WGST 714 - Nutrition in Women's Health (3 Credits)**

An examination of the particular nutritional needs of women through the life cycle with emphasis on disease prevention and how nutrition is related to a woman's health and wellness.

**WGST 716 - Women's Studies Workshop (1 Credit)**

Selected topics in women's studies that are grounded in community concerns with an emphasis on individual action-research. May be repeated for a total of 2 hours credit.

**WGST 736 - Women, Work and Health: Global Perspectives (3 Credits)**

Intersections of women's work and women's health in diverse social, cultural, economic, geographic, and political contexts.

**WGST 737 - Topics in British Women Writers (3 Credits)**

Selected topics related to works by British women authors from various periods, regions, or genres. May be repeated for credit as topics vary.

**WGST 738 - Topics in American Women Writers (3 Credits)**

Selected topics related to works by American women authors from various periods, regions, or genres. May be repeated for credit as topics vary.

**WGST 750 - Psychology of Women (3 Credits)**

Women's diversity explored through research on personality, stereotypes, status and power, biological aspects, socialization, sexuality, relationships, mothering, work and achievement, violence against women, psychological disorders, and feminist therapies.

**Cross-listed course:** PSYC 750

**WGST 757 - African American Women in Nineteenth and Twentieth Centuries (3 Credits)**

This course will acquaint students with some of the secondary literature in African American women's history from the late nineteenth century through the twentieth century. The course examines the impact of race, gender, and class on the lives of black women and explores the historical relationship between African American women, work, family, community, and politics.

**Cross-listed course:** HIST 757

**WGST 764 - History of American Women (3 Credits)**

Selected research topics on the cultural, social, economic, and political roles and contributions of American women.

**Cross-listed course:** HIST 764

**WGST 767 - Feminist Perspective in Social Work Practice (3 Credits)**

Examines the application of feminist theories, concepts, and principles to social work practice. Assesses women's experiences in society and the impact of social, political, and economic structures. Investigates feminist interventions pertaining to individuals, families, organizations, communities, and the larger social environment.

**WGST 772 - Gender and Culture (3 Credits)**

Different cultures' ideas about gender and use of gender to organize social groups in a wide range of societies, including American subcultures.

**Cross-listed course:** ANTH 772

**WGST 790 - Directed Reading and Research (1-3 Credits)**

Directed research and reading in subjects to be individually assigned.

**WGST 796 - Special Topics in Women's Studies (3 Credits)**

A special topic focusing on an area within women's studies not usually covered in other graduate courses in women's studies.

**WGST 797 - Seminar in Women's Studies (3 Credits)**

A capstone seminar applying women's studies theories and methodologies to professional or discipline-based research projects.

**Prerequisites:** WGST 701 and WGST 702.

For more information, contact the women's studies graduate director at 803-777-4007.

## Women's and Gender Studies, Certificate

The Certificate of Graduate Study in Women's and Gender Studies is interdisciplinary and requires a total of 18 graduate credits within a six-year period in prescribed and elective courses.

### Learning Outcomes

- Students will demonstrate the ability to apply feminist theory and methods across the curriculum in their scholarly and/or community work.
- Students will demonstrate understanding of intersectionality and social difference across the curriculum in their scholarly and/or community work.
- Students will demonstrate an engagement with their profession and the local and larger community.

### Admission

Applicants will need to submit a completed application together with official transcripts; a CV or resumé; two letters of recommendation; a Statement of Intent explaining their interest in Women's and Gender Studies and how it relates to their future plans; and a sample of your own scholarly writing, preferably on a Women's and Gender Studies topic. For more information, contact the Women's and Gender Studies Program.

### Certificate Requirements (18 Hours)

#### Required Courses (9 Hours)

Course	Title	Credits
WGST 701	Feminist Theories and Epistemologies	3
WGST 797	Seminar in Women's Studies	3
WGST or cross-listed course		3
<b>Total Credit Hours</b>		<b>9</b>

#### Electives (9 Hours)

Each student must take at least 9 credits in advisor-approved elective courses.

Note: Courses taken as part of another graduate degree program may, if appropriate, be applied also to the certificate program. The Certificate of Graduate Study in Women's and Gender Studies is awarded upon completion of the student's approved program of courses.



# DARLA MOORE SCHOOL OF BUSINESS

Peter Brews, *Dean*

Mark Ferguson, *Senior Associate Dean, Academics and Research*

Kendall Roth, *Senior Associate Dean, International Programs and Partnerships*

Janice Bass, *Associate Dean, Undergraduate Programs*

Deborah Hazzard, *Associate Dean for Diversity and Inclusion*

Mark Cecchini, *Associate Dean, Executive Development*

Satish Jayachandran, *Associate Dean, IMBA and MBA Programs*

Robert Lipe, *Associate Dean, PMBA*

The Moore School of Business offers programs of study leading to the degrees of Doctor of Philosophy in Business Administration, Doctor of Philosophy in Economics, Professional Master of Business Administration, International Master of Business Administration, Executive International Master of Business Administration, Master of Accountancy, Master of Arts in Economics, Master of Human Resources and a Master of International Business. Joint programs such as the J.D./I.M.B.A., J.D./Master of Accountancy, and J.D./ Master of Human Resources are offered in cooperation with the law school.

## Admission Requirements

Requirements for admission conform with the general regulations of The Graduate School and the accreditation standards of the AACSB International—the Association to Advance Collegiate Schools of Business. Each program is required to establish their own admission criteria, which include factors such as standardized test performance, scholastic achievement, statement of purpose, recommendations, and in some cases, professional experience and personal interview. Please contact the recruiting team for your program of interest to discuss your individual circumstances. Prospective students can apply online at <http://app.applyyourself.com/AYApplicantLogin/ApplicantConnectLogin.asp?id=mooresch>.

A graduate of a foreign university or college who has completed an academic program equivalent to an American four-year bachelor's degree may apply for admission. International applicants are required to submit with their application a certified transcript indicating the nature and scope of their academic training. International applicants whose native language is not English are required to submit a satisfactory score on the TOEFL or the IELTS Intl. Academic Course Type 2 exam. The TOEFL is not required of international students who have an undergraduate or graduate degree from an American college or university. Prior to enrollment in a graduate program in the Moore School of Business, international students whose native language is not English are required to take an English diagnostic test administered by the English Program for Internationals. The results of this diagnostic test and an interview of the student by a member of the Office of International Students staff will be used to determine the student's level of English-language proficiency. Based upon this evaluation, a course of study will be recommended for those who have demonstrated deficiencies in oral communication and/or reading. Students for whom a course of study is designed are required to begin taking the recommended English courses during their first semester of graduate study and complete the course of study by the end of their second semester.

## Accountancy, M.A.C.C.

The Master of Accountancy program is designed to prepare students for careers in public, private, or governmental accounting and for further graduate work. Two different tracks are offered:

1. business measurement and assurance and
2. taxation.

Although the program is a natural extension of study for students who have completed an undergraduate major in accounting at the University of South Carolina, the program is open to persons who satisfy the Moore School of Business admissions standards, regardless of their undergraduate major.

## Learning Outcomes

- Students will develop communication skills; they will be able to effectively elicit and/or express information through written or oral means.
- Students will develop research abilities; they will be able to locate and extract relevant information from available resource materials.
- Students will develop analytical skills; they will be able to organize, process, and interpret data to develop options for decision making.
- Students will develop sound judgment; they will be able to evaluate options for decision making and provide an appropriate conclusion.
- Students will be able to recognize and comprehend the meaning and application of a particular matter.
- Students will understand the discipline from a global perspective.

## Admission

Requirements for admission to the program conform to the general regulations of The Graduate School and the accreditation standards of the Association to Advance Collegiate Schools of Business International (AACSB International). Applicants submit the Moore School of Business application, an official transcript of their complete academic record, and competitive scores on the GMAT.

International applicants whose native language is not English are also required to submit a satisfactory score on the TOEFL or the IELTS International Academic Course Type 2 Exam. Otherwise-qualified candidates are required to achieve a TOEFL score of at least 600 or a score of at least 7.0 on the IELTS exam. The TOEFL is not required of international students who have a degree from an American college or university.

Please visit the Darla Moore School of Business website ([http://www.sc.edu/study/colleges\\_schools/moore/](http://www.sc.edu/study/colleges_schools/moore/)) for admissions information.

## Degree Requirements (30 Hours)

### Prerequisites

A core of required undergraduate foundation courses must be completed as follows:

- ACCT 401
- ACCT 402
- ACCT 403
- ACCT 404
- ACCT 406

Please see The Undergraduate Studies Bulletin (<http://bulletin.sc.edu/>) for course descriptions.

### In Addition to the Prerequisite Accounting Courses

Students also must satisfy a business core and math/statistics requirement. Depending on their background, students may be required to complete courses in one or more of the following fields: calculus, statistics, marketing, management, finance, economics, and accounting principles.

Several of the above accounting and business core prerequisites may be taken concurrently with graduate-level courses while enrolled in the program.

### Course Work

The Master of Accountancy program consists of 30 semester hours of course work beyond the necessary prerequisite undergraduate courses. In addition, students must demonstrate competency on a simulated professional accounting examination similar to the Certified Public Accountant (CPA) examination. Students who provide proof of passed sections of the CPA examination will be considered to have demonstrated competency in equivalent sections of the simulated professional accounting examination.

Students in the program must select one of two tracks (business measurement and assurance or taxation) and complete the degree requirements for that track.

#### Business Measurement and Assurance Track

The Business Measurement and Assurance Track is a professional program that provides students with the advanced knowledge and skills necessary for entry-level positions in the areas of auditing, assurance, services, and financial reporting and for further graduate work. Students are required to complete each of the following courses:

Course	Title	Credits
ACCT 501	Financial Accounting III	3
ACCT 732	Auditing II	3
ACCT 734	Accounting Research and Communication	3
ACCT 736	Information Technology Assurance, Control, and Security	3
ACCT 737	Accounting Information Systems from a Strategic Perspective	3
ACCT 751	Business Entity Tax Issue	3

#### Approved Electives

The remaining 12 semester hours are composed of approved electives.	12
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<b>Total Credit Hours</b>	<b>30</b>
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#### Taxation Track

The Taxation Track is a professional program that provides students with the advanced knowledge and skills necessary for entry-level positions as tax accountants in the accounting profession and for further graduate work. Students are required to complete each of the following courses:

Course	Title	Credits
ACCT 501	Financial Accounting III	3
ACCT 750	Tax Research and Communication	3
ACCT 751	Business Entity Tax Issue	3
ACCT 752	Advanced Business Entity Tax Issues	3

ACCT 753	Advanced Individual Tax Issues	3
ACCT 754	Multijurisdictional Tax Issues	3

#### Approved Electives

The remaining 12 semester hours are composed of approved electives.	12
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<b>Total Credit Hours</b>	<b>30</b>
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### Professional Examination Competency

All Master of Accountancy students must demonstrate competency on a simulated professional accounting examination approved by the School of Accounting, similar to the CPA exam. Students who provide proof of passed sections of the CPA examination will be considered to have demonstrated competency in equivalent sections of the simulated professional accounting examination.

## Business Administration, A.M.B.A

The Accelerated M.B.A offers a rigorous twelve month program of graduate business study. The program must be taken on a full-time basis, with classes beginning each June and concluding the following June. Students complete at least 41 credit hours of graduate course work that is split between required core courses and student selected electives.

### Learning Outcomes

- Our students will be able to appropriately use concepts and frameworks to analyze and evaluate business decisions that encompass ethical, analytical, and culturally sensitive dimensions within an organizational context.
- Our students will be able to analyze business situations and make decisions that demonstrate understanding through the use of cultural and ethical frameworks.
- Our students will appropriately evaluate and integrate concepts and frameworks articulated in core functional areas of business and within the international business arena.
- Our students will be able to evaluate and solve in-depth business problems using concepts and frameworks within at least one functional area of business.
- Our students will demonstrate effective verbal and written communications.

### Admission

Requirements for admission to the program conform to the general regulations of The Graduate School and the accreditation standards of AACSB International-the Association to Advance Collegiate Schools of Business. Applicants submit the official graduate application, an official transcript of their complete academic record, and satisfactory scores on the GMAT or GRE. At least two years of meaningful work experience is expected.

International applicants whose native language is not English are also required to submit a satisfactory score on the TOEFL or the IELTS Intl. Academic Course Type 2 exam. Otherwise-qualified candidates are required to achieve a TOEFL score of at least iBT 100 or 600 paper-based or a score of at least 7.0 on the IELTS exam. The TOEFL is not required of international students who have a degree from an American college or university. Graduates of foreign universities or colleges who have completed an academic program equivalent to a bachelor's degree from a U.S. institution are encouraged to apply for admission.

Please visit the Darla Moore School of Business (p. 185) website for admissions information.

## Degree Requirements (41 Hours)

AMBA candidates will complete a 41-credit-hour curriculum as follows:

### Business Foundations Core (12 Hours Minimum)

Course	Title	Credits
DMSB 710	Financial Accounting in the Global Environment	2-3
DMSB 712	Quantitative Methods in Business	2-3
DMSB 713	Global Economics	3
DMSB 717	Management Accounting in the Global Environment	2-3
MGSC 777	Advanced Quantitative Methods in Business	3
<b>Total Credit Hours</b>		<b>12-15</b>

### Functional Core (11 Hours Minimum)

Course	Title	Credits
DMSB 711	Global Strategic Management I	2-3
DMSB 715	Global Finance	3
DMSB 716	Global Marketing Management	3
DMSB 718	Global Supply Chain and Operations Management	3
DMSB 723	Leading Teams and Organizations	2-3
<b>Total Credit Hours</b>		<b>13-15</b>

### Electives (18 Hours Minimum)

- These electives are chosen from the list of approved elective offerings of the Moore School of Business. Individual departments may require specific electives to be taken in order to fulfill requirements for identified specializations.

## Business Administration, M.S.

The M.S. in Business Administration is offered in conjunction with the M.A. in English as a graduate dual degree program (p. 463). Additional information can be found at the following link: [Business Administration / English, M.S. / M.A. \(p. 464\)](#)

### Learning Outcomes

- Students will have the ability to understand and apply concepts and practices in their major area of study.
- Students will have the ability to undertake research on an issue in their major area of study. This should include the abilities to critically review previous research, to develop approaches to answering relevant questions, and to appropriately draw inferences from the outcomes of these research activities.
- Students will have the ability to analyze data. Students should have the ability to collect, analyze, and interpret data to address a substantive issue in their major area of study.
- Students will have the ability to effectively communicate research findings. The student should be able to develop written and oral reports of their research that document their approach and findings in sufficient detail.

## Business Administration, P.M.B.A.

The Professional Master of Business Administration program is a non-traditional M.B.A. program designed for working professionals and attracts students from a broad range of business and industry. The program is delivered live to many locations in South Carolina and Charlotte, N.C. Each location is equipped for two-way communication with the professor during class.

### Learning Outcomes

- Communication skills: Students will be able to engage in effective business communication, with competencies demonstrated for both oral and written communication.
- Business Acumen: Students will acquire in-depth knowledge in the core foundational courses of business to understand the operations of the modern business corporation.
- Data-driven decision-making skills: Students will examine the role of quantitative data in managerial decision-making. They will understand the importance and roles of different types of data (financial, economic, accounting, etc.) and utilize appropriate format for presentation of data.
- Global business competencies: Students will be able to draw upon their understanding of the international business environment to address complex business or economic questions.

### Admission

Requirements for admission to the program conform to the general regulations of The Graduate School and the accreditation standards of AACSB International-the Association to Advance Collegiate Schools of Business. Admission decisions are based on a holistic review of standardized test score performance, professional experience, previous scholastic performance, professional recommendations, a clear statement of purpose and, in some cases, a personal interview. We are pleased to consider a waiver of the GMAT/GRE requirement for applicants with advanced degrees and/or progressive professional or military experience supported by an exceptional academic record. Please contact our recruiting team to discuss your individual circumstances. Prospective students can apply online at <https://applymooregrad.force.com/apply>

International applicants whose native language is not English are also required to submit a satisfactory score on the PTE Academic or IELTS International Academic Course Type 2 exam. Otherwise-qualified candidates are required to achieve a TOEFL score of at least iBT 100 or 600 paper-based or a score of at least 7.0 on the IELTS exam. The TOEFL is not required of international students who have a degree from an American college or university. Graduates of foreign universities or colleges who have completed an academic program equivalent to a bachelor's degree from a U.S. institution are encouraged to apply for admission.

Please visit the [Professional MBA program's website](#) for admissions information.

## Degree Requirements (48 Hours)

### Coursework (27 Hours)

Course	Title	Credits
ACCT 728	Financial Accounting	3
ACCT 729	Managerial Accounting	3

MGSC 711	Quantitative Methods in Business	3
ECON 720	Managerial Economics	3
FINA 760	Financial Policies	3
MBAD 702	Strategic Management	3
MGMT 770	Competing Through People	3
MGSC 791	Operations Management	3
MKTG 701	Marketing Management	3
<b>Total Credit Hours</b>		<b>27</b>

## Elective Courses in the Moore School of Business (21 Hours)

These electives are chosen from a number of approved elective offerings of the Moore School of Business.

### International Business Concentration

To complete the international business concentration, students are required to take four of their seven electives in international business. One of these electives must be IBUS 750, a course which requires travel and study abroad. an offshore learning experience.

### International Business Concentration

The international business specialization develops skills in doing business across national boundaries and diverse cultures. Course offerings include a study abroad experience to learn firsthand how business is conducted in other countries, international management, international finance and foreign legal systems. To complete the international business concentration, students are required to take four of their seven electives in international business. One of these electives must be IBUS 750, a course which requires a study abroad experience.

### Finance Concentration

An emphasis in finance will prepare students for senior positions in financial service industries such as banking and investment management firms, as well as corporate finance positions. Finance courses provide a core set of skills in financial modeling, valuation, mergers and acquisitions, risk management, financial reporting and analysis.

Course	Title	Credits
FINA 761	Advanced Financial Management	3
FINA 762	Investment Management	3
Select two of the following:		6
FINA 737	Derivative Products and Analysis	
FINA 746	Risk Management	
FINA 756	Financial Statement Analysis	
FINA 765	Management of Financial Institutions	
FINA 767	Real Estate Finance	
FINA 770	Fixed-Income Securities	
FINA 773	Project Finance	
IBUS 701	International Financial Management	
<b>Total Credit Hours</b>		<b>12</b>

### Innovation and Entrepreneurship Concentration

The innovation and entrepreneurship concentration focuses on providing PMBA students with the skills and competencies needed to excel in the following areas:

- developing and launching new ventures, whether as standalone entities or as new businesses within established corporations

- managing and funding small businesses and scalable new ventures
- directing the development of new products and services
- ensuring that appropriate strategies are in place to protect/appropriate the value associated with these new ideas and initiatives

Course	Title	Credits
Select four of the following:		12
MGMT 733	Strategic Management of Technology and Innovation	
IBUS 709	International Intellectual Property Management	
IBUS 790	Specialized Study in International Business	
MGMT 777	Innovation and New Venture Analysis	
MGMT 778	Small Business Management	
MGMT/FINA 780	Entrepreneurial Finance and the Dynamics of Emerging Ventures	
MGSC 779	Innovation and Design	
MGSC 772	Project Management	
<b>Total Credit Hours</b>		<b>12</b>

### Marketing Concentration

Marketing managers must see customers, products and services as assets. The PMBA Marketing Concentration builds skills in marketing strategy, research and consumer behavior. Courses in customer relationship management/datamining and internet marketing are also offered.

Course	Title	Credits
Select four of the following:		12
MKTG 702	Marketing Research	
MKTG 704	Consumer Behavior	
MKTG 705	Marketing Communications	
MKTG 707	Product and Branding Policies	
MKTG 708	Customer Relationship Management and Data Mining	
MKTG 712	Topics in Marketing Thought and Practice	
MKTG 715	Pricing Strategy and Analysis	
MKTG 717	Fundamentals of Marketing Analytics	
<b>Total Credit Hours</b>		<b>12</b>

### Human Resources Management Concentration

Four courses are to be selected from the following list. Not all courses will be available at all times. Electives targeting Human Resource Management include:

Course	Title	Credits
Select four of the following:		12
MGMT 701	Human Resources and the Global Firm	
MGMT 718	Management of Human Resources	
IBUS 717	Managing Cross-border Teams	
MGMT 719	Management of Compensation	
MGMT 720	Staffing	
MGMT 722	Labor Relations	
MGMT 726	Human Resource and Business Strategy	
MGMT 730	Consulting and Organizational Development in MNCs	
MGMT 772	Employee and Leadership Development	

## P.M.B.A. Banking Track

The banking track of the Professional MBA program is designed for students and graduates of several graduate schools of banking. Students in the banking track take 13 courses (the 9 core courses and 4 electives).

## Business Administration, Ph.D.

The program leading to the degree of Doctor of Philosophy in Business Administration is designed for students of outstanding ability who wish to do advanced work in preparation for careers in university teaching and research, business, and/or government. To achieve this objective, the program provides an advanced, specialized education in a business administration discipline and intensive training in research methods applicable to business problems.

More specifically, the program is designed to accomplish the following objectives:

- provide a thorough knowledge and deep insight into the main theoretical disciplines underlying the student's fields of specialization built upon a basic understanding of business and its environment
- develop the skills, professional ethics, and competence required to design, execute, and evaluate creative and meaningful research in the student's field of specialization
- promote individual programs of study which encourages students to customize their research and teaching interests and expertise, thereby better preparing them for successful roles as researchers, educators, business people, and policy makers.

Normally, the minimum time it will take a student to obtain the degree of Doctor of Philosophy in Business Administration is four academic years beyond the undergraduate degree (a minimum of 60 graduate hours beyond the undergraduate degree), although five years may be required in order to develop a professional resume that will be attractive to potential employers.

## Learning Outcomes

- Students will demonstrate a thorough knowledge of the theories and underlying research in their areas of specialization.
- Students will develop the analytical and methodological skills required to evaluate and discuss existing and emerging theories in their fields of specialization.
- Students will be able to conduct original research in their areas of expertise.
- Students will be able to communicate the results of their research in a clear and effective manner.
- Students will develop the skills required to teach college-level classes in their area of expertise.

## Admission

Criteria for admission vary by major area, and prospective applicants are encouraged to contact the director of the Ph.D. program in the Moore School of Business for details. All applicants must complete a Moore School of Business application and submit the following supporting documentation: official GMAT test scores (GRE may be substituted), official transcripts documenting all academic work, and letters of recommendation. International applicants whose native language is not

English are also required to submit a satisfactory score on the TOEFL or the IELTS Intl. Academic Course Type 2 exam.

## Degree Requirements (60 Post-Baccalaureate Hours)

The student, in consultation with a Ph.D. advisory committee, develops a program of study giving consideration to academic background and professional objectives. The program of study must meet the general requirements outlined below.

### Prerequisites

A background in the functional areas of business is helpful, but not required to enroll in the doctoral program. Those applicants admitted without a business degree or minor may be required to complete additional coursework in one or more functional areas of business and some additional mathematics may be required. Specific prerequisites may vary by major areas of concentration, and prospective applicants are encouraged to contact the faculty coordinator of the Ph.D. program in their major area of concentration for details.

### Foundation Courses (6 Hours)

### Research Tools (18 Hours)

All doctoral students are required to complete at least 18 semester hours of research-tools course work as specified by the major area of concentration. The specific course work required will include no more than 6 semester hours of research-tools course work from the major area of concentration and must be approved by the student's Ph.D. advisory committee and the associate dean for research and academics.

### Major Area (15 Hours Minimum)

In addition to the research-tools course work specified above, each student must complete at least 15 semester hours of course work in the major area of concentration approved by the Ph.D. advisory committee. **The major areas are accounting, business policy/strategy, finance, international business, international finance, management information systems, marketing, operations research, organizational behavior/human resources, and production/operations management.**

### Cognate Area (9 Hours Minimum)

Students in all major areas except international business must take at least nine semester hours of cognate course work. Students in international business must complete at least 15 hours of cognate course work. The cognate area may include courses from the areas listed above, other than from the major area of concentration, or they may be taken from other areas inside or outside the Moore School of Business. All must be approved by the student's advisory committee and the associate dean for research and academics.

### Dissertation Preparation (12 Hours)

A minimum of twelve hours of dissertation preparation credit are required.

### Other Requirements

#### Admission to Candidacy

No later than three semesters, or the equivalent, into the program, all students must pass an admission-to-candidacy examination in their major areas of concentration.

### Comprehensive Examination

Upon completion of the required course work, each candidate must pass a comprehensive examination consisting of a written part followed by an oral part. The oral part must be taken within three weeks of successfully completing the written examination. The examination may not be taken more than twice.

### Language Requirements

Proficiency in statistical methods will be substituted for language proficiency. Evidence of proficiency will be demonstrated by successful completion of all statistical coursework on the program of study or earning a passing mark on a statistical qualifying exam administered by faculty in the student's major area of concentration.

### Dissertation

Each candidate must present a dissertation that gives evidence of original and significant research. The dissertation must be defended not later than five years after successful completion of the comprehensive examination. The candidate must defend the dissertation before a committee consisting of no fewer than four members, as prescribed by The Graduate School. General requirements concerning library deposit and publication are available from The Graduate School.

### Research and Teaching

Prior to receiving the Ph.D. degree, the student must teach and participate in research under the direction of a faculty member of the Moore School of Business.

## Business Analytics, Certificate

To obtain this graduate certificate, students must complete a 4-course sequence in Business Analytics, with a GPA of 3.0 or better in these four courses. All students pursuing the BA certificate must apply for and be admitted to the BA certificate program. Note that this admissions process is separate from degree program admissions. There are three distinct channels through which this certificate can be delivered:

1. As an option for all DMSB graduate students. The certificate would appear on the graduate transcript of these students. Requirements for admission to the BA certificate program for these students are the same as those for the student's respective DMSB graduate program. These students must apply for the certificate prior to completing 24 hours of coursework in their graduate program.
2. As a standalone (non-degree) option, for which students pay a per-course fee and take the four courses with the DMSB graduate students. Students can use the credits obtained from the BA certificate for a future DMSB graduate degree program as long as the completion of the degree is within four years of the completion of the certificate. Requirements for admission to the BA certificate program for these students are similar to those for the DMSB PMBA program.
3. As an accelerated, customized executive education program. Students can use the credits obtained from the BA certificate for a future DMSB graduate degree program as long as the completion of the degree is within four years of the completion of the certificate. Requirements for admission to the BA certificate program for these students are similar to those for the DMSB PMBA program.

### Requirements

#### Courses Qualifying for the Certificate

The courses for this certificate were determined based on conversations with potential employers about critical business analytics skills, as well

as an analysis of the curricula at the top 30 business analytics programs in the U.S.

Course	Title	Credits
<b>Required Courses</b>		
MGSC 790	Data Resource Management	3
MGSC 777	Advanced Quantitative Methods in Business	3
MKTG 708	Customer Relationship Management and Data Mining	3
Select one of the following:		3
MKTG 717	Fundamentals of Marketing Analytics	
MGSC 778	Revenue Management	
CSCE 587	Big Data Analytics	
FINA 772	Student-Managed Investments	
MGSC 796	Information Systems	
<b>Total Credit Hours</b>		<b>12</b>

Note: Students may request that other courses be substituted for the courses listed above. All such requests must be approved by the Moore School Analytics Programs Committee.

## Cost Management, Certificate

The Certificate is designed to complement graduate degree programs offered within the Moore School of Business. It is designed to enhance the student's career opportunities by providing preparation in areas critical to those working within the finance and accounting function in private and public sector organizations. Requirements for admission to the Certificate program are the same as those for the Moore School MBA program.

### Certificate Requirements (12 Hours)

Course	Title	Credits
Select six hours minimum of the following:		6
DMSB 710	Financial Accounting in the Global Environment	
or ACCT 728 Financial Accounting		
DMSB 717	Management Accounting in the Global Environment	
or ACCT 729 Managerial Accounting		
ACCT 504	Legal Issues for Accountants & Managers	
ACCT 505	Governmental and Nonprofit Accounting	
ACCT 737	Accounting Information Systems from a Strategic Perspective	
ACCT 738	Financial Statement Analysis	
ACCT 743	Accounting for Management Control	
FINA 761	Advanced Financial Management	
Select four hours minimum of the following:		4
DMSB 718	Global Supply Chain and Operations Management	
or MGSC 791 Operations Management		
MGSC 771	Global Sourcing: Strategies and Applications	
MGSC 772	Project Management	
DMSB 723	Leading Teams and Organizations	
or MGMT 777 Competing Through People		
DMSB 740	Management of Human Capital	

or MGMT 718 Management of Human Resources

**Total Credit Hours** 10

Note: A student may pursue the certificate simultaneously with pursuing other graduate degrees in business and students are allowed to use up to 9 credit hours taken as part of the certificate for degree requirements. Students enrolled in a degree program within the Moore School of Business should seek admission to the certificate program prior to the completion of 24 hours of degree coursework. Students who earn a certificate and then enroll in a degree program may also use up to 9 credit hours from the certificate toward the completion of degree requirements, provided the degree is awarded within four years of the completion of the certificate.

## Economics

Department Website (<http://mooreschool.sc.edu/>)

John H. McDermott, *Chair*

The Department of Economics offers programs of study leading to the degrees of Doctor of Philosophy in Economics, Master of Arts in Economics, and, in cooperation with the School of Law, J.D./Master of Arts in Economics (see Graduate Dual Degree Programs (p. 463)).

## Programs

- Economics, M.A. (p. 192)
- Economics, Ph.D. (p. 193)

## Courses

### ECON 500 - Urban Economics (3 Credits)

An analysis of economic forces affecting urbanization and the economic processes influencing urban form and structure. Spatial concepts are considered in addition to traditional micro-economic and macro-economic concepts. Topic coverage includes: the economic origin of cities; urban functions and the urban economic base, land-use structure and urban form, and urban efficiency.

**Prerequisites:** ECON 221 and ECON 222, or ECON 224.

### ECON 503 - International Trade Economics (3 Credits)

Theory of international specialization, commercial policy, customs unions, and the effects of trade liberalization and protectionism; economic growth and multinational enterprises.

**Prerequisites:** ECON 321.

**Graduation with Leadership Distinction:** GLD: Global Learning

### ECON 504 - International Monetary Economics (3 Credits)

Exchange rate and balance of payments determination; purchasing-power parity; optimum currency areas, absorption, elasticity, monetary approaches, spot- and forward-exchange markets.

**Prerequisites:** ECON 322.

**Graduation with Leadership Distinction:** GLD: Global Learning

### ECON 505 - International Development Economics (3 Credits)

Economic theories of growth in developing countries. Use of factor resources; role of social and economic institutions; use of financial trade policies for growth.

**Prerequisites:** ECON 221 and ECON 222, or ECON 224.

**Graduation with Leadership Distinction:** GLD: Global Learning

### ECON 506 - Labor Economics and Labor Markets (3 Credits)

Economics of labor demand, labor supply, wage determination in competitive markets, migration, discrimination, unemployment, and labor unions. Theoretical models and empirical knowledge will be considered.

**Prerequisites:** ECON 221 and ECON 222, or ECON 224; ECON 321.

### ECON 507 - Comparative Economic Systems (3 Credits)

An analysis of the organization and operation of the world's major economic systems.

**Prerequisites:** ECON 221 and ECON 222, or ECON 224.

**Graduation with Leadership Distinction:** GLD: Global Learning

### ECON 508 - Law and Economics (3 Credits)

Economic analysis and interpretation of the law. The economic effect of current law and optimal design of law to meet social objectives.

**Prerequisites:** ECON 221 and ECON 222, or ECON 224.

### ECON 509 - Economics of Sustainable Development (3 Credits)

Exploration of the basic theory and practice of sustainable economic development. Topics include: environmental legislation, global agreements, sustainable development indicators, and economic strategies and methods to promote environmentally sound development.

**Prerequisites:** C or better in the following ECON 221 and ECON 222; or ECON 224; MATH 122.

**Graduation with Leadership Distinction:** GLD: Community Service

### ECON 510 - Experimental Economics (3 Credits)

Exploration of the basic theory and techniques of experimental economics. Topics include: basic game theory, experimental design, and elements of behavioral economic thought.

**Prerequisites:** C or higher in ECON 321.

### ECON 511 - Senior Seminar in Economics (3 Credits)

Philosophy and methodology of economics, perspectives on theory and empiricism, economic policy; individualized guided research.

**Prerequisites:** ECON 321, ECON 322, and ECON 436 with grade of C or higher.

### ECON 514 - The Economics of Terrorism (3 Credits)

Focuses on the following aspects of terrorism: (1) its causes/determinants (historical, social, cultural, economic, political, and religious determinants); (2) the organizational and funding structure of terrorist groups; (3) the tactics and weapons of terrorist groups; (4) mobilization and recruitment within terror networks; and (5) counterterrorism methods. Restricted to: Business Majors and Economics Arts and Sciences Majors.

**Prerequisites:** C or better in ECON 321.

### ECON 515 - Industrial Organization (3 Credits)

This course uses the tools of microeconomics and game theory to examine how firms compete and competition's impact on industry performance. Topics include: price discrimination, product differentiation, and oligopoly behavior.

**Prerequisites:** ECON 321.

### ECON 516 - Political Economy (3 Credits)

This course covers fundamental models of collective decision making, studies their empirical relevance, and considers interactions between the economy and politics.

**Prerequisites:** C or better in ECON 221 and ECON 222 or C or better in ECON 224.

**ECON 523 - Introduction to Mathematical Economics (3 Credits)**

Mathematical formulation of economic theories; the use of mathematics in the development and demonstration of economic relationships.

**Prerequisites:** ECON 221 and ECON 222, or ECON 224; MATH 122, MATH 141, or the equivalent.

**ECON 524 - Essentials of Economics (3 Credits)**

A course designed to acquaint the student with the principles of operation of the American economic system. A survey course for social studies teachers in secondary schools.

**Prerequisites:** ECON 221 and ECON 222, or ECON 224.

**ECON 526 - Managerial Economics (3 Credits)**

A study of the application of the economic theory of profits, competition, demand, and costs to analysis of problems arising in the firm and in decision making. Price policies, forecasting, and investment decisions are among the topics considered.

**Prerequisites:** ECON 221 and ECON 222, or ECON 224.

**ECON 530 - The Economics of Education (3 Credits)**

Investment in human capital; the economic value of schooling; internal efficiency of schools; faculty compensation; equity and efficiency of school finance systems; financing higher education.

**Prerequisites:** ECON 221 and ECON 222, or ECON 224.

**ECON 531 - Health Economics (3 Credits)**

Applications of economic analysis to health care. Structure and behavior of health-care markets. Description of health care policy issues.

**Prerequisites:** ECON 221 and ECON 222, or ECON 224.

**ECON 548 - Environmental Economics (3 Credits)**

An analysis of the economic aspects of environmental decay, pollution control, and natural resource use. Analysis of the ability of the market system to allocate resources efficiently when economic activity is accompanied by environmental damage. Discussion of alternative public policy approaches to pollution control and natural resource conservation.

**Prerequisites:** ECON 221 and ECON 222, or ECON 224.

**Cross-listed course:** ENVR 548

**ECON 555 - Game Theory in Economics (3 Credits)**

Game theory as used to understand decision making in business, economics, politics and other real-world environments. Topics covered include: basic terminology; strategic, extensive, and combinatorial models; and equilibrium strategy.

**Prerequisites:** ECON 321 or MATH 141 and STAT 201 or C or higher in STAT 206.

**ECON 562 - Public Finance (3 Credits)**

Theory and practice of taxation: public revenue, expenditure, and debt.

**Prerequisites:** C or higher in ECON 321.

**ECON 589 - Topics in Economics (1-3 Credits)**

Individual topics to be announced with title.

**Prerequisites:** ECON 221 and ECON 222, or ECON 224.

**ECON 594 - Introduction to Econometrics (3 Credits)**

Statistical and economic tools applied to analysis of business and economic problems with the aid of computers.

**Prerequisites:** ECON 221 and ECON 222, or ECON 224; MGSC 291 or STAT 201, MATH 122 or MATH 141.

**ECON 621 - Survey of Contemporary Economic Theory (3 Credits)**

Neo-classical value and distribution theory combined with income and employment theory.

**Prerequisites:** ECON 221 and ECON 222, or ECON 224.

**ECON 690 - Quantitative Foundations for Business and Economics I (3 Credits)**

Calculus and classical optimization methods applied to problems in business and economic analysis; matrices, derivatives, and integrals in the analysis of both univariate and multivariate business and economic models.

**Prerequisites:** ECON 221 and ECON 222, or ECON 224.

**ECON 691 - Quantitative Foundations for Business and Economics II (3 Credits)**

Statistics and probability theory applied to problems of business and economic analysis.

**Prerequisites:** ECON 221 and ECON 222, or ECON 224; MGSC 690 or ECON 690.

**ECON 692 - Quantitative Methods I (3 Credits)**

Probability and statistics necessary for graduate study in economics and business administration; estimation, hypothesis testing, regression, analysis of variance, and nonparametric methods.

**Prerequisites:** ECON 221 and ECON 222, or ECON 224.

**ECON 694 - Quantitative Methods II (3 Credits)**

A study of decision models useful in business administration. Topics covered include linear programming, sensitivity analysis and duality, network models, integer programming, determinate and stochastic dynamic programming, inventory, and queues.

**Prerequisites:** ECON 221 and ECON 222, or ECON 224; ECON 692, mathematics and computer portion of Fundamental Business Skills or equivalent.

## Economics, M.A.

The Master of Arts in Economics program prepares the student for a career as a professional in economics, finance, business or government or for further graduate work in the field of economics or finance. Prior degree work in economics is not required.

## Learning Outcomes

- Students will be able to engage in effective business communication, with competencies demonstrated for both oral and written communication.
- Students will be able to use specialized expertise in a functional area or domain area to address complex business or economic issues.
- Students will examine the role of quantitative data in managerial decision making. They will understand the importance and roles of different types of data. Students will be able to present data in various formats.

## Admissions

Requirements for admission to the program conform to the general regulations of The Graduate School and the accreditation standards of the Association to Advance Collegiate Schools of Business International (AACSB International). Applicants submit the Moore School of Business application, an official transcript of their complete academic record and competitive scores on the GRE or GMAT.



International applicants whose native language is not English are also required to submit a satisfactory score on the TOEFL or the IELTS International Academic Course Type 2 Exam. Otherwise-qualified candidates are required to achieve a TOEFL score of at least 100 on the iBT exam, at least 600 paper-based exam, or at least 7.0 on the IELTS exam. The TOEFL is not required of international students who have a degree from an American college or university.

New students are admitted in the fall semester only. Students must have completed a Bachelor's degree before enrolling in the MA program. Students must also have passed prerequisite courses in principles of economics and basic calculus before enrolling in the program. Please visit the Darla Moore School of Business website for admissions information.

## Degree Requirements (30 Hours)

The M.A. in economics normally takes three full semesters of work. Each student must complete 30 credit hours, successfully complete a comprehensive exam, and maintain a B average (3.00) in the program. The student may elect the Economics track or the Financial Economics track. Within the Economics track, the student may elect the thesis option or non-thesis option. The thesis option requires 24 credit hours of coursework and a 6-credit hour thesis. The non-thesis option requires 30 credit hours of coursework. The Financial Economics track requires 30 credit hours of coursework.

In the first year of the program, all MA students must complete the four core courses listed below. Elective courses and thesis hours will depend on the track selected, and whether the thesis or non-thesis option is chosen, as specified below.

Course	Title	Credits
<b>Core Courses</b>		
ECON 711	Applied Microeconomics	3
ECON 712	Applied Macroeconomics	3
ECON 736	Applied Econometrics	3
STAT 700	Applied Statistics I	3
<b>Tracks</b>		
Select one of the following tracks:		18
Economics		
Financial Economics		
<b>Total Credit Hours</b>		<b>30</b>

### Economics Track

#### Non-Thesis Option

With this option, in addition to the 4 core courses, a total of 6 three-credit-hour elective courses must be taken. Up to three elective courses can be taken outside the department. All coursework must be completed within two years of passing the comprehensive exam and not later than six years after entering the program.

#### Thesis Option

With this option, in addition to the 4 core courses, a total of 4 three-credit-hour elective courses and 6 credit hours of thesis preparation must be taken. Up to two elective courses can be taken outside the department. The student must present and successfully defend a completed thesis that gives evidence of mature research within two years of passing the comprehensive exam and not later than six years after entering the program.

### Note

For both option A and B, at least one of the Economics electives must be at the 700-level or above.

### Financial Economics Track

Students in the Financial Economics Track take 6 three-credit hour courses in addition to the four core courses listed above. All coursework must be completed within two years of passing the comprehensive exam and not later than six years after entering the program.

Of the six courses, there are two required courses:

Course	Title	Credits
FINA 761	Advanced Financial Management	3
FINA 762	Investment Management	3
<b>Total Credit Hours</b>		<b>6</b>

### Electives

The other courses will be chosen from finance courses at the 700-level or above, with approval by the academic advisor. Exceptions will be at the discretion of the advisor.

## Economics, Ph.D.

The doctoral program in economics provides thorough training in economic theory supplemented by knowledge of quantitative tools and understanding of modern economic institutions and policy problems. This program prepares candidates to pursue successfully careers as economists in academia, research, government, and business.

### Learning Outcomes

- Students will be able to approach economics-related issues theoretically. Students should demonstrate a mastery of the relevant literature and have an appreciation for the usefulness and limitations of a given theory.
- Students will be able to analyze data. Students should have the ability to construct, estimate, and interpret economic models.
- Students will be able to undertake original research on economic issues. This should include the abilities to critically review previous research, to develop approaches to answering relevant questions, and to appropriately draw inferences from the outcomes of these research activities. The stress is on the ability to use data appropriately to answer research questions empirically.
- Students will be able to clearly and effectively communicate the results of their research in written and oral form.
- Students will develop the skills required to teach college-level classes in the area of economics.

### Admission

All applicants must complete a Moore School of Business application and submit the following supporting documentation: official transcripts of their complete academic record, two letters of reference, and scores. Prerequisite courses that must be taken prior to enrollment are intermediate micro- and macroeconomics, statistics (ECON 692 or equivalent), and calculus (MATH 141-MATH 142 or equivalent). International applicants whose native language is not English are also required to submit a satisfactory score on the TOEFL or the IELTS Intl. Academic Course Type 2 exam. Prospective applicants are encouraged

to contact the director of the Ph.D. program in the Moore School of Business for further details.

Owing to the lock-step nature of the program, admission is for the fall semester only, and all students are required to take at least nine semester hours of course work during the fall and spring semesters.

## Degree Requirements (60 Post-Baccalaureate Hours)

The Ph.D. in economics normally requires a minimum of four years of full-time work (a minimum of 60 graduate hours beyond the baccalaureate degree or 30 graduate hours beyond the master's degree with at least a B average, including 12 hours of dissertation credit).

A planned course of study shall be organized at the beginning of the student's period of residence. This plan shall be formulated by the student in conference with a three-person advisory committee designated by the graduate director. Changes and departures from this plan will be subject to the approval of the student's advisory committee, the graduate director, and the dean of The Graduate School.

Requirements for the Ph.D. include the following:

### First-Year Core Courses (18 Hours)

Course	Title	Credits
ECON 811	Microeconomic Theory I	3
ECON 821	Macroeconomic Theory I	3
ECON 831	Econometrics and Regression I	3
ECON 812	Microeconomic Theory II	3
ECON 822	Macroeconomic Theory II	3
ECON 832	Econometrics and Regression II	3
<b>Total Credit Hours</b>		<b>18</b>

### Second-Year Field Courses (18 Hours)

There will be six field courses offered in the second year. All students will be required to take these six courses. The course offerings will be jointly determined by student interest and faculty expertise.

Up to two courses may be taken outside the department with the approval of the student's advisory committee and the graduate director.

### Third-Year Courses

In the third year, the student must take the Third-Year Seminar, which consists of a 2-credit Fall course and a 1-credit Spring course. This course is designed to enable the student to conduct a research program in Economics.

## Examinations

### Admission to Candidacy

Students must successfully complete a written admission-to-candidacy examination following the first year in the program. This examination will cover all economic theory courses required during the first year in the program and will be constructed and evaluated by a committee of at least three faculty members appointed by the department chair.

### Comprehensive Examination

Students must write and present a research paper demonstrating knowledge of their chosen fields of study. This paper will count as the comprehensive examination. Students will be supervised by two faculty members who have entered into an agreement with the student, as

approved by the department chair. The student will present the initial version of the paper in a seminar to the faculty. This presentation will count as the oral portion of the comprehensive examination. The presentation will be evaluated by a committee of at least four faculty members approved by the department chair, two of whom are the third year paper supervisors. After passing the oral examination, the student will submit the revised written paper to their two third year paper supervisors. This will count as the written portion of the comprehensive exam.

## Language Requirements

The candidate must demonstrate competency in a computer programming language or statistics as demonstrated by appropriate course work or examination by the student's Ph.D. advisory committee.

## Dissertation

Each candidate must present a dissertation that gives evidence of original and significant research. The dissertation must be completed no later than five years after successfully completing the oral comprehensive examination. The candidate must defend the dissertation before a committee consisting of not fewer than four members. A minimum of twelve hours of dissertation preparation credit are required.

## Teaching and Research

Prior to receiving a Ph.D. degree, the student is required to teach and participate in research under the direction of a faculty member in the Department of Economics.

# Enterprise Resource Planning Systems, Certificate

To obtain this certificate, students must complete a 4-course sequence in Enterprise resource Planning (ERP) systems, with an overall GPA of 3.0 or better across four courses.

## Certificate Requirements (12 Hours)

Course	Title	Credits
<b>Accounting Component</b>		
Select one of the following:		3
ACCT 728	Financial Accounting	
ACCT 738	Financial Statement Analysis	
ACCT 743	Accounting for Management Control	
DMSB 710	Financial Accounting in the Global Environment	
<b>Database Component</b>		
ACCT 702	Application of Advanced Databases to Accounting and Business	3
or MGSC 790	Data Resource Management	
<b>Information Systems Component</b>		
ACCT 736	Information Technology Assurance, Control, and Security	3
or ACCT 737	Accounting Information Systems from a Strategic Perspective	
<b>Enterprise Resource Planning Component</b>		
ACCT 739	Enterprise Resource Planning	3
or ACCT 741	Special Topics in Accounting	
<b>Total Credit Hours</b>		<b>12</b>

## Executive International Master of Business Administration, E.I.M.B.A.

The Executive International Master of Business Administration program is designed for working professionals. The program delivery is at locations throughout the world in collaboration with partner institutions.

### Learning Outcomes

- Students will be able to engage in effective business communication, with competencies demonstrated for both oral and written communication.
- Students will acquire in-depth knowledge in the core foundational courses of business to understand the operations of the modern business corporation.
- Students will examine the role of quantitative data in managerial decision-making. They will understand the importance and roles of different types of data (financial, economic, accounting, etc.) Utilize appropriate format for presentation of data.
- Students will be able to draw upon their understanding of the international business environment to address complex business or economic questions.

### Admission

Requirements for admission to the program conform to the general regulations of The Graduate School and the accreditation standards of the Association to Advance Collegiate Schools of Business. Admission decisions are based on a review of standardized test score performance, professional experience, previous scholastic performance, professional recommendations, a clear statement of purpose and, in some cases, a personal interview. The GMAT/GRE requirement may be waived for applicants with advanced degrees and/or significant and progressive professional experience. Applicants will normally be expected to have an undergraduate degree and 5 years of work experience.

Applicants whose native language is not English are required to submit a satisfactory score on the TOEFL, the IELTS Intl. Academic Course Type 2 exam, TOEIC, or the PTE Academic. This requirement may be waived if the applicant has graduated from a degree program taught in English.

### Degree Requirements (48 Hours)

The required course work consists of 48 credit hours:

#### Nine Core Courses (27 Hours)

Course	Title	Credits
ECON 720	Managerial Economics	3
DMSB 712	Quantitative Methods in Business	2-3
DMSB 714	Managing the Multinational Enterprise	3
DMSB 715	Global Finance	3
DMSB 716	Global Marketing Management	3
DMSB 718	Global Supply Chain and Operations Management	3
DMSB 725	Global Business Issues	3
MBAD 702	Strategic Management	3
MGMT 770	Competing Through People	3
<b>Total Credit Hours</b>		<b>26-27</b>

### Three Core Specialization Courses (9 Hours)

Course	Title	Credits
Select at least one of the following:		3
DMSB 710	Financial Accounting in the Global Environment	
DMSB 717	Management Accounting in the Global Environment	
Select at least one of the following:		3
MKTG 708	Customer Relationship Management and Data Mining	
MGSC 777	Advanced Quantitative Methods in Business	
MGSC 790	Data Resource Management	
MKTG 717	Fundamentals of Marketing Analytics	
BADM 790	Special Topics in Business	
<b>Total Credit Hours</b>		<b>6</b>

### Elective Courses (12 Hours)

These electives are chosen from a number of approved elective offerings of the Moore School of Business and Tec de Monterrey.

## Financial and Resource Management, Certificate

The Certificate is designed to complement graduate degree programs offered within the Moore School of Business. It is designed to enhance the student's career opportunities by providing preparation in areas critical to those working within the finance and accounting function in private and public sector organizations. Requirements for admission to the Certificate program are the same as those for the Moore School MBA program.

### Certificate Requirements (12 Hours)

Course	Title	Credits
Select at least six hours of the following:		6
DMSB 710	Financial Accounting in the Global Environment	
DMSB 717	Management Accounting in the Global Environment	
ACCT 504	Legal Issues for Accountants & Managers	
ACCT 505	Governmental and Nonprofit Accounting	
ACCT 737	Accounting Information Systems from a Strategic Perspective	
ACCT 738	Financial Statement Analysis	
ACCT 743	Accounting for Management Control	
FINA 761	Advanced Financial Management	
Select at least four hours of the following:		4
DMSB 718	Global Supply Chain and Operations Management	
MGSC 771	Global Sourcing: Strategies and Applications	
MGSC 772	Project Management	
DMSB 740	Management of Human Capital	
<b>Total Credit Hours</b>		<b>10</b>

A student may pursue the certificate simultaneously with pursuing other graduate degrees in business and students are allowed to use up to 9 credit hours taken as part of the certificate for degree requirements. Students enrolled in a degree program within the Moore School of Business should seek admission to the certificate program prior to the

completion of 24 hours of degree coursework. Students who earn a certificate and then enroll in a degree program may also use up to 9 credit hours from the certificate toward the completion of degree requirements, provided the degree is awarded within four years of the completion of the certificate.

## Global Strategy, Certificate

The Global Strategy Certificate Program is a unique educational opportunity for those interested in global management careers in business, financial, or non-profit organizations. It provides specialized content knowledge in global strategy and related areas and facilitates further development of essential skills such as critical thinking, problem solving, and contextual intelligence. Specifically, participants will learn how to utilize global opportunities for growth, assess risks and benefits of different investment and locational choices, and manage effectively their activities across borders. They will develop valuable insights and practical skills for assessing and understanding the economic, institutional, and cultural differences across markets and for creating competitive global organizations in the new world economy.

### Certificate Requirements (12 Hours)

To enroll in this program, participants must have a bachelor's degree and have basic knowledge of frameworks and theories of strategic management. Those who lack such foundational knowledge will be required to complete a short intensive workshop about key strategy concepts. To be awarded this certificate, participants must complete four graduate courses for a total of 12 credit hours. Coursework includes Two Core and Two Elective courses as follows:

Course	Title	Credits
<b>Core Courses</b>		
DMSB 741 or IBUS 706	Comparative Institutional Systems Nations States, Regional Networks and Global Markets	3
Select one of the following:		3
DMSB 714	Managing the Multinational Enterprise	
IBUS 705	Global Business Management	
IBUS 703	International Management	
<b>Elective Courses</b>		
Select six hours of the following:		6
IBUS 704	Comparative Corporate Governance	
IBUS 710	Global Stakeholder Management	
IBUS 726	The Business Case for Services Offshoring	
IBUS 727	Economic Development and Global Strategy	
IBUS 731	Global Competitive Analysis	
IBUS 734	International Business Negotiations	
IBUS 750	Exploring Global Business	
IBUS 790	Specialized Study in International Business	
<b>Total Credit Hours</b>		<b>12</b>

Note: Electives are subject to approval by the International Business Department Certificate Committee; students may request that other courses be substituted for the courses listed above. Relevant graduate coursework may apply towards DMSB graduate programs, subject to the associated Program Faculty Director review and approval.

## Human Resources, Certificate

The Certificate is designed to complement graduate degree programs offered within the Moore School of Business. It is designed to enhance the student's career opportunities by providing preparation in areas critical to those working within Human Resources in private and public sector organizations. Requirements for admission to the Certificate are the same as those for the Moore School MBA program.

To obtain this graduate certificate, students must complete a 4-course sequence in Human Resources, with a GPA of 3.0 or better in those four courses. Delivery options may vary based on the market segment:

1. As an option for IMBA and PMBA students (akin to a "concentration").
2. As a standalone option.
3. As an accelerated, customized executive education program.

### Certificate Requirements (12 Hours)

#### Coursework

Choose four of the following. This list includes classes that are currently taken by all MHR students.

Course	Title	Credits
Select four of the following:		12
MGMT 701	Human Resources and the Global Firm	
MGMT 719	Management of Compensation	
MGMT 720	Staffing	
MGMT 721	Employment Relations Law	
MGMT 722	Labor Relations	
MGMT 725	Human Resource Metrics and Research	
MGMT 726	Human Resource and Business Strategy	
MGMT 730	Consulting and Organizational Development in MNCs	
MGMT 750	Finance for Human Resource Professionals	
MGMT 772	Employee and Leadership Development	
<b>Total Credit Hours</b>		<b>12</b>

## Human Resources, M.H.R.

The Master of Human Resources program is designed to train individuals for careers as human resource professionals. Because of the increasingly complex and sophisticated nature of the profession, both business foundation courses and a high degree of specialization in the human resource area are needed in order to meet the needs of employers.

The M.H.R. program ensures students achieve the necessary specialized training through 27 hours of required coursework in human resource management, and a six semester-hour internship or practicum experience related to human resources. The M.H.R. program also ensures that students have the necessary exposure to business foundation areas through 12 semester hours selected from coursework in accounting, economics, finance, management science, and marketing.

### Learning Outcomes

- Communication skills: Students will be able to be able to engage in effective business communication, with competencies demonstrated for both oral and written communication.

- **Functional/Domain expertise:** Students will have specialized expertise in a functional area or domain area to address complex business or economic issues.
- **Data-driven decision-making skills:** Students will examine the role of quantitative data in managerial decision making. They will understand the importance and roles of different types of data. Students will be able to present data in various formats.
- **Global Business Competencies:** Students will be able to draw upon their understanding of the international business environment to address complex business or economic questions.
- **Collaboration and influence skills:** Students will be able to work effectively within a group context and use appropriate influence tactics when working with others.

## Admission

Requirements for admission to the program conform to the general regulations of The Graduate School and the accreditation standards of the Association to Advance Collegiate Schools of Business International (AACSB International). Applicants submit the Moore School of Business application, an official transcript of their complete academic record and competitive scores on the GRE or GMAT.

International applicants whose native language is not English are also required to submit a satisfactory score on the TOEFL or the IELTS International Academic Course Type 2 Exam. Otherwise-qualified candidates are required to achieve a TOEFL score of at least iBT of 100 or 600 paper-based or a score of at least 7.0 on the IELTS exam. The TOEFL is not required of international students who have a degree from an American college or university.

Please visit the Darla Moore School of Business ([https://www.sc.edu/study/colleges\\_schools/moore/](https://www.sc.edu/study/colleges_schools/moore/)) website for admissions information.

## Degree Requirements (45 Hours)

### Human Resource Core Courses (27 Hours)

Students are required to complete 27 hours of HR core courses listed below. Selected courses may be substituted with special topics coursework (MGMT 590) based on approval of the Program Academic Director.

Course	Title	Credits
MGMT 701	Human Resources and the Global Firm	3
MGMT 719	Management of Compensation	3
MGMT 720	Staffing	3
MGMT 721	Employment Relations Law	3
MGMT 722	Labor Relations	3
MGMT 725	Human Resource Metrics and Research	3
MGMT 726	Human Resource and Business Strategy	3
MGMT 730	Consulting and Organizational Development in MNCs	3
MGMT 772	Employee and Leadership Development	3
<b>Total Credit Hours</b>		<b>27</b>

### Business Foundation Coursework (12 Hours)

Students are required to complete 12 hours of business foundation coursework. In order to ensure that students receive appropriate exposure to analytical and quantitative coursework, the 12 hours of

coursework must be approved by the Academic Coordinator. Potential business foundation courses are the following:

Course	Title	Credits
ACCT 728	Financial Accounting	3
ACCT 729	Managerial Accounting	3
ECON 506	Labor Economics and Labor Markets	3
ECON 720	Managerial Economics	3
FINA 756	Financial Statement Analysis	3
FINA 760	Financial Policies	3
IBUS 700	Survey of International Business	3
MBAD 702	Strategic Management	3
MGMT 737	Human Resources Experiential Project	3
MGMT 750	Finance for Human Resource Professionals	3
MGMT 775	Competitive Strategy Analysis	3
MGSC 772	Project Management	3
MGSC 791	Operations Management	3
MGSC 796	Information Systems	3
MKTG 701	Marketing Management	3
MKTG 704	Consumer Behavior	3
MKTG 705	Marketing Communications	3

### Internship or Practicum (6 Hours)

Students are required to complete MGMT 727, a six hour internship or practicum in the human resource field.

### Professional Masters of Human Resources Track (Executive Master of Human Resources, E.M.H.R.)

Admission to this track generally follows the stated requirements for the MHR program. However, current employment, professional achievement and organizational responsibility are considered primary factors in the admissions process.

### M.H.R. / J.D Electives Policy

Students in the Human Resources / Law M.H.R. / J.D. program (p. 469) may use up to 12 hours of employment-related law courses from the law school to fulfill requirements within the M.H.R. program.

## International Business, I.M.B.A.

Graduates of the I.M.B.A. generally accept managerial positions whose responsibilities have a global component. The Moore School of Business has demonstrated its ability to equip graduates to perform in positions of leadership in global business. The I.M.B.A. program differs from more traditional graduate business degrees in the extent to which a global perspective is taken on all issues. The language and global issues components offer superb preparation for the internship. Significant assignments are undertaken in the internship. The numerous elective courses in international business and the high-quality elective courses available in all areas of the Moore School of Business allow I.M.B.A. participants who so choose to develop a significant area of specialized expertise. Graduates of the I.M.B.A. program are true internationalists, equipped to operate in the culturally diverse markets now open to the global firm.

The degree program prepares its graduates for global business careers. Each graduate has the opportunity to develop competency in a second language and will complete a rigorous program of graduate business study, develop an understanding of another culture and business

environment, and integrate academic course work through the experience of an extensive internship. Each candidate for the degree is admitted to a language track or the global track. The language selected determines the culture to be studied and the region of the world where the internship is located. Language tracks currently offered are French, German, Italian, Portuguese, and Spanish (two-year programs), and Arabic, Chinese, and Japanese (three-year programs). Rather than learn another language, students in the global track pursue additional course work that focuses on the political, economic, and business factors affecting the investment climate of various regions of the world. The program must be taken on a full-time basis, with classes beginning each July. The courses in the program are taken in sequence over a two- or three-year period, depending on the track to which the candidate is admitted.

## Learning Outcomes

- **Communication skills:** Students will be able to engage in effective business communication, with competencies demonstrated for both oral and written communication.
- **Business Acumen:** Students will acquire in-depth knowledge in the core foundational courses of business to understand the operations of the modern business corporation.
- **Data-driven decision-making skills:** Students will examine the role of quantitative data in managerial decision making. They will understand the importance and roles of different types of data. Students will be able to present data in various formats.
- **Global business competencies:** Students will be able to draw upon their understanding of the international business environment to address complex business or economic questions.
- **Integrative understanding of business and government interactions globally:** Students will possess the skills to capture and understand an insiders perspective of how business is conducted in a particular country
- **Foreign Language Proficiency:** Students will acquire effective communication skills in other languages as identified in their program of study.
- **Global Leadership:** Students will acquire the specific skills to enable them to work and lead across borders.

## Admission

Requirements for admission to the program conform to the general regulations of The Graduate School and the accreditation standards of AACSB International-the Association to Advance Collegiate Schools of Business. Applicants submit the official graduate application, an official transcript of their complete academic record, and satisfactory scores on the GMAT or GRE. At least two years of meaningful work experience is expected.

International applicants whose native language is not English are also required to submit a satisfactory score on the TOEFL or the IELTS Intl. Academic Course Type 2 exam. Otherwise-qualified candidates are required to achieve a TOEFL score of at least iBT 100 or 600 paper-based or a score of at least 7.0 on the IELTS exam. The TOEFL is not required of international students who have a degree from an American college or university. Graduates of foreign universities or colleges who have completed an academic program equivalent to a bachelor's degree from a U.S. institution are encouraged to apply for admission.

Please visit the the Darla Moore School of ([http://bulletin.sc.edu/preview\\_entity.php?catoid=94&ent\\_oid=1830](http://bulletin.sc.edu/preview_entity.php?catoid=94&ent_oid=1830))Business website Business website for admissions information.

## Degree Requirements (74 Hours) Select from the Following (41 Hours minimum)

Course	Title	Credits
DMSB 710	Financial Accounting in the Global Environment	2-3
DMSB 712	Quantitative Methods in Business	2-3
DMSB 713	Global Economics	3
DMSB 717	Management Accounting in the Global Environment	2-3
DMSB 706A	Globalization, Culture and the Business Environment	3
DMSB 706B	Internship in International Business	6
DMSB 711	Global Strategic Management I	2-3
DMSB 714	Managing the Multinational Enterprise	3
DMSB 715	Global Finance	3
DMSB 716	Global Marketing Management	3
DMSB 718	Global Supply Chain and Operations Management	3
DMSB 723	Leading Teams and Organizations	2-3
DMSB 741	Comparative Institutional Systems	3
DMSB 719	Information Systems	2
DMSB 740	Management of Human Capital	2
MGSC 777	Advanced Quantitative Methods in Business	3

## Select from the Following (12 Hours)

### Language Track

The Language Track consists of, but is not limited to, Arabic, Chinese, Japanese, Spanish, French, German and Portuguese.

Candidates in the language tracks will complete 12 credit hours of the following courses:

- DMSB 700
- DMSB 703
- DMSB 705

Candidates in the Arabic, Chinese, and Japanese tracks must also complete a prescribed overseas curriculum to meet the degree requirements. These three language tracks are full time programs that may require 36 months to complete. In such cases, students spend approximately one-and-a-half years abroad developing language competency and cultural understanding and completing their internship.

Candidates in the Language Track who demonstrate language capability to waive DMSB 700 or DMSB 703 must take additional Global track electives as approved by the Full-Time MBA Program office in place of the waived courses.

### Global Track

Candidates in the Global Track will complete 12 credit hours of the following:

Course	Title	Credits
Approved elective courses		6
DMSB 708	Global Business Issues I	6
<b>Total Credit Hours</b>		<b>12</b>

## European Track

*Note: As of 2008, the European track is no longer admitting students.*

Students with significant work experience may not need the on-the-job training that an international internship offers. To meet the needs of these students, the Moore School of Business has developed a joint program with the Wirtschaftsuniversität Wien (WU-Wien, Vienna Economics and Business University), Austria's leading business school. This all-English, 15-month program builds on the best of European and American management education.

Students gain international experience by taking classes at the WU-Wien for six months. Outstanding faculty from both institutions teach the internationalized business core. A distinguished speakers series and field trips reinforce material learned in class with actual European business practices. After finishing the core classes, students take two semesters of elective classes at the University of South Carolina along with students in the language and global tracks who have just returned from their internships.

### Required Courses taken at WU-Wien

Course	Title	Credits
DMSB 701	Introduction to the European Union	1
DMSB 711	Global Strategic Management I	2-3
DMSB 712	Quantitative Methods in Business	2-3
DMSB 713	Global Economics	3
DMSB 714	Managing the Multinational Enterprise	3
DMSB 715	Global Finance	3
DMSB 716	Global Marketing Management	3
DMSB 717	Management Accounting in the Global Environment	2-3
DMSB 718	Global Supply Chain and Operations Management	3
DMSB 719	Information Systems	2
DMSB 721	Global Entrepreneurship	1.5
DMSB 722	Globalization and Corporate Responsibility	1.5
DMSB 723	Leading Teams and Organizations	2-3
<b>Total Credit Hours</b>		<b>29-33</b>

### Elective Courses Taken at the Moore School of Business (21 Hours)

Electives are chosen from the list of approved elective offerings of the Moore School of Business.

## International Business, M.I.B.

The M.I.B. program is an interdisciplinary program that equips students with the tools needed to analyze the cultural, legal, economic and political forces that profoundly shape global business. Our highly customizable program allows students to select from functionally based courses to hone relevant expertise for their future career.

## Learning Outcomes

- Students will have knowledge of diverse institutional arrangements around the globe.

- Students will have understanding the impact of government policies on business.
- Students will have knowledge of tools and concepts associated with complex negotiation skills.
- Students will have knowledge of governance-related issues.

## Admission

Requirements for admission to the program conform to the general regulations of The Graduate School and the accreditation standards of the Association to Advance Collegiate Schools of Business International (AACSB International). Applicants submit the Moore School of Business application, an official transcript of their complete academic record, two letters of reference and may potentially need a competitive score on the GMAT or GRE.

International applicants whose native language is not English may be required to submit a satisfactory score on the TOEFL or the IELTS International Academic Course Type 2 Exam. Otherwise-qualified candidates are required to achieve a TOEFL score of at least iBT 100 or 600 paper-based or a score of at least 7.0 on the IELTS exam. The TOEFL is not required of international students who have a degree from an American college or university or who have earned a degree (in the top 25% of their class) fully administered in English. Graduates of foreign universities or colleges who have completed an academic program equivalent to a bachelor's degree from a U.S. institution are encouraged to apply for admission.

Please visit the Darla Moore School of Business ([https://www.sc.edu/study/colleges\\_schools/moore/](https://www.sc.edu/study/colleges_schools/moore/)) website for admissions information.

## Degree Requirements (30 Hours)

### Core Courses (12 Hours)

Course	Title	Credits
IBUS 734	International Business Negotiations	3
IBUS 704	Comparative Corporate Governance	3
IBUS 705	Global Business Management	3
IBUS 706	Nations States, Regional Networks and Global Markets	3

**Total Credit Hours** 12

### Electives (18 Hours)

- These courses are chosen from the list of elective offerings approved by the program faculty director.

## International Finance, Certificate

The International Finance Certificate is a unique opportunity for those with interests or careers in finance and related fields to gain specialized knowledge and skills in international finance and investments. The certificate offers courses that analyze the international financial environment and the multinational corporation, financial management of multinational corporations, international investments and portfolio management, and international corporate governance.

### Certificate Requirements (12 Hours)

This program is currently restricted to students that are not already enrolled in a graduate degree program at the Darla Moore School of Business. To enroll in this graduate finance certificate, participants must have a bachelor's degree and have basic knowledge of and/

or professional experience in corporate finance and financial management. Those who lack such foundational knowledge will be required to complete a one-week intensive workshop about key finance concepts. To be awarded this certificate, participants must complete 12 credit hours as follows:

Course	Title	Credits
<b>Core Courses</b>		
IBUS 701	International Financial Management	3
IBUS 711	Global Corporate Valuation	3
IBUS 714	Global Equity Investments	3
<b>Elective Courses</b>		
Select three hours of the following:		3
IBUS 704	Comparative Corporate Governance	
IBUS 750	Exploring Global Business	
IBUS 790	Specialized Study in International Business	
<b>Total Credit Hours</b>		<b>12</b>

Note: Subject to approval by the Moore School International Finance certificate Committee, students may request that other courses be substituted for the courses above. The certificate provides relevant coursework to apply for graduate programs such as PMBA and MS in Finance. Subject to approval by the Moore School Graduate Program Committee, students will have the opportunity to transfer 9 credit hours into a Master program.



# COLLEGE OF EDUCATION

Department Website ([https://www.sc.edu/study/colleges\\_schools/education/](https://www.sc.edu/study/colleges_schools/education/))

Jon E. Pedersen, *Dean*

Thomas E. Hodges, *Executive Associate Dean for Faculty and Academic Affairs*

Michelle L. Bryan, *Chief Equity Officer & Associate Dean for Diversity, Equity and Inclusion*

Rob L. Dedmon, *Assistant Dean for Enrollment Management and Academic Program Development*

Ryan Inzana, *Assistant Dean for Business Operations and Chief Financial Officer*

Cindy Van Buren, *Assistant Dean for Professional Partnerships*

The College of Education is a member of the National Network for Education Renewal and the American Association of Colleges of Teacher Education. The College of Education is the anchor of the Professional Education Unit (PEU) of USC, which includes five other colleges/schools and carries full accreditation from the Council for the Accreditation of Educator Preparation (CAEP). The College of Education, in cooperation with the other colleges and schools of the PEU, prepares collaborative educational leaders and advocates, offering programs for teacher certification, counselor certification, and advanced degrees for educators.

## Admission

Regulations and requirements for admission to graduate study and graduate degree candidacy in the College of Education correspond to those of The Graduate School. Admission decisions in the College of Education are based on multiple indicators and vary by program. Application requirements for each program are specified on the Graduate School's prospective student page at [http://gradschool.sc.edu/prospective/graduate\\_programs.asp](http://gradschool.sc.edu/prospective/graduate_programs.asp)

## Progression in the College of Education

All students enrolled in graduate courses are subject to the academic regulations of The Graduate School. It is the responsibility of each student to be aware of these rules and regulations. In addition to The Graduate School's academic standards for progression, the College of Education stipulates that 12 hours of credit below a grade of B on graduate work while admitted to a College of Education graduate degree or certificate program will disqualify a student from continuation in and completion of that program. Individual program areas may have more stringent progression requirements.

Students enrolled in a graduate degree program in the College of Education will have a maximum of two opportunities to pass required progression assessments. These progression assessments include the master's comprehensive assessment, doctoral qualifying exam, doctoral comprehensive exam, and doctoral dissertation defense.

## Departments

- Educational Leadership Policies (p. 201)
- Educational Practice and Innovation, Ed.D. (p. 227)
- Educational Studies (p. 210)
- Initial Teacher Certification Programs (p. 241)

- Instruction and Teacher Education (p. 259)
- Physical Education (p. 274)

## Educational Leadership Policies

Peter Moyi, *Interim Chair*

### Programs

- Education Administration, Ed.S. (p. 204)
- Education Administration, M.Ed. (p. 205)
- Education Administration, Ph.D. (p. 206)
- Higher Education and Student Affairs, M.Ed. (p. 208)
- Higher Education Leadership, Certificate (p. 210)

### Courses

**EDAD 690 - Independent Study (1-3 Credits)**

**EDAD 718 - School and Community Relationships (3 Credits)**

Development of constructive relationships between schools and the communities they serve. Emphasis on research findings in communication.

**EDAD 719 - Interpersonal and Group Relations in Educational Administration (3 Credits)**

Emphasis on modern understanding of interpersonal and group relations derived from current research in educational administration.

**EDAD 795A - Practicum in School Administration (3 Credits)**

An internship in schools at the appropriate level for certification. Will include field experience seminars. Should be taken as last course in degree program.

**EDAD 795B - Practicum in School Administration (3 Credits)**

An internship in schools at the appropriate level for certification. Will include field experience seminars. Should be taken as last course in degree program.

**EDAD 795C - Practicum in School Administration (3 Credits)**

An internship in schools at the appropriate level for certification. Will include field experience seminars. Should be taken as last course in degree program.

**EDAD 826 - Professional Negotiation in Elementary and Secondary Schools (3 Credits)**

An advanced course designed for administrators and prospective administrators. Content for the course ranges from theoretical bases for negotiation through application of specific skills in the negotiating process. Also includes a survey of legislative enactments in various selected states.

**EDAD 890 - Independent Study (3 Credits)**

**EDAD 896 - Practicum in Educational Administration (3 Credits)**

Open primarily to students seeking district-level administrative experiences.

**EDHE 600 - Special Problems in Higher Education and Student Affairs (1-3 Credits)**

The course is designed to provide opportunities for the study of special topics in higher education and student affairs administration.

**EDHE 720 - Advanced Study in Adult Education (3 Credits)**

Review of the major tenets and theories prominent in the adult learning literature and examination of historical, social, political, economic, and cultural factors influencing contemporary adult learning.

**Prerequisites:** graduate course in adult learning or development.

**EDHE 730 - Evolution of Higher Education in America (3 Credits)**

Development of environments, institutions, and individuals relevant to American higher education since the 17th century. Covers foundational history as relevant to contemporary administration, students, faculty, curricula, and policies at institutional, state, and federal levels.

**EDHE 731 - Student Affairs in Higher Education (3 Credits)**

Objectives and philosophy of student affairs, organizations and administration of student affairs divisions, and current trends and issues.

**EDHE 732 - The American College Student (3 Credits)**

Study of theories of college student development and learning and application of theories to enhance administrative practices in American higher education. Also examines the impact of the college environment on students.

**EDHE 733 - The Ideas of American Higher Education (3 Credits)**

Analysis of competing ideas of higher education with the purpose of helping students construct consistent sets of beliefs about values in higher education as a guide to understanding administrative and academic decisions.

**Prerequisites:** EDHE 730.

**EDHE 734 - The Community/Technical College (3 Credits)**

Introduction to historical and current events shaping two-year college missions, programs, clientele, and services. Preparation to assume student services and instructional positions within two-year colleges.

**EDHE 735 - Academic Advising in Higher Education (3 Credits)**

A comprehensive introduction to the field of academic advising with special emphasis on the topic Appreciative Advising.

**EDHE 736 - Financial Aspects of Higher Education (3 Credits)**

Survey of principles and practices of financing higher education institutions, including revenue generation and asset allocation. The course reviews methods of budgeting and business processes utilized by colleges and universities.

**EDHE 737 - Legal Aspects of Higher Education (3 Credits)**

Especially for faculty members and administrators in post-secondary institutions. Emphasis on techniques of legal research, constitutional provisions, statutory laws, court decisions, and regulations as they affect administration of higher education.

**EDHE 738 - Principles of College Teaching (3 Credits)**

Designed for prospective teachers in institutions of higher education. Considers the practice of teaching from philosophical, empirical, conceptual, and practical vantage points to prepare instructors for a changing and diverse student population.

**EDHE 739 - Seminar on Diversity in Higher Education (3 Credits)**

Survey of major topics related to social justice, diversity and inclusion in post-secondary institutions.

**EDHE 740 - Equity and Access in Higher Education (3 Credits)**

The legal, educational and public policy issues that affect access to higher education in America.

**EDHE 741 - Seminar on Ethical Issues in Higher Education (3 Credits)**

Examination of contemporary ethical issues and problems confronted by higher education administrators.

**EDHE 747 - Program Design and Implementation (3 Credits)**

An analysis of the theories, processes, and issues underlying the design and implementation of programs for learners in a post-secondary or professional context.

**EDHE 748 - Staff Development and Training (3 Credits)**

Review of the history, concepts, current techniques, and issues in staff development and training examination and application of skills required by the training practitioner and learning specialist.

**EDHE 790 - Independent Study (1-3 Credits)**

Independent Study Contract required.

**EDHE 799 - Thesis Preparation (1-9 Credits)****EDHE 830 - Organization, Administration, and Governance of Higher Education (3 Credits)**

Application of organization and administrative theory to post-secondary institutions of education, with emphasis on policy implementation.

**EDHE 831 - Internship in Higher Education and Student Affairs (3-6 Credits)**

Internship experience in higher education and student affairs offices. Students are placed in college, university, or agency administration offices under joint supervision of administrative personnel of these offices and faculty members. Prospectus must be submitted at least one month before start of the internship.

**EDHE 832 - Special Topics in Higher Education (3 Credits)**

Selected topical problems in higher education for advanced graduate students interested in the administration of higher education or college teaching. Possible topics include, evaluation, accountability, management, the learning society, the financial crisis, coordination vs. autonomy. May be used on a program of study up to three times.

**EDHE 833 - Contemporary Trends/Issues in Higher Education (3 Credits)**

Overview of the major trends and issues confronting American higher education.

**EDHE 834 - Internship in College Teaching (3-6 Credits)**

Designed to provide opportunity for supervised teaching experience in 2-year and 4-year institutions of higher education. Student will intern as teacher with day-to-day supervision by an experienced instructor. Weekly seminar on campus.

**Prerequisites:** EDHE 738.

**EDHE 835 - Leadership in Higher Education (3 Credits)**

Leadership theory and practice as applied to programs, units, and institutions in higher education. Addresses leadership strategies, options, characteristics, traits, and styles.

**EDHE 837 - Higher Education and Student Affairs Practicum I (3 Credits)**

Supervised experiences in different aspects of higher education and student affairs administration through work in various administrative offices at USC and other colleges.

**EDHE 838 - Higher Education and Student Affairs Practicum II (3 Credits)**

Additional opportunities for supervised experiences in higher education and student affairs administration.

**Prerequisites:** EDHE 837.

**EDHE 839 - Institutional Assessment in Higher Education (3 Credits)**

Concepts, models, and practice of institutional assessment. Student participation in an actual assessment project.

**EDHE 851 - Comparative Higher Education (3 Credits)**

Introduces students to the study of higher education in other countries, including policy and governance, finance, student life, the professoriate and related issues in comparative perspective. Includes a study abroad component with additional fees.

**EDHE 890 - Independent Study (1-3 Credits)**

Restricted to doctoral students. Independent Study Contract required.

**EDHE 899 - Dissertation Preparation (1-12 Credits)****EDLP 517 - Law and Policy Studies in Education (3 Credits)**

Policy issues affecting public and private educational institutions across the PK-20 continuum (pre-school through higher education).

**EDLP 520 - The Teacher as Manager (3 Credits)**

To help teachers, principals, and other personnel solve school problems by identifying and applying selected management techniques.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

**Experiential Learning:** Experiential Learning Opportunity

**EDLP 525 - Resources for Teaching and Learning (3 Credits)**

An introduction to educational technology, its increasing importance in the total school program, and its relationship to learning theories and communication.

**EDLP 601 - The Effective Teacher (3 Credits)**

Use of theory and research to understand and improve classroom teaching. Emphasis on teacher reflection and decision-making. The administrative role in enhancing effectiveness is highlighted.

**EDLP 690 - Independent Study (1-3 Credits)****EDLP 700 - Introduction to Educational Administration (3 Credits)**

A survey of basic principles of school administration, the conceptual and structural organization of public education, and the educational governance at the federal, state, and local levels.

**EDLP 701 - School Leadership (3 Credits)**

A study of interpersonal relations and communication within an educational organization and between the school and the community.

**EDLP 702 - School Personnel Administration (3 Credits)**

Personnel management in the public schools with attention to such issues as teacher supply, recruitment, selection, staff development, supervision, teacher welfare, legal rights/liabilities of school personnel.

**EDLP 703 - Supervision of Instruction (3 Credits)**

An introduction to the functioning of an educational supervisor. Emphasis on the improvement of instruction and instructional programs.

**EDLP 704 - School Finance and Business Management (3 Credits)**

Financial and business management functions of school administration. Local/state/national funding issues, economics and politics of school finance, budget preparation, accounting/auditing/plant operation/maintenance from school level.

**Prerequisites:** At least two of the following EDLP 700, EDLP 701, EDLP 702, EDLP 703.

**EDLP 705 - Legal Basis of Educational Organization and Administration (3 Credits)**

Emphasis on techniques of legal research, the legal relationships between the federal and state government as they relate to school district organization and administration, as well as legal case studies in all major areas of administrative concern.

**Prerequisites:** At least two of the following EDLP 700, EDLP 701, EDLP 702, EDLP 703.

**EDLP 706 - The Principalship (3 Credits)**

Principles, problems, competencies, and practices involved in the administration of schools.

**Prerequisites:** Completion 15 hours of EDLP courses prior to enrolling.

**Corequisite:** one of EDLP 707A, EDLP 707B, EDLP 708A, EDLP 708B, EDLP 709A or EDLP 709B.

**EDLP 707A - The Elementary School Principal in Practice I (3 Credits)**

One of two courses in a required two-semester internship in the elementary schools.

**Corequisite:** EDLP 706.

**EDLP 707B - The Elementary School Principal in Practice II (3 Credits)**

One of two courses in a required two-semester internship in the elementary schools.

**Corequisite:** EDLP 706.

**EDLP 708A - The Middle School Principal in Practice I (3 Credits)**

One of two courses in a required two-semester internship in the middle schools.

**Corequisite:** EDLP 706.

**EDLP 708B - The Middle School Principal in Practice II (3 Credits)**

One of two courses in a required two-semester internship in the middle schools.

**Corequisite:** EDLP 706.

**EDLP 709A - The High School Principal in Practice I (3 Credits)**

One of two courses in a required two-semester internship in the high schools.

**Corequisite:** EDLP 706.

**EDLP 709B - The High School Principal in Practice II (3 Credits)**

One of two courses in a required two-semester internship in the high schools.

**Corequisite:** EDLP 706.

**EDLP 734 - Improvement Science and Action Research (3 Credits)**

Using action research strategies and an improving science framework for continuous improvement.

**EDLP 737 - Anti-racist Leadership (3 Credits)**

An introduction to ideas supporting anti-racist educational leadership across the P-20 educational pipeline. Specific topics include contested definitions of racism, policy, praxis, and anti-racist research, scholarship and leadership.

**EDLP 751 - Advanced School Law (3 Credits)**

A seminar designed to give teachers and school administrators an opportunity to explore key legal issues.

**Prerequisites:** EDLP 705.

**EDLP 752 - Computer Management in Educational Institutions (3 Credits)**

Open to advanced graduate students of education. History of the management, movement, and application of techniques and processes for managing the modern educational institution, emphasizing computer technology.

**EDLP 753 - Advanced Methods of Instructional Supervision (3 Credits)**

An analysis of leadership techniques necessary to produce instructional improvement in educational organizations and of the technical methodology that distinguishes instructional supervision from other positions of school leadership.

**Prerequisites:** EDLP 703 or equivalent and employment in a position requiring supervisory responsibilities.

**EDLP 754 - Educational Finance (3 Credits)**

A study of principles of financing public education, analyses of revenue sources from all levels of government, existing plan of financing and possible alternatives for financing schools from district level.

**Prerequisites:** EDLP 704.

**EDLP 755 - Educational Policy Analysis (3 Credits)**

An introduction to policy making in education with emphasis on the local and state levels of policy formation.

**Prerequisites:** EDLP 705.

**EDLP 756 - The Superintendency (3 Credits)**

A two-semester course on the district superintendency.

**Prerequisites:** EDLP 706 and admission to EdS or PhD program.

**Corequisite:** EDLP 757A.

**EDLP 757A - The Superintendent in Practice I (3 Credits)**

The first of two courses in a required two-semester internship in the district superintendency.

**Prerequisite or Corequisite:** EDLP 706, EDLP 756, and admission to EdS or PhD program.

**EDLP 757B - The Superintendent in Practice II (3 Credits)**

The second of two courses in a required two-semester internship in the district superintendency.

**Prerequisite or Corequisite:** EDLP 757A and admission to the EdS or PhD program.

**EDLP 758 - School Building Planning (3 Credits)**

Study of the problems involved and the procedures utilized in a comprehensive approach to planning and constructing school plants, the personnel involved and the roles they play, and the problems related to the long-term financing of such facilities.

**Prerequisites:** Admission to EdS or PhD program.

**EDLP 799 - Thesis Preparation (1-9 Credits)****EDLP 803 - Administrative Evaluation and Decision-Making (3 Credits)**

A study of the requirements, practices, problems, and opportunities of administrative evaluation of programs and personnel as required by state and federal educational legislation.

**Prerequisites:** Admission to EdS or PhD program.

**EDLP 804 - Advanced Educational Finance (3 Credits)**

A study of funding schemes, the economics of financing, and construction and defense of a school district budget. Microcomputers are utilized.

**Prerequisites:** EDLP 704 and EDLP 754 and PhD candidate.

**EDLP 805 - Advanced Educational Policy Analysis (3 Credits)**

Advanced study of policy making at the federal level. The class will include a mandatory week-long stay in Washington, D.C.

**Prerequisites:** EDLP 705 and EDLP 755 and PhD candidate.

**EDLP 806 - Theories of Educational Leadership (3 Credits)**

Organization, leadership, motivation, and change theories as they apply to educational agencies and institutions.

**EDLP 807 - Seminar in Selected Topics in Educational Administration (3 Credits)**

Selected topics in educational administration in either finance, administration, supervision, evaluation, policy, and financial planning/management.

**Prerequisites:** Admission to doctoral program.

**EDLP 808 - Field Problems in Educational Administration: The Literature (1-3 Credits)**

This course is designed to help students identify a research literature that provides the context for their own dissertation research. Students will conduct a systematic review of this literature in order to refine their questions and methods for their dissertation research, and to build towards their own dissertation proposal and literature review chapter.

**EDLP 809 - Field Problems in Educational Administration (1-3 Credits)**

Opportunity for in-depth study of selected field problems in educational administration, utilizing research and other techniques.

**EDLP 890 - Independent Study (3 Credits)**

Independent study form required for authorization.

**EDLP 899 - Dissertation Preparation (1-12 Credits)**

## Education Administration, Ed.S.

The Ed.S. degree is offered for students seeking certification as public school superintendents.

### Learning Outcomes

- Candidates who complete the program are educational leaders who have the knowledge and ability to promote the success of all students by facilitating the development, articulation, implementation, and stewardship of a district vision of learning supported by the school community.
- Candidates who complete the program are educational leaders who have the knowledge and ability to promote the success of all students by promoting a positive district culture, providing effective instructional programs, applying best practice to student learning, and designing comprehensive professional growth plans for staff.
- Candidates who complete the program are educational leaders who have the knowledge and ability to promote the success of all students by managing the organization, operations, and resources of a district in a way that promotes a safe, efficient, and effective learning environment.
- Candidates who complete the program are educational leaders who have the knowledge and ability to promote the success of all students by collaborating with families and other community members, responding to diverse community interests and needs, and mobilizing community resources.
- Candidates who complete the program are educational leaders who have the knowledge and ability to promote the success of all students by acting with integrity, fairly, and in an ethical manner.
- Candidates who complete the program are educational leaders who have the knowledge and ability to promote the success of all students by understanding, responding to, and influencing the larger political, social, economic, legal, and cultural context.
- Internship. The internship provides significant opportunities for candidates to synthesize and apply the knowledge and practice and

develop the skills identified in Standards 1-6 through substantial, sustained, standards-based work in real settings, planned and guided cooperatively by the institution and school district personnel for graduate credit.

## Admission

In addition to The Graduate School application requirements, applicants must complete the EDLP application supplement.

## Degree Requirements (33 Post-Masters Hours)

A minimum of 33 hours beyond the master's degree is required.

### Certification

The Ed.S. in Education Administration satisfies the academic requirements for certification as a superintendent in South Carolina.

### Coursework

Coursework is designed to ensure that at the completion of the program the student can demonstrate the knowledge, skills, and dispositions developed in the following:

#### Area One (21 Hours)

Educational Administration

Course	Title	Credits
EDLP 753	Advanced Methods of Instructional Supervision	3
EDLP 754	Educational Finance	3
EDLP 755	Educational Policy Analysis	3
EDLP 756	The Superintendency	3
EDLP 757A	The Superintendent in Practice I	3
EDLP 757B	The Superintendent in Practice II	3
EDLP 758	School Building Planning	3
<b>Total Credit Hours</b>		<b>21</b>

#### Area Two (9 Hours)

A cognate is defined as an academic area outside the Department of Educational Leadership and Policies. All cognate courses must have prior approval of the student's advisor. Students are encouraged to select cognates from the following areas: special services, instruction, behavioral science, social science, and management science. At least 6 hours must be completed in a single academic discipline (e.g., business administration, psychology).

Course	Title	Credits
Select nine hours of course work in a cognate area		9
<b>Total Credit Hours</b>		<b>9</b>

#### Area Three (3 Hours)

A 3-hour course in research/measurement/assessment to be selected with the approval of the advisor. This course is in addition to the research course taken at the master's level. Students with no research courses at the master's level will be required to take two research-related courses in the Ed.S. degree program.

Course	Title	Credits
Select three hours of course work in educational research		3
<b>Total Credit Hours</b>		<b>3</b>

Note: Courses taken in a master's degree program cannot be used to fulfill Ed.S. requirements.

## Education Administration, M.Ed.

### Learning Outcomes

- Candidates who complete the program are educational leaders who have the knowledge and ability to promote the success of all students by facilitating the development, articulation, implementation, and stewardship of a school vision of learning supported by the school community.
- Candidates who complete the program are educational leaders who have the knowledge and ability to promote the success of all students by promoting a positive school culture, providing an effective instructional program, applying best practice to student learning, and designing comprehensive professional growth plans for staff.
- Candidates who complete the program are educational leaders who have the knowledge and ability to promote the success of all students by managing the organization, operations, and resources in a way that promotes a safe, efficient, and effective
- Candidates who complete the program are educational leaders who have the knowledge and ability to promote the success of all students by collaborating with families and other community members, responding to diverse community interests and needs, and mobilizing community resources.
- Candidates who complete the program are educational leaders who have the knowledge and ability to promote the success of all students by acting with integrity, fairly, and in an ethical manner
- Candidates who complete the program are educational leaders who have the knowledge and ability to promote the success of all students by understanding, responding to, and influencing the larger political, social, economic, legal, and cultural context.
- Internship. The internship provides significant opportunities for candidates to synthesize and apply the knowledge and practice and develop the skills identified in Standards 1-6 through substantial, sustained, standards-based work in real settings, planned and guided cooperatively by the institution and school district personnel for graduate credit.

## Admission

In addition to The Graduate School's application requirements, applicants must complete the EDLP application supplement.

## Degree Requirements (36 Hours)

*Must be completed no more than six years prior to graduation.*

### Certification

The M.Ed. in CD-12 Education Administration incorporates the academic requirements for certification as a principal and supervisor in South Carolina.

## Coursework

Coursework is designed to ensure that at the completion of the program the student can demonstrate the knowledge, skills, and dispositions developed in the following course work:

### Area A - Education Administration (27 Hours)

Course	Title	Credits
EDLP 700	Introduction to Educational Administration	3
EDLP 701	School Leadership	3
EDLP 702	School Personnel Administration	3
EDLP 703	Supervision of Instruction	3
EDLP 704	School Finance and Business Management	3
EDLP 705	Legal Basis of Educational Organization and Administration	3
EDLP 706	The Principalship	3
Select one of the following areas:		6
<b>Elementary School</b>		
EDLP 707A	The Elementary School Principal in Practice I	
EDLP 707B	The Elementary School Principal in Practice II	
<b>High School</b>		
EDLP 709A	The High School Principal in Practice I	
EDLP 709B	The High School Principal in Practice II	
<b>Total Credit Hours</b>		<b>27</b>

Note:

1. It is recommended that students begin with one of the following courses: EDLP 700, EDLP 701, EDLP 702, and EDLP 703. However, there are no prerequisites to courses in the program other than the principalship block (see no. 3 below).
2. EDLP 707A and EDLP 707B or EDLP 709A and EDLP 709B must be taken concurrently with EDLP 706 over a two-semester period.
3. Students must have completed at least 15 hours of EDLP courses prior to enrolling in EDLP 706, EDLP 707A and EDLP 707B, EDLP 708A, or EDLP 709A and EDLP 708B. Three of these hours may be taken concurrently in the semester in which the principalship course begins.

### Area B (9 Semester Hours of Related Courses) Curriculum Course (3 hours)

A graduate credit course in curriculum to be selected with the approval of the advisor. Recommended:

Course	Title	Credits
EDCS 725	Principles of Curriculum Construction	3
<b>Total Credit Hours</b>		<b>3</b>

### Research/Measurement/Assessment Course (3 hours)

A graduate credit course in research/measurement/assessment to be selected with the approval of the advisor. Recommended:

Course	Title	Credits
EDRM 700	Introduction to Research in Education	3
or EDRM 723	Classroom Assessment Methods	
<b>Total Credit Hours</b>		<b>3</b>

### Exceptionalities or Human Growth and Development Course (3 hours)

A graduate credit course in exceptionalities (e.g. exceptional children, special education) or in human growth and development to be selected with the approval of the student's advisor. Recommended:

Course	Title	Credits
EDEX 523	Introduction to Exceptional Children	3
or EDPY 705	Human Growth and Development	
<b>Total Credit Hours</b>		<b>3</b>

## Comprehensive Examination

Students must pass a comprehensive examination.

## Education Administration, Ph.D.

The Ph.D. degree is offered in two program concentrations: higher education administration and CD-12 education administration. Each prepares students for a variety of leadership positions in institutions and agencies related to the emphasis of their studies. Those earning the degree serve as university administrators, school superintendents and principals, administrators in school districts and government agencies, college and university faculty, and other related leadership capacities.

## Learning Outcomes

### CD-12 Track

- Cultural Competence. Advanced program candidates demonstrate a high level of competence in understanding and responding to diversity of culture, language, and ethnicity.
- Knowledge and Application of Ethical Principles. Advanced program candidates demonstrate in-depth knowledge and thoughtful application of the Code of Ethical Conduct and other guidelines relevant to their professional role
- Communication Skills. Advanced program candidates possess a high level of oral, written, and technological communication skills, with specialization for the specific professional role(s) emphasized in the program. For programs for the advanced preparation of teachers, candidates meet ISTE standards. For doctoral programs, candidates are prepared to publish and present at conferences.
- Mastery of Relevant Theory and Research. Advanced program candidates demonstrate in-depth, critical knowledge of the theory and research relevant to the professional role(s) and focus area(s) emphasized in the program.
- Skills in Identifying and Using Professional Resources. Advanced program candidates demonstrate a high level of skill in identifying and using the human, material, and technological resources needed to perform their professional roles and to keep abreast of the field's changing knowledge base.
- Inquiry Skills and Knowledge of Research Methods. Using systematic and professionally accepted approaches, advanced program candidates demonstrate inquiry skills, showing their ability to investigate questions relevant to their practice and professional goals.
- Skills in Collaborating, Teaching, and/or Mentoring. Advanced program candidates demonstrate the flexible, varied skills needed to work collaboratively and effectively with other adults in professional roles.
- Advocacy Skills. Advanced program candidates demonstrate competence in articulating and advocating for sound professional

practices and public policies for the positive development and learning of all students.

- **Leadership Skills.** Advanced program candidates reflect on and use their abilities and opportunities to think strategically, build consensus, create change, and influence better outcomes for students, families, and the profession.
- **Program Evaluation in Educational Leadership.** Students enrolled in the PhD in Educational Leadership (CD-12 emphasis) demonstrate in-depth knowledge of methodologies for program evaluation and possess ethical leadership that is characterized by appreciation of diversity of perspective and approach.
- **Application of Research Paradigms in Educational Leadership:** Students enrolled in the PhD in Educational Leadership (CD-12 emphasis) demonstrate an awareness, understanding and application of multiple research methodologies that align with differing types of research questions.
- **Application of Original Research in Educational Leadership:** Students enrolled in the PhD in Educational Leadership (CD-12 emphasis) generate original research questions, apply appropriate research methodologies, and present findings of the independent research.

## Higher Education Track

- **Cultural Competence.** Advanced program candidates demonstrate a high level of competence in understanding and responding to diversity of culture, language, and ethnicity.
- **Knowledge and Application of Ethical Principles.** Advanced program candidates demonstrate in-depth knowledge and thoughtful application of the Code of Ethical Conduct and other guidelines relevant to their professional role.
- **Communication Skills.** Advanced program candidates possess a high level of oral, written, and technological communication skills, with specialization for the specific professional role(s) emphasized in the program. For programs for the advanced preparation of teachers, candidates meet ISTE standards. For doctoral programs, candidates are prepared to publish and present at conferences.
- **Mastery of Relevant Theory and Research.** Advanced program candidates demonstrate in-depth, critical knowledge of the theory and research relevant to the professional role(s) and focus area(s) emphasized in the program.
- **Skills in Identifying and Using Professional Resources.** Advanced program candidates demonstrate a high level of skill in identifying and using the human, material, and technological resources needed to perform their professional roles and to keep abreast of the field's changing knowledge base.
- **Inquiry Skills and Knowledge of Research Methods.** Using systematic and professionally accepted approaches, advanced program candidates demonstrate inquiry skills, showing their ability to investigate questions relevant to their practice and professional goals.
- **Skills in Collaborating, Teaching, and/or Mentoring.** Advanced program candidates demonstrate the flexible, varied skills needed to work collaboratively and effectively with other adults in professional roles.
- **Advocacy Skills.** Advanced program candidates demonstrate competence in articulating and advocating for sound professional practices and public policies for the positive development and learning of all students.
- **Leadership Skills.** Advanced program candidates reflect on and use their abilities and opportunities to think strategically, build consensus,

create change, and influence better outcomes for students, families, and the profession.

- Knowledge of current theories and models of institutional organization, administration, and governance.
- Knowledge of legal research, constitutional provisions, statutory laws, course decisions, and regulations as they affect administration of higher education.

## Admission

Applicants must complete the Graduate School application.

## Degree Requirements (51 Post-Masters Hours/36 Post-Specialist Hours)

The total number of hours required may vary depending on prior graduate coursework completed, but must be no less than the hours stated. Based on the curriculum described below, a program of study will be developed with the student's advisor and must be approved by the Graduate Director and the Dean of the Graduate School. Courses listed on the program of study must be completed no more than 10 years prior to graduation.

## Qualifying Examination

A writing sample, as one part of a three-part interview process, serves as the qualifying examination.

## Coursework

Coursework is designed to ensure that at the completion of the program the student can demonstrate the knowledge, skills, and dispositions developed in each of the following 4 areas.

### Area 1 - Doctoral Core Courses (15 Hours)

15 hours of required doctoral core courses. Required for students completing the Higher Education Administration and the CD-12 Education Administration concentrations.

Course	Title	Credits
EDLP 805	Advanced Educational Policy Analysis	3
EDLP 806	Theories of Educational Leadership	3
EDLP 807	Seminar in Selected Topics in Educational Administration	3
EDLP 808	Field Problems in Educational Administration: The Literature	3
EDLP 809	Field Problems in Educational Administration	3
<b>Total Credit Hours</b>		<b>15</b>

### Area 2 - Concentration Courses (15 Hours) CD-12 Education Administration Concentration

A minimum of 15 hours of coursework related to CD-12 education administration as approved by advisor. Possible courses include, but are not limited to the following:

Course	Title	Credits
EDLP 753	Advanced Methods of Instructional Supervision	3
EDLP 754	Educational Finance	3
EDLP 755	Educational Policy Analysis	3
EDLP 756	The Superintendency	3
EDLP 757A	The Superintendent in Practice I	3

EDLP 757B	The Superintendent in Practice II	3
EDLP 758	School Building Planning	3

### Higher Education Administration Concentration

15 hours of EDHE (or EDLP) coursework related to higher education administration. Possible courses include, but are not limited to the following:

Course	Title	Credits
EDHE 720	Advanced Study in Adult Education	3
EDHE 730	Evolution of Higher Education in America	3
EDHE 732	The American College Student	3
EDHE 734	The Community/Technical College	3
EDHE 736	Financial Aspects of Higher Education	3
EDHE 737	Legal Aspects of Higher Education	3
EDHE 738	Principles of College Teaching	3
EDHE 830	Organization, Administration, and Governance of Higher Education	3
EDHE 832	Special Topics in Higher Education <sup>1</sup>	3
EDHE 833	Contemporary Trends/Issues in Higher Education	3
EDHE 835	Leadership in Higher Education	3
EDHE 839	Institutional Assessment in Higher Education	3
EDHE 851	Comparative Higher Education	3

<sup>1</sup> Course topics may include, e.g., Ethics, Diversity in Higher Education, Equity & Access in Higher Education, Curriculum in Higher Education, Disability in Higher Education, Film & Fiction.

### Area 3 - Doctoral Research Cognate (9 Hours) Research Methods Requirement

9 hours in a doctoral research cognate area; courses must be post-master's 700- and 800-level outside the EDLP Department. Possible courses include, but are not limited to the following:

Course	Title	Credits
EDRM 710	Educational Statistics I	3
EDRM 711	Educational Statistics II	3
EDRM 724	Design and Analysis of Educational Surveys	3
EDFI 731	Qualitative Inquiry	3
EDFI 833	Narrative Inquiry	3
EDFI 836	Ethnography and Education	3
EDFI 837	Qualitative Case Study	3
SOCY 720	Survey of Research Methods	3

### Area 4 - Dissertation Preparation (12 Hours)

A minimum of 12 hours in courses to prepare the student for the dissertation:

Course	Title	Credits
EDLP 899	Dissertation Preparation	12

**Total Credit Hours**

**12**

### Comprehensive Examination

The comprehensive examination for the Ph.D. degree includes a written and oral examination.

### Dissertation

Every candidate for a doctoral degree is required to successfully complete and defend a dissertation. Prior to preparing a dissertation, a proposal is required. The dissertation proposal must be approved by the student's Dissertation Committee. The degree candidate must successfully defend the dissertation [oral defense] before his or her Dissertation Defense Committee.

## Higher Education and Student Affairs, M.Ed.

The master's degree in higher education and student affairs is designed to prepare individuals for positions in higher education institutions in areas such as admissions and records, academic administration, alumni affairs, career development and employer relations, international student programs, new student orientation, student activities, student advisement, student financial aid, student housing, and student judicial programs.

### Learning Outcomes

- **Cultural Competence.** Advanced program candidates demonstrate a high level of competence in understanding and responding to diversity of culture, language, and ethnicity.
- **Knowledge and Application of Ethical Principles.** Advanced program candidates demonstrate in-depth knowledge and thoughtful application of the Code of Ethical Conduct and other guidelines relevant to their professional role.
- **Communication Skills.** Advanced program candidates possess a high level of oral, written, and technological communication skills, with specialization for the specific professional role(s) emphasized in the program. For programs for the advanced preparation of teachers, candidates meet ISTE standards. For doctoral programs, candidates are prepared to publish and present at conferences.
- **Mastery of Relevant Theory and Research.** Advanced program candidates demonstrate in-depth, critical knowledge of the theory and research relevant to the professional role(s) and focus area(s) emphasized in the program.
- **Skills in Identifying and Using Professional Resources.** Advanced program candidates demonstrate a high level of skill in identifying and using the human, material, and technological resources needed to perform their professional roles and to keep abreast of the field's changing knowledge base.
- **Inquiry Skills and Knowledge of Research Methods.** Using systematic and professionally accepted approaches, advanced program candidates demonstrate inquiry skills, showing their ability to investigate questions relevant to their practice and professional goals.
- **Skills in Collaborating, Teaching, and/or Mentoring.** Advanced program candidates demonstrate the flexible, varied skills needed to work collaboratively and effectively with other adults in professional roles.
- **Advocacy Skills.** Advanced program candidates demonstrate competence in articulating and advocating for sound professional practices and public policies for the positive development and learning of all students.
- **Leadership Skills.** Advanced program candidates reflect on and use their abilities and opportunities to think strategically, build consensus,



create change, and influence better outcomes for students, families, and the profession.

## Specialized Competencies

- Higher Education and Student Affairs graduates should understand the history of higher education in America and how history shapes and informs the practice of higher education and student affairs administration today.
- Higher Education and Student Affairs graduates should be able to use developmental theory to increase their understanding of students' needs and plan appropriate learning interventions.
- Higher Education and Student Affairs graduates should select and be familiar with a sanction code of ethics that provides a foundation for their work.
- Higher Education and Student Affairs graduates should be able to conduct a sound research study or program evaluation.
- Higher Education and Student Affairs graduates should be able to identify students who need to be referred for additional resources and assistance, especially counseling.

## Admission

The faculty of the Higher Education and Student Affairs Program make recommendations for admission to The Graduate School based upon five criteria: academic record, GRE or MAT scores, related work and/or leadership experience, letters of recommendation, and the personal statement.

## Degree Requirements (39 Hours)

All master's degree candidates must complete at least 39 hours of course work. The curriculum includes 18 hours of required core courses. Students also select from one of two major program areas of concentration (higher education administration or student affairs administration) and must take 9 hours of required courses plus 9 additional hours in their area of concentration. Students must also complete 3 hours of elective coursework.

### Coursework

#### Required Core Courses (18 Hours)

Course	Title	Credits
EDHE 730	Evolution of Higher Education in America	3
EDHE 732	The American College Student	3
EDHE 737	Legal Aspects of Higher Education	3
EDHE 830	Organization, Administration, and Governance of Higher Education	3
EDHE 839 or EDCE 600	Institutional Assessment in Higher Education Communication Skills in Counseling	3
Select three hours in any graduate level research course with prior approval of the assigned academic advisor		3
<b>Total Credit Hours</b>		<b>18</b>

#### Area of Concentration (18 Hours)

##### Higher Education Administration

Course	Title	Credits
EDHE 734	The Community/Technical College	3
EDHE 736	Financial Aspects of Higher Education	3
EDHE 835	Leadership in Higher Education	3

Select nine additional EDHE or Higher Education Administration related hours selected with prior approval of the assigned academic advisor	9
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**Total Credit Hours 18**

##### Student Affairs Administration

Course	Title	Credits
EDHE 731	Student Affairs in Higher Education	3
EDHE 833	Contemporary Trends/Issues in Higher Education	3

##### A Practicum or Internship

Select one of the following:	3
EDHE 831	Internship in Higher Education and Student Affairs
EDHE 834	Internship in College Teaching
EDHE 837	Higher Education and Student Affairs Practicum I

Select nine additional EDHE or Student Affairs Administration related hours selected with prior approval of the assigned academic advisor

**Total Credit Hours 18**

##### Electives (3 Hours)

Course	Title	Credits
Select three additional hours selected with prior approval of the assigned academic advisor		3
<b>Total Credit Hours</b>		<b>3</b>

### Notes

#### Practicums and Internships

No more than 12 hours of practicum and internship courses may be taken for credit towards the degree program.

Students who received the 18-hour Graduate Certificate in Higher Education Leadership must complete the following 21 hours to earn the master's degree:

Course	Title	Credits
EDHE 730	Evolution of Higher Education in America	3
EDHE 830	Organization, Administration, and Governance of Higher Education	3
EDHE 833	Contemporary Trends/Issues in Higher Education	3
Select three hours in any graduate level research course with prior approval of the assigned academic advisor		3
Select nine elective hours selected with the approval of the assigned academic advisor		9
<b>Total Credit Hours</b>		<b>21</b>

### Timeframe for Degree Completion

All 39 hours must be completed within six years.

### Comprehensive Assessment

Each candidate must receive a passing evaluation of a portfolio submitted to the faculty that demonstrates mastery of program learning outcomes and competencies.

# Higher Education Leadership, Certificate

## Learning Outcomes

- **Cultural Competence.** Advanced program candidates demonstrate a high level of competence in understanding and responding to diversity of culture, language, and ethnicity.
- **Knowledge and Application of Ethical Principles.** Advanced program candidates demonstrate in-depth knowledge and thoughtful application of the Code of Ethical Conduct and other guidelines relevant to their professional role.
- **Communication Skills.** Advanced program candidates possess a high level of oral, written, and technological communication skills, with specialization for the specific professional role(s) emphasized in the program. For programs for the advanced preparation of teachers, candidates meet ISTE standards. For doctoral programs, candidates are prepared to publish and present at conferences.
- **Mastery of Relevant Theory and Research.** Advanced program candidates demonstrate in-depth, critical knowledge of the theory and research relevant to the professional role(s) and focus area(s) emphasized in the program.
- **Skills in Identifying and Using Professional Resources.** Advanced program candidates demonstrate a high level of skill in identifying and using the human, material, and technological resources needed to perform their professional roles and to keep abreast of the field's changing knowledge base.
- **Inquiry Skills and Knowledge of Research Methods.** Using systematic and professionally accepted approaches, advanced program candidates demonstrate inquiry skills, showing their ability to investigate questions relevant to their practice and professional goals.
- **Skills in Collaborating, Teaching, and/or Mentoring.** Advanced program candidates demonstrate the flexible, varied skills needed to work collaboratively and effectively with other adults in professional roles.
- **Advocacy Skills.** Advanced program candidates demonstrate competence in articulating and advocating for sound professional practices and public policies for the positive development and learning of all students.
- **Leadership Skills.** Advanced program candidates reflect on and use their abilities and opportunities to think strategically, build consensus, create change, and influence better outcomes for students, families, and the profession.

## Specialized Competencies

- Provide the knowledge and skills required of mid-level and above leaders in a community college system.
- Serve as an incentive for engaging graduates of the Certificate Program in terminal degree programs.

## Certificate Requirements (18 Hours)

The certificate in higher education leadership is open to faculty, administrators, and staff of technical colleges who hold a baccalaureate or higher degree.

## Coursework

Course	Title	Credits
EDHE 734	The Community/Technical College	3
EDHE 736	Financial Aspects of Higher Education	3
EDHE 737	Legal Aspects of Higher Education	3
EDHE 738	Principles of College Teaching	3
EDHE 835	Leadership in Higher Education	3
EDHE 839	Institutional Assessment in Higher Education	3
<b>Total Credit Hours</b>		<b>18</b>

## M.Ed. in Higher Education and Student Affairs

Students interested in subsequent enrollment in the M.Ed. in Higher Education and Student Affairs should note that all certificate and master's hours must be completed within six years to earn the M.Ed.

## Educational Studies

Erik Drasgow, *Chair*

## Programs

- Applied Behavior Analysis, M.Ed. (p. 220)
- Counselor Education, Certificate (Career Development Facilitator) (p. 221)
- Counselor Education, Ed.S. (p. 221)
- Counselor Education, Ph.D. (p. 226)
- Educational Psychology and Research, M.Ed. (p. 229)
- Educational Psychology and Research, Ph.D. (p. 230)
- Foundations of Education, Ph.D. (p. 233)
- Learning Design and Technologies, M.Ed. (Joint degree with USC Aiken) (p. 233)
- Play Therapy, Certificate (p. 235)
- Qualitative Research, Certificate (p. 235)
- Special Education, M.Ed. (p. 236)
- Special Education, Ph.D. (p. 239)

## Courses

### EDCE 502 - Guidance Techniques for Classroom Teachers (3 Credits)

### EDCE 503 - Family Counseling (3 Credits)

A comparative study of the major theories in the field of family counseling.

### EDCE 507 - Educators in Industry (3 Credits)

The course is designed to provide counselors, teachers, and administrators with increased awareness of a wide variety of work experiences.

### EDCE 510 - Introduction to Counseling (3 Credits)

Orientation to the profession of counseling including its historical, social, and cultural foundations. Declaration of the minor in counseling or admission to the Ed.S. in Counselor Education.

### EDCE 520 - Wellness and Mental Health (3 Credits)

An overview of the characteristics of optimal holistic wellness and human functioning. Practical application of theoretically and empirically supported wellness models and interventions to enhance social, emotional, mental, physical, and spiritual well-being.

**EDCE 555 - Theory and Practice of College Mentoring (3 Credits)**

Emphasis on current professional approaches to college mentoring and development of leadership and mentoring skills. Students must participate in Minority Assistance Program. Upper division undergraduate standing or admission to a graduate program and consent of instructors.

**EDCE 570 - Seminar in Counseling (3 Credits)**

Declaration of the minor in counseling.

**EDCE 600 - Communication Skills in Counseling (3 Credits)**

Human relations principles applied to the counseling interview.

**EDCE 650 - Counseling Student Athletes (3 Credits)**

Issues facing student athletes regarding their personal and career development beyond athletics.

**Cross-listed course:** PEDU 660

**EDCE 690 - Independent Study (1-3 Credits)****EDCE 700 - Cross-Cultural Counseling (3 Credits)**

Basic concepts and procedures related to cross-cultural counseling; relevant issues which constitute the core of counseling effectively from a cross-cultural perspective; the development of specific learning strategies through which counselor trainees acquire fundamental skills of cross-cultural counseling. This course number and title will be offered with a specific perspective each time, such as blacks, women, ethnic groups, etc.

**EDCE 701 - Counseling Parents of Exceptional Children (3 Credits)**

Principles and techniques of counseling parents of exceptional children.

**EDCE 702 - Counselor as Consultant (3 Credits)**

History, theories, and practices of consultation and counseling program coordination.

**Prerequisites:** EDCE 510.

**EDCE 704 - Theory and Procedures of Group Counseling (3 Credits)**

A comparative study of major theories of group counseling and related research with emphasis on group interaction within a counseling setting. Laboratory applications expedite understanding of theory and practice.

**Prerequisites:** EDCE 721, EDCE 722.

**EDCE 705 - Educational Measurement (3 Credits)**

The history of educational and psychological measurement. Consideration of concepts such as validity and reliability of educational and psychological measures, the rationale of the development and use of instruments for educational purposes.

**EDCE 706 - Assessment in Counseling (3 Credits)**

Knowledge and application of assessment techniques and instruments utilized in school, career, individual, and family counseling.

**EDCE 707 - Career Development (3 Credits)**

Career development principles and practices in school and other settings.

**EDCE 708 - Critical Issues in School Counseling (3 Credits)**

Study of school counseling programs, including school counseling issues; program development, implementation, and evaluation; and current trends.

**EDCE 709 - Counseling Through Play (3 Credits)**

Interpreting play and using play techniques to facilitate the counseling process.

**Prerequisites:** EDCE 510, EDCE 600.

**EDCE 710 - Professional, Legal and Ethical Issues in Counseling (3 Credits)**

Ethical concerns and legal mandates and constraints related to the counseling profession including issues regarding education, supervision, research, and policy development.

**Prerequisites:** EDCE 510.

**EDCE 711 - Advanced Family Counseling (3 Credits)**

Advanced study of children within the context of family counseling theories.

**Prerequisites:** EDCE 503 or equivalent.

**EDCE 712 - Comprehensive Developmental School Counseling (3 Credits)**

Study of the elements of and practices in a comprehensive developmental school counseling program.

**Prerequisites:** EDCE 510.

**EDCE 714 - Clinical Mental Health Counseling (3 Credits)**

Surveying required knowledge and skills for the clinical mental counselor.

**EDCE 715 - Sexuality Counseling (3 Credits)**

An overview of a family systems approach to understanding and treating clinical issues related to human sexuality.

**Prerequisites:** EDCE 503, EDPY 705.

**EDCE 716 - Leaders in Counselor Education (3 Credits)**

Survey and analysis of the works of prominent leaders in counselor education (i.e., behavioral, cognitive, existential approaches). Course content varies and will be announced in the schedule of classes by title.

**EDCE 717 - Career Practicum (3 Credits)**

A supervised experience in an approved setting that develops and assesses the individual's facilitation skills in career development.

**Prerequisites:** EDCE 502, EDCE 600, EDCE 700, EDCE 706, and EDCE 707.

**EDCE 720 - Theories of Counseling (3 Credits)**

An introduction to counseling theories and models.

**Prerequisites:** EDCE 600.

**EDCE 721 - Techniques of Counseling (3 Credits)**

Emphasis on development of techniques for assisting clients' personal, social, spiritual, and career development.

**Prerequisites:** EDCE 510, EDCE 700, EDCE 712, and EDCE 720.

**EDCE 722 - Group Procedures in Counseling (3 Credits)**

Group process and dynamics applied to counseling in group settings.

**Prerequisites:** EDCE 510 and EDCE 720.

**EDCE 723 - Counseling Supervision Theory (3 Credits)**

Comparative study of major approaches to counseling supervision and related research with emphasis on historical foundations of supervision, supervisee characteristics, and application of concepts and techniques to specific practice settings.

**EDCE 724 - Techniques of Clinical Mental Health Counseling (3 Credits)**

Assisting clients with personal, social, spiritual and career development.

**Prerequisites:** EDCE 600 and EDCE 720.

**EDCE 730 - Counseling and Spirituality (3 Credits)**

Current knowledge about counseling and spirituality, including theories of spiritual development, assessment of spirituality, and best practices interventions with children and families.

**EDCE 799 - Thesis Preparation (1-9 Credits)**

**EDCE 800 - Special Topics in Counseling (1-3 Credits)**

Advanced study of children within the context of family counseling theories.

**Prerequisites:** EDCE 503 or equivalent.

**EDCE 801 - Advanced Techniques in School Counseling (3 Credits)**

This course is designed to help students understand the connection between theory and practice and give them an opportunity to try out this new knowledge. This additional work in both theory and practice will help students to be better prepared for their practicum and internship experiences.

**Prerequisites:** EDCE 721.

**EDCE 802 - Practicum in Human Development and Counseling (3 Credits)**

Supervised counseling experience in an approved institution or agency.

**EDCE 802E - Elementary School Counseling Practicum (3 Credits)**

Supervised counseling experience in an approved elementary school setting. Approved elementary school counseling practicum application.

**EDCE 802F - Marriage, Couples, and Family Counseling Practicum (3-6 Credits)**

Supervised counseling experience in an approved institution or agency. Full admission into a counselor program and program specifics as approved by faculty.

**EDCE 802P - Practicum in Play Therapy (3 Credits)**

Supervised counseling experience in an approved setting focusing on play therapy, counseling through play and expressive arts therapy.

**Prerequisites:** EDCE 709; EDCE 809; EDPY 705; EDCE 810; EDCE 811.

**EDCE 802S - Secondary School Counseling Practicum (3 Credits)**

Supervised counseling experience in an approved secondary school setting. Approved secondary school counseling practicum application.

**EDCE 803 - Practicum in Clinical Mental Health Counseling (3 Credits)**

Supervised counseling experience in an approved mental health agency or practice. Full admission into the counselor education program and program specific courses as approved by program faculty.

**EDCE 804 - Internship in Clinical Mental Health Counseling (3-6 Credits)**

Supervised counseling experience in an approved clinical mental health setting.

**Prerequisites:** EDCE 803.

**EDCE 805 - Counseling Internship (3-6 Credits)**

Counseling experience will be gained in a work setting similar to that in which a counselor will eventually be employed. Internship application must be submitted early in the semester preceding enrollment.

**Prerequisites:** EDCE 802.

**EDCE 805E - Elementary School Counseling Internship (3-6 Credits)**

Counseling experience in an elementary school setting.

**Prerequisites:** EDCE 802S and approved internship application.

**EDCE 805F - Marriage, Couples and Family Counseling Internship (3-6 Credits)**

Counseling experience will be gained in a work setting similar to that in which a counselor will eventually be employed.

**Prerequisites:** EDCE 802F and approved internship application.

**EDCE 805S - Secondary School Counseling Internship (3-6 Credits)**

Supervised counseling experience in an approved secondary school setting.

**Prerequisites:** EDCE 802E.

**EDCE 807 - Advanced Career Development (1-3 Credits)**

Theories of career development and career decision making. Critique of career development programs in institutions and agencies. Students may repeat the course for up to a total of 3 credit hours.

**Prerequisites:** EDCE 707.

**EDCE 809 - Advanced Counseling Through Play (3 Credits)**

Development of advanced theoretical and skill-based competencies in the practices of play therapy.

**Prerequisites:** EDCE 709, EDCE 802.

**EDCE 810 - Theory and Practice of Play Therapy (3 Credits)**

Basic concepts and practices related to the history of play therapy, developmental issues and ethical considerations in working theory to the practices of play therapy.

**Prerequisites:** EDCE 510, EDCE 600.

**EDCE 811 - Creative Arts in Counseling (3 Credits)**

An examination of the history, rationale, theories, research and techniques of using the creative arts in counseling. Particular attention will be given to the therapeutic values or visual and verbal arts.

**Prerequisites:** EDCE 510, EDCE 600.

**EDCE 812 - Counseling Skills Assessment Lab (3 Credits)**

Emphasis on assessment of counseling skill development and application of theory to practice through supervised work with clients in a laboratory setting in preparation for field-based practicum.

**Corequisite:** EDCE 813.

**EDCE 813 - Professional Issues in Counseling (3 Credits)**

Emphasis on ethical issues related to counseling practice, research, writing, and continuing education including assessment and development of professional writing skills.

**Corequisite:** EDCE 812.

**EDCE 820 - Advanced Transcultural Counseling (3 Credits)**

Advanced principles and practices for transcultural counseling.

**Prerequisites:** EDCE 700.

**EDCE 822 - Advanced Practicum (3 Credits)**

Doctoral level supervised counseling experience in field settings relevant to students professional goals.

**EDCE 823 - Advanced Counseling Theory (3 Credits)**

Emphasis on formulation and evaluation of the theoretical basis for approaches to counseling including, study of historical and contemporary perspectives.

**Prerequisites:** EDCE 802.

**EDCE 825 - Empirical Basis of Counseling (3 Credits)**

An analysis of the empirical basis of counseling practice and theory with attention to special problems related to counseling research.

**EDCE 830 - Pedagogy in Counselor Education (3 Credits)**

Examination of pedagogy instructional principles, and evaluation procedures for counselor education in higher education settings.

Admission to the Ph.D. program in Counselor Education.

**EDCE 832 - Practicum in Counseling Supervision (3 Credits)**

Seminars and directed practice in counseling supervision. Contact department for application deadline. Internship application must be completed early in the semester preceding enrollment.

**Prerequisites:** EDCE 822 and EDCE 830.

**EDCE 855 - Internship in Counselor Education (1-3 Credits)**

Teaching, consultation, counseling, and/or supervision experience is gained in field settings relevant to student's professional goals; includes clinical supervision and professional development.

**EDCE 856 - Supervised Internship in Counselor Education - Teaching (3 Credits)**

Teaching experience is gained in field settings relevant to student's professional goals; includes supervision of teaching and professional development.

**Prerequisites:** EDCE 830.

**EDCE 879 - Group Counseling Practicum (1-3 Credits)**

Supervised experience in group counseling. Students may repeat the course for up to a total of 3 credit hours.

**Prerequisites:** EDCE 802.

**EDCE 890 - Independent Study (3 Credits)****EDCE 899 - Dissertation Preparation (1-12 Credits)****EDET 603 - Design and Development Tools I (3 Credits)**

Study of multimedia elements (e.g., graphics, animation, audio, and video) including the creation and editing of materials. Instructional applications, copyright issues, and technology limitations will be explored.

**EDET 650 - Internship in Educational Technology (3 Credits)**

Supervised field-based experiences in the design, development, evaluation, and implementation of technology-based instructional and training projects.

**Prerequisites:** EDET 603, EDET 703, and EDET 722.

**EDET 652 - Design and Evaluation of Games and Simulations (3 Credits)**

Application of instructional design criteria to computer and noncomputer interactions. Analyses include requisite cognitive processes, affective outcomes, and ethical standards. Design and formative testing of interactive exercises.

**EDET 703 - Design and Development Tools II (3 Credits)**

Critical analysis of research in multimedia programs and implications for instruction. Application of instructional design criteria to develop, author, and evaluate multimedia projects.

**Prerequisites:** EDET 603.

**EDET 709 - Applications of Learning Principles (3 Credits)**

Behavioral and cognitive learning principles applicable to the design of technology-based instruction and performance training.

**EDET 722 - Instructional Design and Assessment (3 Credits)**

Principles and models of instructional design and the assessment of learning. Applications of the instructional design process and assessment criteria to develop instruction and assessment tools for technology-based environments.

**EDET 735 - Technological Applications for Diverse Populations (3 Credits)**

Application of Universal Design, assistive devices, and other technologies to assure access to information and productivity tools by persons with disabilities, English-language learners, students at risk, and the elderly.

**EDET 746 - Management of Technology Resources (3 Credits)**

The organization and administration of media programs in school buildings and districts, regional and state centers, and colleges and universities. Procedures, problems, and trends for an integrated instructional support system will be emphasized.

**EDET 755 - Design and Evaluation of Information Access and Delivery (3 Credits)**

Telecommunications tools to support research and instruction across the curriculum. Study of distance education and issues related to instructional delivery, connectivity, and distribution methods.

**EDET 780 - Research Seminar in Educational Technology (3 Credits)**

A study of contemporary trends, problem areas, and issues in educational technology through literature investigations, seminar discussions, and case studies.

**EDET 793 - Advanced Instructional Design and Development (3 Credits)**

Incorporation of instructional design criteria, multimedia development skills, knowledge of instructional methods, learning theory, and evaluation to develop a comprehensive multimedia or Web-based instructional project.

**Prerequisites:** EDET 650, EDET 703.

**EDET 799 - Thesis Preparation (1-9 Credits)****EDET 801 - Doctoral Research in Educational Technology (3 Credits)**

A comprehensive study of the educational technology field, and an analysis of a significant question or issue related to teaching and administration in K12 schools, higher education, and/or other social institutions through literature investigation.

**EDET 810 - Principles of Applied Educational Technology Research (3 Credits)**

Introduction to the design of applied educational technology research with theoretical alignment of contemporary paradigms of research, purposes, research questions, ethics, and positionality.

**EDET 811 - Advanced Applied Educational Technology Research (3 Credits)**

Advanced applied quantitative and qualitative methods for educational technology research using data collection, analysis, interpretation, and systematic study of a significant research problem related to teaching and learning in technology-enhanced learning environments.

**Prerequisites:** EDET 810.

**EDET 825 - Evaluation of Educational Technology Research (3 Credits)**

Evaluation and review of relevant research literature in educational technology to synthesize theories, trends, and issues related to the field.

**Prerequisites:** EDET 811.

**EDET 826 - Synthesizing Educational Technology Research (3 Credits)**

Emphasis is placed on synthesizing research into an original, coherent and structured review of related literature.

**Prerequisites:** EDET 825.

**EDET 850 - Special Topics in Educational Technology (3 Credits)**

Selected topical problems for advanced graduate students interested in technology-enhanced teaching, learning, and performance environments.

**EDET 899 - Dissertation Preparation (1-12 Credits)**

Special permission of department required.

**EDEX 523 - Introduction to Exceptional Children (3 Credits)**

Overview of the field of education for exceptional children. Basic course for those entering the field of special education.

**EDEX 525 - The Nature of Orthopedic and Special Health Problems (3 Credits)**

Symptomatology, behavioral manifestations, and resources for care and treatment of orthopedic conditions and other types of health problems in children and youth.

**EDEX 530 - Introduction to Early Childhood Special Education (3 Credits)**

An overview of early childhood special education for young children with disabilities and their families.

**EDEX 531 - Nature of Students with Specific Learning Disabilities (3 Credits)**

Children with average/above average intelligence and specific learning impairments; diagnostic and remedial techniques. (Offered by both the College of Education and the Department of Psychology).

**Prerequisites:** EDEX 523 or PSYC 528.

**Cross-listed course:** PSYC 529

**EDEX 540 - Nature and Needs of the Gifted and Talented (3 Credits)**

Types and characteristics of the gifted and talented.

**Prerequisites:** EDEX 523 or PSYC 518.

**EDEX 580 - Direct Instruction in Reading for At-Risk Learners (3 Credits)**

A study of the skills and knowledge required to implement direct instruction procedures when teaching reading, with opportunity for application of skills. Research and theoretical foundations will also be evaluated.

**Prerequisites:** EDEX 523.

**EDEX 581 - Teaching Reading in the Content Area to Adolescents with Reading Disabilities (3 Credits)**

Research, theory, and instructional practices related to providing reading instruction in content areas for youth with disabilities, with a focus on developing disciplinary literacy in inclusive settings.

**EDEX 582 - Teaching Mathematics to Students at Risk (3 Credits)**

Research, theory, and instructional practices related to mathematical readiness and instruction for children and youth at risk for mathematical difficulties.

**Prerequisites:** EDEX 523 or EDEX 491.

**EDEX 610 - Instruction of Students with Severe and Multiple Disabilities (3 Credits)**

Data-based instruction for teaching students with significant disabilities: task and developmental analysis, individualizing instruction, and preparing and implementing instructional programs.

**Prerequisites:** EDEX 523 or PSYC 528.

**EDEX 615 - Curriculum and Language Instruction for Students with Severe and Multiple Disabilities (3 Credits)**

Design, development, adaptation, and implementation of curriculum, language and communication instruction for students with significant disabilities.

**Prerequisites:** EDEX 523 or PSYC 528.

**EDEX 616 - Instruction of Students with Specific Learning Disabilities (3 Credits)**

Theory and application of current evidence-based procedures for teaching children with specific learning disabilities.

**Prerequisites:** EDEX 523, EDEX 531, or EDEX 632 or equivalent.

**EDEX 619 - Nature of Students with Intellectual Disabilities (3 Credits)**

Nature and causes of intellectual disabilities, behavior, and potentialities of persons with intellectual disabilities.

**Prerequisites:** a course in the areas of child psychology or child development.

**EDEX 630 - Educational Procedures for Early Childhood Special Education (3 Credits)**

An initial course in educational procedures focusing on intervention strategies for serving young children with disabilities in inclusive environments.

**Prerequisites:** EDEX 530.

**EDEX 632 - Nature of Students with Emotional and Behavior Disabilities (3 Credits)**

Characteristics, etiology, and major theoretical models for children experiencing emotional and/or behavioral problems in school; special education curriculum, programming alternatives, assessment, and issues concerning this population.

**Prerequisites:** EDEX 523 or PSYC 528.

**EDEX 640 - Managing Problem Behavior in the Classroom (3 Credits)**

The development of a workable approach to classroom management through an examination of a research-based synthesis of current knowledge in classroom and behavior management.

**EDEX 643 - Social/Emotional Development and Guidance for Young Children with Developmental Delays (3 Credits)**

DEC Practices in Early Childhood Special Education, Assessing and Monitoring Children's Challenging Behavior, and Preventive Strategies for Challenging Behavior.

**Prerequisites:** EDEX 523.

**EDEX 646 - Advanced Procedures for Assessment in Early Childhood Special Education (ECSE) (3 Credits)**

Advanced assessment methods for serving young children with and without developmental delays and their families.

**Prerequisites:** EDEX 530.

**EDEX 670 - Nature of Students with Multi-categorical Disabilities (3 Credits)**

Personal, social, and educational implications of a mild to moderate multi-categorical disability (emotional/behavioral, intellectual, and learning disabilities) throughout the lifespan of an individual.

**Prerequisites:** C or better in EDEX 523.

**EDEX 671 - Instruction of Students with Multi-categorical Disabilities (3 Credits)**

Theory and application of current evidence-based procedures for teaching children with mild to moderate multi-categorical disabilities.

**Prerequisite or Corequisite:** C or better in EDEX 670.

**EDEX 682 - Introduction to Braille (3 Credits)**

Basic course for mastery of the literary braille code. Transcription of instructional materials in literary braille.

**EDEX 685 - Nature of Students with Visual Disabilities (3 Credits)**

The psychological, social, and educational implications for persons with visual disabilities; definitions, incidence, characteristics of, and rehabilitative and educational programs for persons with visual disabilities.

**EDEX 686 - Introduction to Deafness (3 Credits)**

Educational implications of philosophy, theory, and research about deafness.

**Prerequisites:** EDEX 523 or equivalent.

**EDEX 687 - Communication Systems for Students who are Deaf or Hearing Impaired (3 Credits)**

Knowledge and basic skills of finger-spelling and sign forms for communication.

**EDEX 690 - Independent Study (1-3 Credits)****EDEX 691 - Collaborative Partnerships in PK-12 Special Education (3 Credits)**

Communication and collaboration skills and strategies for creating and maintaining effective partnerships with a variety of stakeholders involved in educating students with disabilities in PK-12 settings.

**Prerequisites:** EDEX 523 or PSYC 528.

**EDEX 692 - Partnerships in Early Childhood Special Education (3 Credits)**

Strategies for collaborating and communicating with families and other professionals as members of multidisciplinary teams in Early Intervention and Early Childhood Special Education.

**Prerequisites:** EDEX 523.

**EDEX 701 - Nature of Students with Autism (3 Credits)**

Definitions, characteristics, and causes of autism; educational models, implications, and programming.

**Prerequisites:** EDEX 523 or equivalent.

**EDEX 710 - Legal Issues in Special Education (3 Credits)**

Analysis of legislation, litigation, and administrative rulings related to special education. Emphasis on the development of legally sound policies and procedures to ensure an appropriate education for students with disabilities.

**EDEX 712 - Instruction of Students with Intellectual Disabilities (3 Credits)**

Methods and materials to teach students with intellectual disabilities.

**Prerequisites:** EDEX 523 or PSYC 528.

**EDEX 713 - Practicum in Instruction of Exceptional Children I (3 Credits)**

Experience in the observation of and participation in the education of children with disabilities in settings appropriate to student's specialization. Includes weekly seminar.

**Prerequisites:** EDEX 523.

**EDEX 714B - Practicum in Instruction of Exceptional Children II: B (Behavioral Disorders) (3 Credits)**

Experience in the direct teaching of children with disabilities in settings appropriate to student's area of specialization. Includes weekly seminar.

**EDEX 714C - Practicum in Instruction of Exceptional Children II: C (Multicategorical) (3 Credits)**

Experience and seminar in the direct teaching of students with disabilities in settings appropriate to student's area of specialization.

**EDEX 714E - Practicum in Instruction of Exceptional Children II: E (Early Childhood Special Education) (3 Credits)**

Experience in the direct teaching of children with disabilities in settings appropriate to student's area of specialization. Includes weekly seminar.

**EDEX 714H - Practicum in Instruction of Exceptional Children II: H (Hearing Impairments) (3 Credits)**

Experience in the direct teaching of children with disabilities in settings appropriate to student's area of specialization. Includes weekly seminar.

**EDEX 714L - Practicum in Instruction of Exceptional Children II: L (Learning Disabilities) (3 Credits)**

Experience in the direct teaching of children with disabilities in settings appropriate to student's area of specialization. Includes weekly seminar.

**EDEX 714M - Practicum in Instruction of Exceptional Children II: ID (Intellectual Disabilities) (3 Credits)**

Experience in the direct teaching of children with disabilities in settings appropriate to student's area of specialization. Includes weekly seminar.

**EDEX 714S - Practicum in Instruction of Exceptional Children II: S (Severe/Multiple) (3 Credits)**

Experience in the direct teaching of children with disabilities in settings appropriate to student's area of specialization. Includes weekly seminar.

**EDEX 715 - Applied Behavior Analysis in Special Education (3 Credits)**

Application of principles of behavior to understanding and changing socially important behavior of students with disabilities.

**EDEX 716 - Functional Behavioral Assessment and Behavior Interventions (3 Credits)**

Identification and assessment of problem behavior, design and implementation of positive behavior intervention plans.

**Prerequisites:** EDEX 610 or EDEX 640 or equivalent.

**EDEX 717 - Ethics in Behavior Analysis (3 Credits)**

Legal, ethical, and professional issues in behavior analysis.

**Prerequisites:** EDEX 610 or EDEX 715.

**EDEX 718 - Intensive Practicum in Applied Behavior Analysis (3-6 Credits)**

Principles of applied behavior analysis in the design, delivery, and evaluation of instruction of children and adults in school, home, and community settings. Students pursuing Board Certification in Behavior Analysis.

**Prerequisite or Corequisite:** EDEX 610, EDEX 715.

**EDEX 719 - Advanced Applied Behavior Analysis (3 Credits)**

Advanced concepts and principles in applied behavior analysis.

**Prerequisites:** EDEX 715, EDEX 809.

**EDEX 720 - Applied Research Experience in Special Education (1-3 Credits)**

Supervised student-led research experience in a school, state agency, department or bureau of the University, or cooperating organization or institution.

**EDEX 726 - Seminar in Special Education for Student Teachers (3 Credits)**

Synthesis of the knowledge and skills acquired through course work and field experiences during special education teacher preparation.

**Corequisite:** EDEX 796.

**EDEX 740 - Cognitive and Affective Aspects of the Gifted and Talented (3 Credits)**

The relationship of cognitive and affective factors to learning in the gifted and talented, including the self-concepts of the learner and the teacher.

**Prerequisites:** EDEX 523 and EDEX 540.

**EDEX 742 - Educational Procedures for the Gifted and Talented (3 Credits)**

Emphasis on methodologies and materials involved in the teaching of gifted and talented children and youth.

**Prerequisites:** EDEX 540.

**EDEX 750 - Technology and Exceptional Populations (3 Credits)**

The application of microcomputers and other technology in services for special populations. Case management, assessment, and instructional uses of technology are included.

**Cross-listed course:** RHAB 750

**EDEX 760 - Secondary Transition Assessment, Planning, and Program Development (3 Credits)**

Foundation for understanding and using assessment information in the transition process for youth with disabilities. Specifically, students will gain knowledge in the multiple domains of transition assessment (e.g., vocational, academic, independent living, self-determination). Students will also develop and determine appropriate transition plans, programs, services, and instruction.

**Prerequisites:** EDEX 523 or equivalent introductory course in special education.

**EDEX 761 - Promoting Student Outcomes Through Collaboration (3 Credits)**

Concepts, tools, and strategies essential for effective collaboration within and across systems supporting transition-age youth with disabilities. Best practices on how to partner with agencies, schools, and employers which provide students with support and advocacy as they transition to post-school life.

**Prerequisites:** EDEX 523 or equivalent introductory course in special education.

**EDEX 762 - Career Preparation and Employment for Individuals with Disabilities (3 Credits)**

Specific vocational practices and information used to assist persons with disabilities as they begin to make career decisions and transition to the workforce.

**Prerequisites:** EDEX 523.

**EDEX 763 - Integrated Secondary Curriculum, Instructional Strategies, and Transition Programs (3 Credits)**

Developing and selecting curricula that meet students' transition needs and align with state academic standards. Students will evaluate and implement evidence-based practices as well as develop lessons and instructional units that promote the skills necessary for transition to adult life.

**Prerequisites:** EDEX 523.

**EDEX 770 - Methods and Materials for Students with Low Vision (3 Credits)**

Current educational methods and materials for students with partial sight including educational needs, assessment of visual functioning, and vision utilization. Educational plannings and instructional strategies will be considered.

**Prerequisites:** EDEX 685 and EDEX 773.

**EDEX 773 - Anatomy, Physiology, and Pathology of the Eye (3 Credits)**

Structure, function, and abnormalities of the eye stressing educational implications. Special attention is paid to interpretation of reports from eye specialists, theory and use of low vision aids, and vision screening techniques in schools.

**EDEX 774 - Educational Procedures for Students with Visual Disabilities (3 Credits)**

Current educational procedures for students who are blind or with partial sight, including programming alternatives, curriculum adaptations and additions, use of specialized equipment, instructional strategies, and educational planning.

**Prerequisites:** EDEX 682 and EDEX 773.

**EDEX 775 - Orientation and Mobility for the Visually Handicapped (3 Credits)**

Lectures, discussions, observation, and practice in teaching pre-care skills, orientation and mobility, and activities of daily living to visually handicapped individuals. Presented with reference to the responsibility of the teacher of the visually handicapped.

**EDEX 780 - Speech Reading and Auditory Training I (3 Credits)**

A study of the use of acoustic amplification and speech reading in developing language skills for deaf and hard-of-hearing children and adults. Theories, methods, and systems of speech reading and use of hearing aids and other amplification equipment are studied and analyzed.

**EDEX 781 - Speech Reading and Auditory Training II (3 Credits)**

Advanced study in methods of instruction for the hard-of-hearing in the principles and techniques of lip reading and auditory training.

**Prerequisites:** EDEX 780 or equivalent.

**EDEX 784 - Instruction of Students with Emotional and Behavioral Disorders (3 Credits)**

Application of current educational procedures for students with emotional and behavioral disorders including alternative administrative arrangements, education strategies, and sources of materials.

**Prerequisites:** EDEX 632.

**EDEX 785 - Language Impairment, Disabilities, and Augmentative Communication (3 Credits)**

The study of language disorders in students with disabilities. Focus on defining communicative acts and implementation of alternative and augmentative communication and assistive technology.

**EDEX 790 - Introduction to Assessment in Special Education (3 Credits)**

Concepts and methods of assessment in special education with emphasis on administering, scoring, and interpreting standardized education tests.

**EDEX 791 - Procedures in Special Education Assessment and Intervention I (3 Credits)**

Lectures and practicum experiences emphasizing the application of informal educational assessment and intervention planning procedures. Individually supervised case project.

**Prerequisites:** EDEX 790.

**EDEX 792 - Issues in Special Education (3 Credits)**

Critical reviews of research related to key issues in special education. A research paper is required.

**Prerequisites:** EDRM 700, EDEX 790, EDEX 640, 1 methods course.

**EDEX 793 - Seminar in Aural Rehabilitation (3 Credits)**

Experimental study of various aspects of lip-reading and auditory training.

**EDEX 794 - Foundations of Secondary Transition Planning and Supports for Individuals with Disabilities (3 Credits)**

Orientation to transition planning and vocational training as integrated components of secondary level education curriculum for students with disabilities.



**EDEX 795 - Assessment in Early Childhood Special Education (3 Credits)**

Assessment instruments, techniques, and procedures for non-discriminatory educational assessment of children with disabilities birth-eight years.

**EDEX 796B - Directed Teaching in Special Education (12 Credits)**

Application of effective teaching techniques and organization of instructional settings for exceptional learners in selected areas of specialization. B (Behavioral Disorders), L (Learning Disabilities), ID (Intellectual Disabilities), S (Severe/Multiple)

**Prerequisites:** Admission to the Professional Teacher Certification Program and completion of the special education core

**EDEX 796C - Directed Teaching in Special Education: C (Multicategorical) (12 Credits)**

Application of effective teaching techniques and organization of instructional settings for exceptional learners in selected areas of specialization.

**Prerequisites:** Admission to the Professional Teacher Certification Program and completion of the special education core.

**Corequisite:** EDEX 726.

**EDEX 796I - Directed Teaching in Special Education (12 Credits)**

Application of effective teaching techniques and organization of instructional settings for exceptional learners in selected areas of specialization. B (Behavioral Disorders), L (Learning Disabilities), ID (Intellectual Disabilities), S (Severe/Multiple)

**Prerequisites:** Admission to the Professional Teacher Certification Program and completion of the special education core

**EDEX 796L - Directed Teaching in Special Education (12 Credits)**

Application of effective teaching techniques and organization of instructional settings for exceptional learners in selected areas of specialization. B (Behavioral Disorders), L (Learning Disabilities), ID (Intellectual Disabilities), S (Severe/Multiple)

**Prerequisites:** Admission to the Professional Teacher Certification Program and completion of the special education core

**EDEX 796S - Directed Teaching in Special Education (12 Credits)**

Application of effective teaching techniques and organization of instructional settings for exceptional learners in selected areas of specialization. B (Behavioral Disorders), L (Learning Disabilities), ID (Intellectual Disabilities), S (Severe/Multiple)

**Prerequisites:** Admission to the Professional Teacher Certification Program and completion of the special education core

**EDEX 799 - Thesis Preparation (1-9 Credits)****EDEX 808 - Procedures in Special Education Assessment and Intervention II (3 Credits)**

Educational assessment in clinical and school settings. Integration of assessment procedures including interviewing, observation, testing, consultation, and report writing. Individually supervised projects.

**Prerequisites:** EDEX 790 and EDEX 791.

**EDEX 809 - Single-Case Research Designs in Special Education (3 Credits)**

Applications of single-case study designs to the analysis of student behavior in special education, with emphasis on visual display of data and interpretation of research results.

**Prerequisites:** EDEX 715.

**EDEX 810 - Advanced Single-Case Research (3 Credits)**

Advanced concepts in single-case research, including the identification of evidence-based practices in special education through systematic reviews and meta-analyses.

**Prerequisites:** EDEX 809.

**EDEX 815 - Coordination of Programs for Exceptional Children (3 Credits)**

A study of administrative and supervisory issues in the operation of school programs for exceptional children; alternate instructional models and program organizations, budgeting and funding practices, certification requirements, and other operational factors are emphasized.

**Prerequisites:** EDEX 523 or equivalent.

**EDEX 816 - Special Problems in Education of Students with Emotional and Behavioral Disabilities (3 Credits)**

A critical review of research in the identification and education of children and adolescents with emotional and behavioral disabilities. A research project is required.

**Prerequisites:** PSYC 510 or equivalent and EDRM 700.

**EDEX 817 - Advanced Educational Problems in Learning Disabilities (3 Credits)**

Exploration of current issues, problems, and trends in the education of children with learning disabilities.

**Prerequisites:** PSYC 529 and EDEX 616 or their equivalents.

**EDEX 890 - Independent Study (3 Credits)****EDEX 891 - Advanced Educational Procedures for Exceptional Children (3 Credits)**

Procedures to be used in special education classrooms, emphasis on curriculum, methods, and materials for learners with disabilities.

**Prerequisites:** vary by specialization.

**EDEX 892 - Internship in Exceptional Children (3-6 Credits)**

Supervised field-based experiences related to special education administration, pedagogy, and university teaching.

**Prerequisites:** EDEX 891.

**EDEX 892A - Internship in Exceptional Children: A (Administration) (3-6 Credits)**

Supervised field-based experiences related to special education administration, pedagogy, and university teaching.

**Prerequisites:** EDEX 891 and consent of instructor

**EDEX 892P - Internship in Exceptional Children: P (Pedagogy) (3-6 Credits)**

Supervised field-based experiences related to special education administration, pedagogy, and university teaching.

**Prerequisites:** EDEX 891 and consent of instructor

**EDEX 892T - Internship in Exceptional Children: T (Teaching Internship) (3-6 Credits)**

Supervised field-based experiences related to special education administration, pedagogy, and university teaching.

**Prerequisites:** EDEX 891 and consent of instructor

**EDEX 893 - Advanced Topics in Exceptional Children (3 Credits)**

Selected topics in special education. With consent of advisor, may be repeated for credit as topics change.

**Prerequisites:** EDEX 891.

**EDEX 894 - Research Seminar in Special Education (3 Credits)**

Review and analysis of contemporary research topics in special education. May be repeated for up to 12 credit hours as topics vary.

**EDEX 899 - Dissertation Preparation (1-12 Credits)****EDFI 592 - Historical Foundations of American Educational Thought (3 Credits)**

A survey of the history, philosophy, administration, and legal bases of American education.

**EDFI 643 - Southern Educational History (3 Credits)**

Development of educational institutions in Southern society with special attention given to South Carolina.

**EDFI 690 - Independent Study (1-3 Credits)****EDFI 722 - Contemporary Education in Europe (3 Credits)**

A comparison of the impact of postwar forces on the educational systems of selected European nations. Analysis of current trends, movements, and problems in all levels of education. Examination of the educational purposes, systems, techniques, and facilities with implications for the future development of industrialized societies.

**EDFI 730 - Qualitative Epistemologies, Paradigms, & Theories (3 Credits)**

Foundations of qualitative research including historical, philosophical, and theoretical perspectives. Examination of different qualitative approaches and associated methodological issues.

**EDFI 731 - Qualitative Inquiry (3 Credits)**

Qualitative research methods including naturalistic inquiry, participant observation, interviewing, focus groups, and document analysis.

**EDFI 740 - Qualitative Inquiry (3 Credits)**

Qualitative research methods including naturalistic inquiry, participant observation, interviewing, focus groups, and document analysis.

**EDFI 741 - International and Comparative Education (3 Credits)**

Introduction to international education and the comparative method in the study of educational systems around the world. Provides students with an overview of comparative and international education theory, practice, and research methodology.

**EDFI 743 - The History of Education in the United States (3 Credits)**

The history of education in the United States from the colonial period through the contemporary moment. Placing the history of education in a larger American economic, social, political, and cultural context, students consider the development, purposes, effects, and evolution of public and private schools in the United States at the elementary, middle and secondary levels during this critical period in United States history and education.

**EDFI 744 - Philosophy and Education (3 Credits)**

The functional considerations governing educational theories and practices.

**EDFI 747 - Critical Race Theory and Education (3 Credits)**

An introduction to tenets and methodology in Critical Race Theory. The study of race and racism as the primary lens of analysis in educational, social, and political issues.

**EDFI 749 - The School in Modern Society (3 Credits)**

Basic concepts of the relation of the school to the social order: an analysis of the essential features of the changing social context within which American educational policy and practice now operate. The educational implications of recent social change in American life and of the emergence of a new world order.

**EDFI 799 - Thesis Preparation (1-9 Credits)****EDFI 832 - Educational Biography (3 Credits)**

Examination of biography as a form of educational research and scholarship.

**EDFI 833 - Narrative Inquiry (3 Credits)**

Exploration of the various forms of narrative inquiry as a distinct genre of qualitative research.

**EDFI 834 - Participatory Action Research (3 Credits)**

Theoretical, methodological, and pedagogical orientations to participatory action research.

**EDFI 836 - Ethnography and Education (3 Credits)**

Historical, methodological, and theoretical orientations to ethnographic research.

**Prerequisites:** EDFI 731 or equivalent.

**EDFI 837 - Qualitative Case Study (3 Credits)**

The study and practice of qualitative case study methods. Topics include explanatory, descriptive, and exploratory approaches, single case, multi-case, and multi-site design strategies.

**Prerequisites:** EDFI 731.

**EDFI 843 - The School and the Social Order: the United States II (3 Credits)**

The impact of education on the social order in the United States continued—1877 to the present. Research assignments will involve analysis and interpretation of primary source materials of 19th- and 20th-century thought and practice in South Carolina.

**Prerequisites:** EDFI 743 or equivalent.

**EDFI 845 - Seminar of Advanced Students in Foundations of Education (3-9 Credits)**

Individual topics selected by student application and instructor acceptance. May be repeated for up to 9 hours as topics vary.

**EDFI 847 - Modern Philosophies of Education (3 Credits)**

Critical comparison of present-day schools of thought in the nature, objectives, and functions of American education.

**Prerequisites:** EDFI 744 or equivalent.

**Cross-listed course:** PHIL 847

**EDFI 857 - Advanced Critical Race Theory and Education (3 Credits)**

An advanced study of how Critical Race Theory is applied by researchers to investigate issues of racial justice. The study of race and racism is the primary lens of analysis in understanding disparities in educational, political, social and economic outcomes.

**Prerequisites:** EDFI 747.

**Cross-listed course:** EDTE 857

**EDFI 868 - History of Student Activism (3 Credits)**

An overview of the role of student activists who engaged in deliberate protest to demonstrate their dissatisfaction with the American social order and an examination of the rationale behind student rebellion and the role of high schools and colleges in facilitating student activism.

**EDFI 879 - Equity and Justice Internship (1-3 Credits)**

Internship dedicated to equity and justice in educational contexts.

**Prerequisites:** EDFI 749.

**EDFI 890 - Independent Study (3 Credits)****EDFI 899 - Dissertation Preparation (1-12 Credits)**

**EDPY 644 - Free-Choice Learning and Informal Learning Environments (3 Credits)**

Examines free-choice (or informal) learning and the characteristics of settings and activities outside of formal schooling that effectively promote learning and development.

**EDPY 690 - Independent Study (3-15 Credits)****EDPY 704 - The Field of Educational Psychology (3 Credits)**

Introduction to current issues in educational psychology. Topics include, but are not limited to: learning and teaching, cognition, developmental theories, the brain, information processing, motivation, individual differences, and the social contexts of learning.

**EDPY 705 - Human Growth and Development (3 Credits)**

Overview of the contributions of the biological and social sciences to an understanding of the mental, emotional, social, and physical development from infancy through adulthood. Study of behavior problems.

**EDPY 706 - Growth and Development: Childhood (3 Credits)**

Presentation of theories and principles of human development that are particularly relevant to teaching. Application of such theories and principles to learning situations suitable to various age and grade levels.

**EDPY 707 - Growth and Development: Middle Childhood and Adolescence (3 Credits)**

A review of the literature concerning adolescence; nine years through teens. Emphasis on application to the educational setting.

**EDPY 708 - Growth and Development: Adulthood (3 Credits)**

Designed to further understanding of the adult and his/her endeavors in the learning process. Emphasis will be on the major contributing factors (physiological, psychological, and sociological) that affect the adult, on the relevant research findings, and on implications for educators.

**EDPY 741 - Basic Processes: Cognition (3 Credits)**

A study of the cognitive processes involved in complex learning, conceptualization, problem-solving, abstract reasoning, and other aspects of higher intellectual functioning as developed and used in the educational setting.

**EDPY 751 - Learning and Instruction (3 Credits)**

A systematic survey of major traditional and contemporary learning theories and principles relevant to the design and development of classroom teaching and instruction.

**EDPY 752 - Research Methods in Educational Psychology (3 Credits)**

Analysis of concepts and methodological approaches to research in the Educational Psychology field. Focus on critical reading and evaluation of published literature across a broad spectrum of areas.

**EDPY 785 - Motivation and School Learning (3 Credits)****EDPY 799 - Thesis Preparation (1-9 Credits)****EDPY 805 - Contemporary Research in Human Development and Education (3 Credits)**

Issues in research on human development with applications to educational settings.

**EDPY 835 - Educational Psychology (3 Credits)**

Advanced study of educational psychology with special emphasis on learning.

**Prerequisites:** EDPY 752 and EDRM 711.

**EDPY 873 - Advanced Problems in Educational Psychology (3 Credits)**

Advanced problems in educational psychology as they apply to the public schools at all levels. Designed to meet the needs of candidates for graduate degrees.

**EDPY 890 - Independent Study (3 Credits)****EDPY 899 - Dissertation Preparation (1-12 Credits)****EDRM 520 - Introduction to Testing and Evaluation (3 Credits)**

The construction and use of teacher-made tests; descriptive statistics, measurement error, norms, and interpretation of scores; types of standardized instruments for use in elementary and secondary schools.

**EDRM 690 - Independent Study (1-3 Credits)****EDRM 700 - Introduction to Research in Education (3 Credits)**

Concepts and methods of conducting research in education. Admission to graduate standing.

**EDRM 710 - Educational Statistics I (3 Credits)**

Introductory course in statistics for graduate students in education and the other social sciences. Central tendency and variability, normal distribution, simple correlation and regression, z and t tests for one and two samples, and the chi-square test. Use of statistical software.

**EDRM 711 - Educational Statistics II (3 Credits)**

Continuation of Educational Statistics I. Inference for one and two samples, factorial designs, repeated measures designs, and multiple regression. Use of statistical software.

**Prerequisites:** EDRM 710.

**EDRM 712 - Nonparametric Statistics (3 Credits)**

Applied nonparametric statistics in education and the social sciences. Distribution-free inference for repeated measures and factorial designs; logistic regression and log-linear analysis. Use of statistical software.

**Prerequisites:** EDRM 711.

**EDRM 715 - Mixed Methods Research (3 Credits)**

The study and practice of mixed methods research. The integration of qualitative and quantitative approaches and methods in research practices. Emphasis on educational research and settings with consideration of other social science fields as needed.

**Prerequisites:** An initial course in or experience with quantitative research (example - EDRM 705 or EDRM 710) and qualitative research (example - EDFI 731).

**EDRM 718 - Research and the Statistical Packages (1-3 Credits)**

Advanced use of available statistical packages in educational research. Content varies; topics and credit announced in advance. May be repeated for up to six hours of credit. May be repeated for up to 6 hours of credit.

**Prerequisites:** EDRM 710 and EDRM 711.

**EDRM 720 - Educational Measurement (3 Credits)**

The history of educational and psychological measurement. Consideration of concepts such as validity and reliability of educational and psychological measures and the rationale of the development and use of instruments for educational purposes.

**EDRM 721 - Constructing Cognitive Instruments (3 Credits)**

The rationale, construction, use, and appraisal of achievement tests as tools of educational evaluation and research.

**Prerequisites:** EDRM 710 and EDRM 720 or equivalent.

**EDRM 722 - Constructing Non-Cognitive Instruments (3 Credits)**

Consideration and the construction of educational and psychological tests and measurement instruments.

**Prerequisites:** EDRM 721.

**EDRM 723 - Classroom Assessment Methods (3 Credits)**

Emphasis in the linkages between curriculum, instruction, and assessment, and the development of assessments for learning outcomes. Methods include observations, interviewing, performance assessments, portfolios, and classroom tests.

**EDRM 724 - Design and Analysis of Educational Surveys (3 Credits)**

Topics in educational surveys: design of questionnaires, sampling, data collection, treatment of non-responses, survey interviewing, randomized response techniques, data tabulation, and graphical presentation. Use of statistical software.

**EDRM 728 - Technical Aspects of Tests and Measurements (3 Credits)**

Statistical techniques and theoretical concepts involved in educational and psychological measurement. Analysis and interpretation of test data, equating of equivalent forms, latent trait theories and models, multiple matrix sampling, and issues related to criterion-referenced testing.

**Prerequisites:** EDRM 710 and EDRM 720 or equivalent.

**EDRM 736 - Program Evaluation (3 Credits)**

Methods of designing and implementing evaluations of social and educational programs.

**Prerequisites:** EDRM 700 and EDRM 710.

**EDRM 737 - Internship in Research (3 Credits)**

Supervised research experience in a school, state agency, department or bureau of the University, or cooperating institution.

**EDRM 789 - Principles and Applications of Structural Equation Modeling (3 Credits)**

Theories and applications of covariance structure modeling, including reliability analysis, confirmatory factor analysis, and path analysis with observed and latent variables.

**Prerequisites:** EDRM 711 or equivalent and EDRM 721 or equivalent.

**EDRM 799 - Thesis Preparation (1-9 Credits)****EDRM 800 - Grants Administration (3 Credits)**

Analysis of grant and contract functions in government agencies; proposal writing; legal and fiscal requirements of grants administration.

**Cross-listed course:** POLI 755

**EDRM 801 - Principles and Applications of Educational Research (3 Credits)**

Concepts and application of designing research in education.

**Prerequisites:** EDRM 700 or equivalent.

**EDRM 810 - Design and Analysis of Experiments (3 Credits)**

Emphasis on the development of an understanding of the role of inferential statistics in educational experimentation, a working knowledge of the common tests in statistical analysis, and the student's ability to design and execute experiments involving application of the statistical tests.

**Prerequisites:** EDRM 711 or the equivalent.

**EDRM 812 - Hierarchical Linear Modeling (3 Credits)**

Advanced quantitative methods course in multilevel data analysis. Covers theoretical grounding, applications in the social sciences, and model building.

**Prerequisites:** EDRM 711.

**EDRM 816 - Correlational and Multivariate Methods (3 Credits)**

Advanced statistical applications including partial and multiple correlational methods, multiple regression, multivariate analysis of variance, discriminant analysis, and canonical correlation. Use of statistical software.

**Prerequisites:** EDRM 711.

**EDRM 828 - Item Response Theory (3 Credits)**

Statistical models for item response theory, Rasch and other models for binary and polytomous data, and applications. Use of statistical software.

**Prerequisites:** EDRM 711 or PSYC 710 or STAT 701 or STAT 704.

**Cross-listed course:** STAT 778

**EDRM 840 - Advanced Qualitative Inquiry in Education (3 Credits)**

Theory, methodology and practice of qualitative research in educational settings. Students will conduct research in applied settings using qualitative data collection methods including observation, interviews, focus groups, and document analysis.

**Prerequisites:** EDFI 731.

**EDRM 842 - Educational Biography (3 Credits)**

Examination of biography as a form of educational research and scholarship.

**EDRM 878 - Seminar in Research Techniques (1-3 Credits)**

Theoretical and empirical issues in qualitative and/or quantitative methods in educational research. Content varies; topics and credit announced in advance. May be repeated for up to 12 hours of credit.

**EDRM 889 - Advanced Principles and Application of Latent Variable Modeling (3 Credits)**

Study of advanced concepts, principles, techniques, and issues in structural equation modeling (SEM) and the latent variable framework.

**Prerequisites:** EDRM 789 or similar course.

**EDRM 890 - Independent Study (3 Credits)****EDRM 897 - Dissertation Seminar in Education (3 Credits)**

Topics involved with major issues in the planning and conducting of significant research in education. Several faculty members participate; a forum is provided in which candidates may present for analysis original research designs primarily related to their dissertations.

**EDRM 899 - Dissertation Preparation (1-12 Credits)**

## Applied Behavior Analysis, M.Ed.

### Program Description

The M.Ed. in Applied Behavior Analysis is designed to provide students with the knowledge and skills required to become Board Certified Behavior Analysts(R) (BCBA). This 36 credit degree program includes classroom-based courses in applied behavior analysis and a practicum course designed to meet the supervised fieldwork requirements to sit for the national BCBA exam.

### Degree Requirements

#### Applied Behavior Analysis Courses (21 credits)

Course	Title	Credits
EDEX 610	Instruction of Students with Severe and Multiple Disabilities	3
EDEX 701	Nature of Students with Autism	3
EDEX 715	Applied Behavior Analysis in Special Education	3
EDEX 716	Functional Behavioral Assessment and Behavior Interventions	3
EDEX 717	Ethics in Behavior Analysis	3
EDEX 809	Single-Case Research Designs in Special Education	3

Select one additional, related course in applied behavior analysis as approved by advisor 3

**Total Credit Hours** 21

### Practicum Course (15 credits)

Course	Title	Credits
EDEX 718	Intensive Practicum in Applied Behavior Analysis (take for 3 credits each of five semesters)	15

**Total Credit Hours** 15

## Counselor Education, Certificate (Career Development Facilitator)

The CDF certificate is open to individuals who hold a baccalaureate or higher degree. The program requires 18 hours of course work in counselor education. Students interested in subsequent enrollment in the Ed.S. in Counselor Education should note that all certificate and program hours must be completed within six years to earn the Ed.S. degree. Applicants for the CDF certificate program must meet Graduate School admission requirements for the University of South Carolina.

Once admitted to the CDF certificate program, students must complete 18 credit hours in prescribed courses to meet the requirements for the certificate. In addition, students must maintain a **B** average in all courses with no more than six hours of **C** credit.

### Certificate Requirements (18 Hours)

#### Required Courses

Course	Title	Credits
EDCE 502	Guidance Techniques for Classroom Teachers	3
EDCE 600	Communication Skills in Counseling	3
EDCE 700	Cross-Cultural Counseling	3
EDCE 706	Assessment in Counseling	3
EDCE 707	Career Development	3
EDCE 717	Career Practicum	3

**Total Credit Hours** 18

## Counselor Education, Ed.S.

### Overview

The counselor education program offers three areas of concentration leading to the degree of education specialist: school counseling, marriage and family counseling, and clinical mental health counseling. The Ed.S. degree requires 66 hours. The school counseling and the marriage and family counseling concentrations are accredited by the Council for the Accreditation of Counseling Related Educational Programs (CACREP). The Clinical Mental Health concentration is a newly added area and the program will apply for CACREP accreditation for this concentration at the earliest opportunity.

#### School Counseling

The Ed.S. in Counselor Education with a concentration in school counseling fulfills the certification requirements for endorsement as a K-12 school counselor in South Carolina. Students are advised to speak to the appropriate staff in the Office of Student Affairs (Wardlaw 113) for information about the certification requirements of other states. Completion of this specialization will also satisfy South Carolina's

academic requirements for application for licensure as a Licensed Professional Counselor Intern (LPC-Intern). After the completion of the required post-degree clinical hours and supervision of these hours, licensure as an LPC is possible. Students are advised to contact the appropriate licensing board for more details. Be advised that completion of this specific course of study does not prepare the graduate for licensure as a mental health counselor or for a marriage and family counselor license.

#### Certification

In the school counseling certification degree program, the degree requirements and certification requirements are linked. Inasmuch as the certification requirements are the responsibility of the S.C. State Board of Education, if state regulations change, degree requirements are also subject to change. All students seeking school counseling certification must:

- successfully complete the requirements of the degree program
- achieve test scores at or above those established by the state on the program-appropriate exams (Praxis II Series); scores earned on the Praxis must be submitted to the Office of Student Affairs, College of Education, Wardlaw 113, USC, and to the South Carolina Department of Education
- submit to an FBI check for prior felony convictions (for initial S.C. certification applicants only)
- pay all certification fees as required.

#### Marriage, Couples, and Family Counseling

The Ed.S. in Counselor Education with a concentration in marriage, couples, and family counseling will satisfy South Carolina's academic requirements for application for licensure as a Licensed Professional Counselor Intern (LPC-Intern). Completion of this specialization may also fulfill the academic licensure requirements of states that specify the completion of a two-year program of graduate study as a marriage and family counselor/therapist. Be advised that completion of this specific course of study does not prepare the graduate for endorsement by the University as a school counselor or for licensure as a mental health counselor. The student must also be aware that state licensing boards may have additional academic and/or supervised clinical requirements beyond the qualifying degree in order to obtain a license to practice. Students are advised to contact the appropriate licensing board for application materials and to discuss these requirements with their advisors.

#### Clinical Mental Health Counseling

The Ed.S. in Counselor Education with a concentration in clinical mental health counseling will satisfy South Carolina's academic requirements for application for licensure as a Licensed Professional Counselor Intern (LPC-Intern). After the completion of the required post-degree clinical hours and supervision of these hours, licensure as an LPC is possible. Students are advised to contact the appropriate licensing board for more details. Be advised that completion of this specific course of study does not prepare the graduate for endorsement by the University as a school counselor or for a marriage and family counselor license. The student must also be aware that state licensing boards may have additional academic and/or supervised clinical requirements beyond the qualifying degree in order to obtain a license to practice. Students are advised to contact the appropriate licensing board for application materials and to discuss these requirements with their advisors.

## Learning Outcomes

### School Counseling

#### Foundations

1. Knowledge
  - a. Knows history, philosophy, and trends in school counseling and educational systems.
  - b. Understands ethical and legal considerations specifically related to the practice of school counseling.
  - c. Knows roles, functions, settings, and professional identity of the school counselor in relation to the roles of other professional and support personnel in the school.
  - d. Knows professional organizations, preparation standards, and credentials that are relevant to the practice of school counseling.
  - e. Understands current models of school counseling programs (e.g., American School Counselor Association (ASCA) National Model) and their integral relationship to the total educational program.
  - f. Understands the effects of:
    - i. atypical growth and development,
    - ii. health and wellness,
    - iii. language,
    - iv. ability level,
    - v. multicultural issues, and
    - vi. factors of resiliency on student learning and development.
  - g. Understands the operation of the school emergency management plan and the roles and responsibilities of the school counselor during crises, disasters, and other trauma-causing events.
2. Skills and Practices
  - a. Demonstrates the ability to apply and adhere to ethical and legal standards in school counseling.
  - b. Demonstrates the ability to articulate, model, and advocate for an appropriate school counselor identity and program

#### Counseling, Prevention, and Interventions

1. Knowledge
  - a. Knows the theories and processes of effective counseling and wellness programs for individual students and groups of students.
  - b. Knows how to design, implement, manage, and evaluate programs to enhance the academic, career, and personal/social development of students.
  - c. Knows strategies for helping students identify strengths and cope with environmental and developmental problems.
  - d. Knows how to design, implement, manage, and evaluate transition programs, including school-to-work, postsecondary planning, and college admissions counseling.
  - e. Understands group dynamics-including counseling, psycho-educational, task, and peer helping groups-and the facilitation of teams to enable students to overcome barriers and impediments to learning.
  - f. Understands the potential impact of crises, emergencies, and disasters on students, educators, and schools, and knows the skills needed for crisis intervention.
2. Skills and Practices
  - a. Demonstrates self-awareness, sensitivity to others, and the skills needed to relate to diverse individuals, groups, and classrooms.

- b. Provides individual and group counseling and classroom guidance to promote the academic, career, and personal/social development of students.
- c. Designs and implements prevention and intervention plans related to the effects of:
  - i. atypical growth and development,
  - ii. health and wellness,
  - iii. language,
  - iv. ability level,
  - v. multicultural issues,
  - vi. factors of resiliency on student learning and development.
- d. Demonstrates the ability to use procedures for assessing and managing suicide risk.
- e. Demonstrates the ability to recognize his or her limitations as a school counselor and to seek supervision or refer clients when appropriate.

#### Diversity and Advocacy

1. Knowledge
  - a. Understands the cultural, ethical, economic, legal, and political issue surrounding diversity, equity, and excellence in terms of student learning.
  - b. Identifies community, environmental, and institutional opportunities that enhance-as well as barriers that impede-the academic, career, and personal/social development of students.
  - c. Understands the ways in which educational policies, programs, and practices can be developed, adapted, and modified to be culturally congruent with the needs of students and their families.
  - d. Understands multicultural counseling issues, as well as the impact of ability levels, stereotyping, family, socioeconomic status, gender, and sexual identity, and their effects on student achievement.
2. Skills and Practices
  - a. Demonstrates multicultural competencies in relation to diversity, equity, and opportunity in student learning and development.
  - b. Advocates for the learning and academic experiences necessary to promote the academic, career, and personal/social development of students.
  - c. Advocates for school policies, programs, and services that enhance a positive school climate and are equitable and responsive to multicultural student populations.
  - d. Engages parents, guardians, and families to promote the academic, career, and personal/social development of students.

#### Assessment

1. Knowledge
  - a. Understands the influence of multiple factors (e.g., abuse, violence, eating disorders, attention deficit hyperactivity disorder, childhood depression) that may affect the personal, social and academic functioning of students.
  - b. Knows the signs and symptoms of substance abuse in children and adolescents, as well as the signs and symptoms of living in a home where substance abuse occurs.
  - c. Identifies various forms of needs assessments for academic, career, and personal/social development.
2. Skills and Practices
  - a. Assesses and interprets students' strengths and needs, recognizing uniqueness in cultures, languages, values, backgrounds, and abilities.

- b. Selects appropriate assessment strategies that can be used to evaluate a student's academic, career, and personal/social development.
- c. Analyzes assessment information in a manner that produces valid inferences when evaluating the needs of individual students and assessing the effectiveness of educational programs.
- d. Makes appropriate referrals to school/and or community resources.
- e. Assesses barriers that impede students' academic, career, and personal/social development.

## Research and Evaluation

1. Knowledge
  - a. Understands how to critically evaluate research relevant to the practice of school counseling.
  - b. Knows models of program evaluation for school counseling programs.
  - c. Knows basic strategies for evaluating counseling outcomes in school counseling (e.g., behavioral observation, program evaluation).
  - d. Knows current methods of using data to inform decision making and accountability (e.g., school improvement plan, school report card).
  - e. Understands the outcome research data and best practices identified in the school counseling research literature.
2. Skills and Practices
  - a. Applies relevant research findings to inform the practice of school counseling.
  - b. Develops measurable outcomes for school counseling programs, activities, interventions, and experiences.
  - c. Analyzes and uses data to enhance school counseling programs.

## Academic Development

1. Knowledge
  - a. Understands the relationship of the school counseling program to the academic mission of the school.
  - b. Understands the concepts, principles, strategies, programs, and practices designed to close the achievement gap, promote student academic success, and prevent students from dropping out of school.
  - c. Understands curriculum design, lesson plan development, classroom management strategies, and differentiated instructional strategies for teaching counseling-and guidance-related material.
2. Skills and Practices
  - a. Conducts programs designed to enhance student academic development.
  - b. Implements strategies and activities to prepare students for a full range of postsecondary options and opportunities.
  - c. Implements differentiated instructional strategies that draw on subject matter and pedagogical content knowledge and skills to promote student achievement.

## Collaboration and Consultation

1. Knowledge
  - a. Understands the ways in which student development, well-being, and learning are enhanced by family-school-community collaboration.

- b. Knows strategies to promote, develop, and enhance effective teamwork within the school and larger community.
  - c. Knows how to build effective working teams of school staff, parents, and community members to promote the academic, career, and personal/social development of students.
  - d. Understands systems theories, models, and processes of consultation I school system settings.
  - e. Knows strategies and methods for working with parents, guardians, families, and communities to empower them to act on behalf of their children.
  - f. Understands the various peer programming interventions (e.g., peer mediation, peer mentoring, peer tutoring) and how to coordinate them.
  - g. Knows school and community collaboration models for crisis/disaster preparedness and response.
2. Skills and Practices
    - a. Works with parents, guardians, and families to act on behalf of their children to address problems that affect student success in school.
    - b. Locates resources in the community that can be used in the school to improve student achievement and success.
    - c. Consults with teachers, staff, and community-based organizations to promote student academic, career, and personal/social development.
    - d. Uses peer helping strategies in the school counseling program.
    - e. Uses referral procedures with helping agents in the community (e.g., mental health centers, businesses, service groups) to secure assistance for students and their families.

## Leadership

1. Knowledge
  - a. Knows the qualities, principles, skills, and styles of effective leadership.
  - b. Knows strategies of leadership designed to enhance the learning environment of schools.
  - c. Knows how to design, implement, manage, and evaluate a comprehensive school counseling program.
  - d. Understands the important role of the school counselor as a system change agent.
  - e. Understands the school counselor's role in student assistance programs, school leadership, curriculum, and advisory meetings.
2. Skills and Practices
  - a. Participates in the design, implementation, management, and evaluation of a comprehensive developmental school counseling program.
  - b. Plans and presents school-counseling-related educational programs for use with parents and teachers (e.g., parent education programs, materials used in classroom guidance and advisor/advisee programs for teachers).

## Marriage, Couple, and Family Counseling Foundations

1. Knowledge
  - a. Knows the history, philosophy, and trends in marriage, couple, and family counseling.
  - b. Understands the ethical and legal considerations specifically related to the practice of marriage, couple, and family counseling.

- c. Knows the roles and functions of marriage, couple, and family counselors in a variety of practice settings and in relation to other helping professionals.
  - d. Knows the professional organizations, preparation standards, and credentials relevant to the practice of marriage, couple, and family counseling.
  - e. Understands a variety of models and theories of marriage, couple, and family counseling.
  - f. Understands family development and the life cycle, sociology of the family, family phenomenology, contemporary families, family wellness, families and culture, aging and family issues, family violence, and related family concerns.
  - g. Understands the impact of crises, disasters, and other trauma-causing events on marriages, couples, families, and households.
2. Skills and Practices
- a. Demonstrates the ability to apply and adhere to ethical and legal standards in marriage, couple, and family counseling.
  - b. Demonstrates the ability to select models or techniques appropriate to couples' or families' presenting problems.

### Counseling, Preventions, and Intervention

1. Knowledge
- a. Understands issues of marriage, couple, and family life-cycle dynamics; healthy family functioning; family structures; and family of origin and intergenerational influences in a multicultural society.
  - b. Recognizes specific problems (e.g., addictive behaviors, domestic violence, suicide risk, immigration) and interventions that can enhance family functioning.
  - c. Understands human sexuality (e.g., gender, sexual functioning, sexual orientation) and its impact on family and couple functioning.
  - d. Understands professional issues relevant to the practice of marriage, couple, and family counseling, including recognition, reimbursement, and right to practice.
2. Skills/Practices
- a. Uses preventive, developmental, and wellness approaches in working with individuals, couples, families, and other systems such as premarital counseling, parenting skills training, and relationship enhancement.
  - b. Uses systems theory to conceptualize issues in marriage, couple, and family counseling.
  - c. Uses systems theories to implement treatment, planning, and intervention strategies.
  - d. Demonstrates the ability to use procedures for assessing and managing suicide risk.
  - e. Adheres to confidentiality responsibilities, the legal responsibilities and liabilities of clinical practice and research, family law, record keeping, reimbursement, and the business aspects of practice.
  - f. Demonstrates the ability to recognize his or her own limitations as a marriage, couple, and family counselor and to seek supervision or refer clients when appropriate.

### Diversity and Advocacy

1. Knowledge
- a. Understands how living in a multicultural society affects couples and families.

- b. Recognizes societal trends and treatment issues related to working with multicultural and diverse family systems (e.g., families in transition, dual-career couples, blended families, same-sex couples).
  - c. Understands current literature that outlines theories, approaches, strategies, and techniques shown to be effective in working with diverse family systems.
  - d. Understands the effects of racism, discrimination, sexism, power, privilege, and oppression on one's own life and that of the client(s).
  - e. Understands the effect of local, state, and national policies, programs, and services on diverse family systems.
2. Skills and Practices
- a. Demonstrates the ability to provide effective services to clients in a multicultural society.
  - b. Maintains information regarding community resources to make appropriate referrals.
  - c. Advocates for policies, programs, and services that are equitable and responsive to the needs of couples and families.
  - d. Demonstrates the ability to modify counseling systems, theories, techniques, and interventions to make them culturally appropriate for diverse couples and families.

### Assessment

1. Knowledge
- a. Knows principles and models of assessment and case conceptualization from a systems perspective, including diagnostic interviews, mental diagnostic status examinations, symptom inventories, and psychoeducational and personality assessments.
  - b. Understands marriage, couple, and family assessment tools and techniques appropriate to clients' needs in a multicultural society.
  - c. Understands the impact of addiction, trauma, psychopharmacology, physical and mental health, wellness, and illness on marriage, couple, and family functioning.
2. Skills and Practices
- a. Applies skills in interviewing, assessment, and case management for working with individuals, couples, and families from a system's perspective.
  - b. Uses systems assessment models and procedures to evaluate family functioning.
  - c. Determines which members of a family system should be involved in treatment.

### Research and Evaluation

1. Knowledge
- a. Understands how to critically evaluate research relevant to the practice of marriage, couple, and family counseling.
  - b. Knows models of program evaluation relevant for the practice of marriage, couple, and family counseling.
  - c. Knows evidence-based treatments and basic strategies for evaluating counseling outcomes in marriage, couple, and family counseling.
2. Skills and Practices
- a. Applies relevant research findings to inform the practice of marriage, couple, and family counseling.
  - b. Develops measurable outcomes for marriage, couple, and family counseling programs, interventions, and treatments.



- c. Analyzes and uses data to increase the effectiveness of marriage, couple, and family counseling interventions and programs.

## Admission

The Counselor Education Program recommends students for admission once a year. Applicants should complete the following:

1. Apply to the Graduate School (<http://www.gradschool.sc.edu>)
2. Provide evidence of the admissions criteria listed below:
  - a. A bachelor's degree from an accredited college or university
  - b. Official transcripts of all completed college level work
  - c. Two letters of recommendation as follows:
    - i. one from a former university instructor, when possible
    - ii. one from a former or present employer
  - d. Examination scores on the Graduate Record Examination (GRE): Verbal and Quantitative sections or the Miller Analogies Test (MAT)
  - e. Letter of Intent stating the student's desire to enter the degree program and outlining his/her long-term professional goals and estimated length of time to complete a program of study
  - f. Current resume
  - g. Contact Counselor Education, [jcattell@mailbox.sc.edu](mailto:jcattell@mailbox.sc.edu), after you have applied.

## Degree Requirements (66 Hours)

### Core Courses (33 Hours)

Course	Title	Credits
EDCE 510	Introduction to Counseling	3
EDCE 600	Communication Skills in Counseling	3
EDCE 700	Cross-Cultural Counseling	3
EDCE 702	Counselor as Consultant	3
EDCE 706	Assessment in Counseling	3
EDCE 707	Career Development	3
EDCE 710	Professional, Legal and Ethical Issues in Counseling	3
EDCE 720	Theories of Counseling	3
EDCE 722	Group Procedures in Counseling	3
NPSY 757	Psychopathology for Counselors	3
NPSY 758	Classification and Assessment of Mental Disorders	3
<b>Total Credit Hours</b>		<b>33</b>

### Specialization and Elective Courses (6-12 Hours)

#### K-12 School Counseling (12 Hours)

Course	Title	Credits
EDCE 708	Critical Issues in School Counseling	3
EDCE 712	Comprehensive Developmental School Counseling	3
Electives		6
<b>Total Credit Hours</b>		<b>12</b>

#### Marriage, Couples & Family Counseling (6 Hours)

Course	Title	Credits
EDCE 503	Family Counseling	3
EDCE 711	Advanced Family Counseling	3
<b>Total Credit Hours</b>		<b>6</b>

#### Clinical Mental Health Counseling (12 Hours)

Course	Title	Credits
EDCE 714	Clinical Mental Health Counseling	3
NPSY 760	Addictions Rehabilitation	3
Electives		6
<b>Total Credit Hours</b>		<b>12</b>

#### Clinical Preparation Courses (6-12 Hours)

##### K-12 School Counseling (6 Hours)

Course	Title	Credits
EDCE 721	Techniques of Counseling	3
EDCE 801	Advanced Techniques in School Counseling	3
<b>Total Credit Hours</b>		<b>6</b>

##### Marriage, Couples & Family Counseling (12 Hours)

Course	Title	Credits
EDCE 715	Sexuality Counseling	3
EDCE 716	Leaders in Counselor Education (to be taken three times)	9
<b>Total Credit Hours</b>		<b>12</b>

##### Clinical Mental Health Counseling (6 Hours)

Course	Title	Credits
EDCE 724	Techniques of Clinical Mental Health Counseling	3
EDCE 715	Sexuality Counseling	3
<b>Total Credit Hours</b>		<b>6</b>

##### Clinical Courses (9 Hours)

Course	Title	Credits
Select one of the following:		3
EDCE 802F	Marriage, Couples, and Family Counseling Practicum	
EDCE 802E	Elementary School Counseling Practicum	
EDCE 802S	Secondary School Counseling Practicum	
EDCE 803	Practicum in Clinical Mental Health Counseling	
Select one of the following:		6
EDCE 804	Internship in Clinical Mental Health Counseling	
EDCE 805F	Marriage, Couples and Family Counseling Internship	
EDCE 805E	Elementary School Counseling Internship	
EDCE 805S	Secondary School Counseling Internship	
<b>Total Credit Hours</b>		<b>9</b>

##### Research (3 Hours)

##### Human Growth and Development (3 Hours)

Students who received the 18-hour Graduate Certificate in Career Development Facilitator (CDF) must complete the following 48 hours to earn the education specialist's degree.

Course	Title	Credits
EDCE 722	Group Procedures in Counseling	3
Select nine credit hours in EDCE clinical courses		9
Select six credit hours in EDCE specialization courses		6
EDCE 700	Cross-Cultural Counseling	3
EDCE 705	Educational Measurement	3
Select 3-12 credit hours of specialized studies in counseling		3-12
Select 3-12 credit hours of social and cultural foundations		3-12
<b>Total Credit Hours</b>		<b>30-48</b>

Note: All candidates will successfully complete a comprehensive assessment prior to graduation. Courses listed on the program of study cannot be older than six years.

## Counselor Education, Ph.D.

### Program Description

The University of South Carolina offers the Ph.D. degree with a major in counselor education. It emphasizes the training of professional counselor educators and counselors who will have competence in teaching, counseling, research, and supervision. Program objectives are centered around a primary goal, which is the education of outstanding counselor educators and counselors. Graduates are prepared to assume leadership roles in settings that provide counseling, teaching, and research with and about populations who are experiencing problems in daily functioning. The program is 63 post-master's degree semester hours in length and is accredited by the Council for the Accreditation of Counseling Related Educational Programs (CACREP).

### Learning Outcomes

#### Supervision

1. Knowledge
  - a. Understands the purposes of clinical supervision
  - b. Understands theoretical frameworks and models of clinical supervision.
  - c. Understands the roles and relationships related to clinical supervision.
  - d. Understands legal, ethical, and multicultural issues associated with clinical supervision.
2. Skill and Practices
  - a. Demonstrates the application of theory and skills of clinical supervision.
  - b. Develops and demonstrates a personal style of supervision.

#### Teaching

1. Knowledge
  - a. Understands the major roles, responsibilities, and activities of counselor educators.
  - b. Knows instructional theory and methods relevant to counselor education.
  - c. Understands ethical, legal, and multicultural issues associated with counselor preparation training.
2. Skill and Practices
  - a. Develops and demonstrates a personal philosophy of teaching and learning.
  - b. Demonstrates course design, delivery, and evaluation methods appropriate to course objectives.

- c. Demonstrates the ability to assess the needs of counselors in training and develop techniques to help students develop into competent counselors.

### Research and Scholarship

1. Knowledge
  - a. Understands univariate and multivariate research designs and data analysis methods.
  - b. Understands qualitative designs and approaches to qualitative data analysis.
  - c. Knows models and methods of instrument design.
  - d. Knows models and methods of program evaluation.
2. Skill and Practices
  - a. Demonstrates the ability to formulate research questions appropriate for professional research and publication.
  - b. Demonstrates the ability to create research designs appropriate to quantitative and qualitative research questions.
  - c. Demonstrates professional writing skills necessary for journal and newsletter publication.
  - d. Demonstrates the ability to develop and submit a program proposal for presentation at state, regional, or national counseling conferences.
  - e. Demonstrates the ability to write grant proposal appropriate for research, program enhancement, and/or program development.
  - f. Demonstrates the ability to create and implement a program evaluation design.

### Counseling

1. Knowledge
  - a. Knows the major counseling theories, including their strengths and weaknesses, theoretical bases for efficacy, applicability to multicultural populations, and ethical/legal considerations.
  - b. Understands various methods for evaluating counseling effectiveness.
  - c. Understand the research base for existing counseling theories.
  - d. Understands the effectiveness of models and treatment strategies of crises, disasters, and other trauma-causing events.
2. Skills and Practices
  - a. Demonstrates a personal theoretical counseling orientation that is based on a critical review of existing counseling theories.
  - b. Demonstrates effective application of multiple counseling theories.
  - c. Demonstrates an understanding of case conceptualization and effective interventions across diverse populations and settings.

### Leadership and Advocacy

1. Knowledge
  - a. Understands theories and skills of leadership.
  - b. Understands advocacy models.
  - c. Identifies current multicultural issues as they relate to social change theories.
  - d. Understands models, leadership roles, and strategies for responding to community, national, and international crises and disasters.
  - e. Understands current topical and political issues in counseling and how those issues affect the daily work of counselors and the counseling profession.
2. Skills and Practices

- a. Demonstrates the ability to provide leadership or contribute to leadership efforts of professional organizations and/or counseling programs.
- b. Demonstrates the ability to advocate for the profession and its clientele.

## Admission

In addition to The Graduate School's application requirements, applicants must submit:

1. proof of masters or specialist degree from an accredited college or university.
2. verification of the 30 semester hours of prerequisite work in the CACREP core and clinical areas of instruction.
3. a current resume documenting two years' minimum work experience related to the field of counseling and related achievements, professional affiliations, and activities.
4. a letter of intent, which should include:
  - a. long-term goals in terms of benefits (to self and society).
  - b. skills or competencies needed to achieve the goals.
  - c. a timeline for completion of your degree.
  - d. barriers to achievement of those goals.
  - e. a statement clarifying when you expect to meet the residency requirement.

## Degree Requirements (63 Post-Masters Hours)

The total number of hours required may vary depending on prior graduate coursework completed, but must be no less than 63 hours beyond the masters degree. Based on the curriculum described below, a program of study will be developed with the student's advisor and must be approved by the College of Education Graduate Director and the Dean of the Graduate School. Courses listed on the program of study must be completed no more than 10 years prior to graduation.

### Qualifying Examination

Students must achieve a grade of B or better in the 18 hours of core courses. Once the student has applied for candidacy, the faculty reviews the application and votes whether to recommend the admission of the candidate. Admission recommendations are determined by a majority vote.

### Coursework

#### Area 1: Core Courses (18 Hours)

Course	Title	Credits
EDCE 723	Counseling Supervision Theory	3
EDCE 813	Professional Issues in Counseling	3
EDCE 820	Advanced Transcultural Counseling	3
EDCE 823	Advanced Counseling Theory	3
EDCE 830	Pedagogy in Counselor Education	3
EDCE 832	Practicum in Counseling Supervision	3
<b>Total Credit Hours</b>		<b>18</b>

#### Area 2: Clinical Requirements (12 Hours) Practicum (3 Hours)

Course	Title	Credits
EDCE 822	Advanced Practicum	3
<b>Total Credit Hours</b>		<b>3</b>

#### Internship (9 Hours)

Course	Title	Credits
EDCE 855	Internship in Counselor Education (must successfully complete 3 times for one credit hour each)	3
EDCE 856	Supervised Internship in Counselor Education - Teaching (must successfully complete 2 times for three credit hours each)	6
<b>Total Credit Hours</b>		<b>9</b>

#### Area 3: Research (18 hours)

#### Area 4: Dissertation (15 Hours)

Course	Title	Credits
EDCE 825	Empirical Basis of Counseling	3
EDCE 899	Dissertation Preparation	12
<b>Total Credit Hours</b>		<b>15</b>

### Foreign Language Requirement

Students must meet the Foreign Language and/or Research Methods Requirement as defined by the Graduate School. The 18 hours of research meet this requirement.

### Comprehensive Examination

A written and oral comprehensive examination is required.

## Educational Practice and Innovation, Ed.D.

The Doctorate in Education (Ed.D.) in Educational Practice and Innovation bridges the gaps among theory, research, and practice to promote excellence and innovation in teaching, learning, and leadership within and across educational contexts, while stressing the importance of diversity within those contexts. Students must complete a concentration in Curriculum Studies, Education Systems Improvement, Learning Design and Technologies, or STEM Education.

The Curriculum Studies concentration emphasizes concerns for equity and social justice, self-knowledge, cultural issues, and human growth and development through a balanced approach to diversity education consisting of theory and practice. This concentration provides an in-depth understanding of the theory, history, concepts, current techniques, strategies, and issues of diversity in schools, as well as other social institutions and community settings; and facilitates self-reflection for engaging in social justice education.

The Education Systems Improvement concentration develops capacity for school and district improvement with capabilities that include advanced understandings of inquiry and improvement science, organizational culture and change, transforming schools, districts and communities, economics and district finance, education policy and reform, school board relations, and systemic challenges and problems in urban and rural contexts. This concentration:

1. prepares practitioners with a strong foundation and strategies for systems improvement;
2. prepares practitioners with advanced understandings of district, state and national policies; and
3. develops scholarly practitioners to use principles of improvement science to solve systemic problems of practice in their contexts.

The Learning Design and Technologies concentration develops capabilities essential to the design, development, implementation, evaluation, and research of technology-based learning, instruction, and training (e.g., computer-based training, multimedia development, technology integration, assistive technology modifications, online education, and distance learning). This concentration:

1. prepares practitioners with sound principles and techniques of instructional systems design plus leading-edge technological competency;
2. prepares leaders for the meaningful integration of educational technology in teaching, learning, and performance environments; and
3. develops scholarly practitioners to solve significant problems of practice within their respective contexts.

The STEM Education concentration of the Ed.D. emphasizes content and pedagogy related to integrated approaches to STEM (Science, Technology, Engineering and Mathematics) instruction in PK-12 settings. Through the use of instructional methods, such as project-based learning, the STEM Education concentration provides in-depth instruction related to the integration of science, technology, and engineering and mathematics practices. The STEM Education concentration prepares practitioners and instructional leaders to:

1. engage with and solve significant problems of practice within education settings related to STEM fields;
2. develop, integrate, and evaluate integrated STEM instruction; and
3. leverage project-based learning as a model for STEM practices.

## Learning Outcomes

- Students understand issues of diversity in school curriculum from an institutional or structural perspective.
- Students utilize political economic and social mechanisms to equitably shape school curriculum.
- Students consider how the concepts of race ethnicity class gender and sexual orientation intersect in school curriculum.
- Students demonstrate early proficiency at dissertation research skills successfully complete the Prospectus and submit the Doctoral Program of Study (DPOS).
- Students explore interpretive frameworks in a general educational setting.
- Students examine the relationship of the frameworks to human diversity.
- Students analyze the impact of the noted relationships upon established curricula.
- Students demonstrate traits of an Education Activist through the theoretical and conceptual constructs and outcome measures of the dissertation.
- Students finalize the Dissertation in Practice with Plan of Action to extend and expand their research at the classroom district state and/ or national levels.

## Degree Requirements

Minimum of 60 hours beyond the master’s degree; or minimum of 39 hours beyond the Ed.S. in Education Administration for students selecting the Education Systems Improvement Concentration. Students must have completed an Ed.S. that leads to Superintendent Certification to be eligible to complete the program in 39 hours.

Note: Students entering with the Ed.S. in Education Administration will have their transcripts reviewed by an advisor to determine courses and credit hours needed to complete the Ed.D. program, but they must complete a minimum of 39 hours in the Ed.D. Students entering with the Ed.S. in Education Administration will typically take:

- 9 hours from the Core (EDCS 720, EDCS 820, and EDET 709)
- 9 hours in the concentration
- 9 hours in research
- 12 hours of dissertation preparation.

## Qualifying Examination

Submission and approval of Doctoral Program of Study and passing written exam.

## Program of Study

The student’s program advisory committee will evaluate previous course work and experiences and recommend appropriate courses to ensure that at the completion of the program the student can demonstrate the knowledge, skills, and dispositions typically developed in the following course work:

## Core Courses

Required for all concentrations.

Course	Title	Credits
EDCS 720	Introduction to Diversity and the Curriculum	3
EDCS 820	Advanced Study of Diversity and Curriculum	3
EDET 709	Applications of Learning Principles	3
EDLP 755	Educational Policy Analysis	3
<b>Total Credit Hours</b>		<b>12</b>

## Concentration (15 Hours)

Course	Title	Credits
Select one of the following:		15
<b>Curriculum Studies Concentration</b>		
Complete 15 hours of Curriculum Studies courses as approved by advisor		
<b>Education Systems Improvement Concentration</b>		
Complete 15 hours of Education Systems Improvement courses as approved by advisor.		
<b>Learning Design and Technologies Concentration</b>		
Complete 15 hours of Learning Design and Technologies courses as approved by advisor		
<b>STEM Education Concentration</b>		
Complete 15 hours of STEM Education courses as approved by advisor		

**Total Credit Hours** **15**

**Cognate (9 Hours minimum)**

As approved by advisor.

**Research (12 Hours)**

As approved by advisor.

**Dissertation Preparation (12 Hours)**

Course	Title	Credits
Select one of the following depending on concentration and as advised:		
EDCS 899	Dissertation Preparation	12
EDET 899	Dissertation Preparation	
EDLP 899	Dissertation Preparation	
EDTE 899	Dissertation Preparation	
<b>Total Credit Hours</b>		<b>12</b>

**Comprehensive Examination**

Written examination and oral examination

# Educational Psychology and Research, M.Ed.

## Program Description

The M.Ed. in Educational Research requires the completion of 36 graduate hours. The coursework is designed to provide students with a set of research skills applicable to a variety of areas within education. Specifically, these skills include the critical reading of research, the use of statistical techniques, and the construction, selection, and interpretation of cognitive tests. Course work in this degree includes core requirements that are part of the Ph.D. degree in educational research. Students with a baccalaureate degree who are interested in pursuing doctoral work in educational research are encouraged to enroll in the M.Ed. in Educational Research.

## Learning Outcomes

- **Cultural Competence.** Advanced program candidates demonstrate a high level of competence in understanding and responding to diversity of culture, language, and ethnicity.
- **Knowledge and Application of Ethical Principles.** Advanced program candidates demonstrate in-depth knowledge and thoughtful application of the Code of Ethical Conduct and other guidelines relevant to their professional role.
- **Communication Skills.** Advanced program candidates possess a high level of oral, written, and technological communication skills, with specialization for the specific professional role(s) emphasized in the program. For programs for the advanced preparation of teachers, candidates meet ISTE standards. For doctoral programs, candidates are prepared to publish and present at conferences.
- **Mastery of Relevant Theory and Research.** Advanced program candidates demonstrate in-depth, critical knowledge of the theory and research relevant to the professional role(s) and focus area(s) emphasized in the program.
- **Skills in Identifying and Using Professional Resources.** Advanced program candidates demonstrate a high level of skill in identifying and using the human, material, and technological resources needed to perform their professional roles and to keep abreast of the field's changing knowledge base.

- **Inquiry Skills and Knowledge of Research Methods.** Using systematic and professionally accepted approaches, advanced program candidates demonstrate inquiry skills, showing their ability to investigate questions relevant to their practice and professional goals.
- **Skills in Collaborating, Teaching, and/or Mentoring.** Advanced program candidates demonstrate the flexible, varied skills needed to work collaboratively and effectively with other adults in professional roles.
- **Advocacy Skills.** Advanced program candidates demonstrate competence in articulating and advocating for sound professional practices and public policies for the positive development and learning of all students.
- **Leadership Skills.** Advanced program candidates reflect on and use their abilities and opportunities to think strategically, build consensus, create change, and influence better outcomes for students, families, and the profession.

## Specialized Competencies

- Students will demonstrate a general knowledge of Research Principles and Design Issues in Educational Research.
- Students will demonstrate a general knowledge of Measurement and Assessment Issues in Theory and in Practice.
- Students will demonstrate general knowledge of Statistical Procedures and the Interpretation of Results of Various Designs.
- Students will demonstrate an expertise in the Development and Presentation of Research that Includes Purpose, Methods, Results, and Conclusions
- Students will demonstrate knowledge of Ethics, Fairness, and Professionalism as Related to the Field of Educational Research.

## Admission

To be considered for admission, all of The Graduate School's application requirements, curriculum vitae, and a letter of intent that delineates the applicant's professional goals and specific interest in the degree, and two letters of recommendation must be on file in:

The Graduate School  
University of South Carolina  
Columbia, SC 29208

Review of applications takes place in October and February.

The comprehensive examination for the M.Ed. in Educational Research consists of developing a proposal for a specific research problem.

## Degree Requirements (36 Hours)

### EDPY/EDRM Foundation Courses (18 Hours)

Course	Title	Credits
EDPY 704	The Field of Educational Psychology	3
EDRM 700	Introduction to Research in Education	3
EDRM 710	Educational Statistics I	3
EDRM 711	Educational Statistics II	3
EDRM 721	Constructing Cognitive Instruments	3
EDFI 731	Qualitative Inquiry	3
<b>Total Credit Hours</b>		<b>18</b>

## Educational Psychology Courses (9 Hours)

Course	Title	Credits
Select three of the following:		9
EDPY 705	Human Growth and Development	
EDPY 741	Basic Processes: Cognition	
EDPY 751	Learning and Instruction	
EDPY 785	Motivation and School Learning	
<b>Total Credit Hours</b>		<b>9</b>

## Research and Measurement Courses (6 Hours)

Course	Title	Credits
Select two of the following:		6
EDRM 718	Research and the Statistical Packages	
EDRM 724	Design and Analysis of Educational Surveys	
EDRM 736	Program Evaluation	
<b>Total Credit Hours</b>		<b>6</b>

## EDPY/EDRM Elective Courses (3 Hours)

Elective course is selected with assistance from the student's advisor.

# Educational Psychology and Research, Ph.D.

## Program Description

The doctoral program in educational psychology and research at the University of South Carolina offers two concentrations. Students choose either the educational psychology concentration or the educational research concentration.

### Educational Research Concentration

Core skills acquired in the educational research concentration include using measurement and statistics, evaluating programs, designing research, constructing tests, and using computer statistical packages to analyze data. In addition to university faculty positions, graduates in research and measurement serve as directors and coordinators of educational research in school districts, government agencies, and the private sector.

Students may enter the doctoral program with a master's degree in any of a number of fields. Students with only a baccalaureate degree may wish to earn a master's degree in educational psychology and research or educational technology before entering the doctoral program.

### Educational Psychology Concentration

The focus of the educational psychology concentration is to develop a sound knowledge base of both the biological and psychological factors that influence human learning and their relationship to the educational setting. Included are the applications of principles of learning to instruction and classroom situations, cognitive processes, the relationship of human development to the processes of learning, and methods to critique and analyze fundamental educational psychology research areas. Core skills acquired include using quantitative and qualitative research methodologies. This concentration is appropriate for qualified individuals who wish to assume a university faculty position and/or conduct research, as well as those who are responsible for classroom learning in other areas of education and industry.

## Learning Outcomes

- **Cultural Competence.** Advanced program candidates demonstrate a high level of competence in understanding and responding to diversity of culture, language, and ethnicity.
- **Knowledge and Application of Ethical Principles.** Advanced program candidates demonstrate in-depth knowledge and thoughtful application of the Code of Ethical Conduct and other guidelines relevant to their professional role.
- **Communication Skills.** Advanced program candidates possess a high level of oral, written, and technological communication skills, with specialization for the specific professional role(s) emphasized in the program. For programs for the advanced preparation of teachers, candidates meet ISTE standards. For doctoral programs, candidates are prepared to publish and present at conferences.
- **Mastery of Relevant Theory and Research.** Advanced program candidates demonstrate in-depth, critical knowledge of the theory and research relevant to the professional role(s) and focus area(s) emphasized in the program.
- **Skills in Identifying and Using Professional Resources.** Advanced program candidates demonstrate a high level of skill in identifying and using the human, material, and technological resources needed to perform their professional roles and to keep abreast of the field's changing knowledge base.
- **Inquiry Skills and Knowledge of Research Methods.** Using systematic and professionally accepted approaches, advanced program candidates demonstrate inquiry skills, showing their ability to investigate questions relevant to their practice and professional goals.
- **Skills in Collaborating, Teaching, and/or Mentoring.** Advanced program candidates demonstrate the flexible, varied skills needed to work collaboratively and effectively with other adults in professional roles.
- **Advocacy Skills.** Advanced program candidates demonstrate competence in articulating and advocating for sound professional practices and public policies for the positive development and learning of all students.
- **Leadership Skills.** Advanced program candidates reflect on and use their abilities and opportunities to think strategically, build consensus, create change, and influence better outcomes for students, families, and the profession.

## Specialized Competencies for Psychology Track

- Students will demonstrate mastery of Principles of Learning, Cognition, and Human Development.
- Students will develop a Knowledge Base in a Related Area.
- Students will develop expertise in Analyzing and Critiquing Research in the Discipline.
- Students will demonstrate proficiency in Designing, Implementing, and Reporting an Original Study.
- Students will demonstrate knowledge of Ethical Procedures for Protecting the Rights of Human Subjects in Educational Research.
- Students will develop and present research in a Fair, Complete, and Objective Manner.

## Specialized Competencies for Research Track

- Students will demonstrate an advanced knowledge of the general Principles and Design Issues in Research and Evaluation.

- Students will demonstrate an advanced knowledge of Measurement and Assessment Issues in Theory and in Practice.
- Students will demonstrate knowledge of advanced Statistical Procedures and the Interpretation of Results of Various Statistical Designs.
- Students will demonstrate an expertise in the Development and Presentation of Research that Includes Purpose, Methods, Results, and Conclusions.
- Students will demonstrate knowledge of Ethics, Fairness, and Professionalism as Related to the Field of Educational Research.

## Admission

To be considered for admission, all of The Graduate School's application requirements, curriculum vitae, a letter of intent that delineates the applicant's professional goals and specific interest in the degree and specifies the track (educational psychology or educational research) applied for, and three letters of recommendation from individuals who can attest to the applicant's professional potential in the chosen area of interest must be on file in:

The Graduate School  
University of South Carolina  
Columbia, SC 29208

Review of applications takes place in October and February.

## Degree Requirements (63 Hours)

Doctoral students must complete residency requirements, a program of study, a qualifying examination, and a comprehensive (written and oral) examination and, finally, must complete and defend a dissertation.

### Ph.D. in Educational Psychology and Research: Area of Concentration in Educational Research

Minimum hours required: 63 post-masters

The total number of hours required may vary depending on prior graduate coursework completed, but must be no less than 63 hours beyond the masters degree. Based on the curriculum described below, a program of study will be developed with the student's advisor and must be approved by the Graduate Director and the Dean of the Graduate School. Courses listed on the program of study must be completed no more than 10 years prior to graduation.

#### General College Requirements (9 Hours)

Three post-masters courses at the 700-800 level in the College of Education, Columbia campus. Candidates in this degree may choose courses in educational foundations and inquiry, counselor education, special education, and educational technology, as well as courses outside the Department of Educational Psychology.

#### Prerequisite Courses <sup>1</sup> (9 Hours)

Prerequisite courses may not count towards the PhD degree

Course	Title	Credits
EDRM 700	Introduction to Research in Education	3
EDRM 710	Educational Statistics I	3
EDRM 711	Educational Statistics II	3
<b>Total Credit Hours</b>		<b>9</b>

<sup>1</sup> Substitution within program with approval by advisor.

### Area of Concentration (30 Hours Minimum)

Students must earn a grade of **B** or higher in each course completed in the area of concentration. If a **C** is earned in a course in this area, the course may be repeated once only.

#### Required Courses

Course	Title	Credits
EDRM 712	Nonparametric Statistics	3
EDRM 728	Technical Aspects of Tests and Measurements	3
EDRM 789	Principles and Applications of Structural Equation Modeling	3
EDRM 810	Design and Analysis of Experiments	3
EDRM 812	Hierarchical Linear Modeling	3
EDRM 816	Correlational and Multivariate Methods	3
EDRM 828	Item Response Theory	3
EDRM 878	Seminar in Research Techniques (6 hours minimum - other doctoral seminars or independent studies may be approved by program of study committee)	6
<b>Total Credit Hours</b>		<b>27</b>

#### Elective Educational Research Courses

Six additional hours of coursework. Elective courses must be approved by the student's advisor and/or program of study committee.

The following courses may be considered as Educational Research Electives if not previously included as part of an M.Ed. program.

Course	Title	Credits
EDRM 721	Constructing Cognitive Instruments	3
EDRM 736	Program Evaluation	3

#### Related Electives (9 Hours)

These courses must form a unified area of study that reflects a cohesive, secondary area of substantive expertise for the candidate, but may not include courses taken to meet the general college requirements. The related electives are a set of courses that reflect a cohesive, secondary area of emphasis for the candidate. They are supported by a sound rationale from the candidate as to the relevance for his or her study and future career. These courses should be selected in consultation with the advisor and/or students' program of study committee. Students' comprehensive examinations will include an examination covering the related electives area.

#### Dissertation Preparation (12 Hours Minimum)

Students are required to enroll in EDRM 899 while working on their dissertation.

### Ph.D. in Educational Psychology and Research: Area of Concentration in Educational Psychology

Minimum hours required: 63 post-masters

The total number of hours required may vary depending on prior graduate coursework completed, but must be no less than 63 hours beyond the masters degree. Based on the curriculum described below, a program of study will be developed with the student's advisor and must be approved by the Graduate Director and the Dean of the Graduate School. Courses listed on the program of study must be completed no more than 10 years prior to graduation.

**General College Requirements (9 Hours)**

Three post-masters courses at the 700-800 level in the College of Education, Columbia campus to expand doctoral level learning. Candidates in this degree may choose courses within the Educational Studies Department in educational foundations and inquiry, counselor education, special education, and educational technology.

**Prerequisite Courses <sup>1</sup> (12 Hours)**

Students often complete these courses at the masters level

Course	Title	Credits
EDPY 705	Human Growth and Development	3
EDRM 700	Introduction to Research in Education	3
EDRM 710	Educational Statistics I	3
EDRM 711	Educational Statistics II	3
<b>Total Credit Hours</b>		<b>12</b>

<sup>1</sup> Substitution within program with approval by advisor.

**Area of Concentration****Educational Psychology Core Courses (24 Hours Minimum)**

Consult with advisor and/or program of study committee to select core courses:

Course	Title	Credits
EDPY 704	The Field of Educational Psychology	3
EDPY 751	Learning and Instruction	3
EDPY 752	Research Methods in Educational Psychology	3
EDPY 741	Basic Processes: Cognition	3
EDPY 785	Motivation and School Learning	3
EDRM 736	Program Evaluation	3
EDRM 721	Constructing Cognitive Instruments	3
EDET 722	Instructional Design and Assessment	3
EDET 755	Design and Evaluation of Information Access and Delivery	3
Select at least one of the following:		3
EDFI 730	Qualitative Epistemologies, Paradigms, & Theories	
EDFI 731	Qualitative Inquiry	
Select at least one of the following:		3
EDPY 706	Growth and Development: Childhood	
EDPY 707	Growth and Development: Middle Childhood and Adolescence	
EDPY 708	Growth and Development: Adulthood	
Select at least two of the following doctoral seminars:		6
EDPY 805	Contemporary Research in Human Development and Education	
EDPY 835	Educational Psychology	
EDPY 873	Advanced Problems in Educational Psychology	
Other doctoral seminars approved by advisor and/or program of study committee		

**Quantitative or Qualitative Research Option**

Students should choose either the quantitative or qualitative research option: (The research option should be selected in consultation with the student's advisor and/or program of study committee.)

**Quantitative Research Option (9 Hours Minimum)**

Course	Title	Credits
Select at least nine hours of the following:		9
EDRM 712	Nonparametric Statistics	
EDRM 718	Research and the Statistical Packages	
EDRM 724	Design and Analysis of Educational Surveys	
EDRM 728	Technical Aspects of Tests and Measurements	
EDRM 789	Principles and Applications of Structural Equation Modeling	
EDRM 810	Design and Analysis of Experiments	
EDRM 812	Hierarchical Linear Modeling	
EDRM 828	Item Response Theory	
EDRM 878	Seminar in Research Techniques (3 hours minimum)	
Other approved courses in quantitative research taught outside the department approved by the student's advisor and/or program of study committee		

**Total Credit Hours** 9

**Qualitative Research Option (9 Hours minimum)**

Note: EDFI course completed as a core requirement does not count toward the 9 hr. minimum.

Course	Title	Credits
Select at least nine hours of the following:		9
EDFI 730	Qualitative Epistemologies, Paradigms, & Theories	
EDFI 731	Qualitative Inquiry	
EDFI 832	Educational Biography	
EDFI 833	Narrative Inquiry	
EDFI 834	Participatory Action Research	
EDFI 836	Ethnography and Education	
Other approved courses in qualitative research taught outside the department approved by advisor and/or program of study committee.		

**Total Credit Hours** 9

Note: Students must earn a grade of **B** or higher in each course completed in the area of concentration. If a **C** is earned in a course in this area, the course may be repeated once only. Above credit hours for the research options are minimums. Students who plan on working in a research position and/or being a faculty member at a research university may need to take additional courses in order to be adequately prepared for those roles. In addition, students who may be interested in developing expertise in both quantitative and qualitative research methods and/or mixed methods research should consider completing research method courses in both research options. These decisions should be made in consultation with students' advisor and/or program of studies committee.

**Related Electives (9 Hours Minimum)**

These courses must be from a unified area of study that reflects a cohesive, secondary area of substantive expertise. This may not include courses taken to meet the general requirements. They are supported by a sound rationale from the candidate as to relevance for his or her study and future career. Students' comprehensive examinations will include a component covering the related electives area.



## Dissertation Preparation (12 Hours Minimum)

Students are required to enroll in EDRM 899 while working on the dissertation.

## Learning Design and Technologies, M.Ed. (Joint degree with USC Aiken)

### Program Description

The Master's Degree in Learning Design and Technologies is designed to provide advanced professional studies in graduate level coursework to develop capabilities essential to the effective design, evaluation, and delivery of technology-based instruction and training (e.g., software development, multimedia development, assistive technology modifications, web-based development, and distance learning). The program that consists of 36 hours is intended:

1. to prepare educators to assume leadership roles in the integration of educational technology into the school curriculum, and
2. to provide graduate-level instructional opportunities for several populations (e.g., classroom teachers, corporate trainers, educational software developers) that need to acquire both technological competencies and understanding of sound instructional design principles and techniques.

The graduate program is offered jointly by the USC Aiken School of Education and the USC Columbia College of Education. All courses are offered in web-based format.

### Learning Outcomes

- **Design.** Candidates demonstrate the knowledge, skills, and dispositions to design conditions for learning by applying principles of instructional systems design, message design, instructional strategies, and learner characteristics.
- **Development.** Candidates demonstrate the knowledge, skills, and dispositions to develop instructional materials and experiences using print, audiovisual, computer-based, and integrated technologies.
- **Utilization.** Candidates demonstrate the knowledge, skills, and dispositions to use processes and resources for learning by applying principles and theories of media utilization, diffusion, implementation, and policy-making.
- **Management.** Candidates demonstrate knowledge, skills, and dispositions to plan, organize, coordinate, and supervise instructional technology by applying principles of project, resource, delivery system, and information management.
- **Evaluation.** Candidates demonstrate knowledge, skills, and dispositions to evaluate the adequacy of instruction and learning by applying principles of problem analysis, criterion-referenced measurement, formative and summative evaluation, and long-range planning.

### Examinations/Curriculum

For the comprehensive exam, students complete a Web-based professional portfolio and present to program faculty at the end of their degree program.

### Admission

To be considered for admission, all of the Graduate School application requirements and a letter of intent detailing your rationale for proposed

study in Learning Design and Technologies must be submitted to the Graduate School. Completed files are forwarded to the College of Education and reviewed as they are received.

## Degree Requirements (36 Hours)

### Foundational Courses (6 Hours)

Course	Title	Credits
EDRM 700	Introduction to Research in Education	3
EDET 709	Applications of Learning Principles	3
<b>Total Credit Hours</b>		<b>6</b>

### Design Courses (15 Hours)

Course	Title	Credits
EDET 603	Design and Development Tools I	3
EDET 703	Design and Development Tools II	3
EDET 793	Advanced Instructional Design and Development	3
EDET 755	Design and Evaluation of Information Access and Delivery	3
EDET 722	Instructional Design and Assessment	3
<b>Total Credit Hours</b>		<b>15</b>

### Technology Courses (12 Hours)

Course	Title	Credits
EDET 650	Internship in Educational Technology	3
EDET 735	Technological Applications for Diverse Populations	3
EDET 746	Management of Technology Resources	3
EDET 780	Research Seminar in Educational Technology	3
<b>Total Credit Hours</b>		<b>12</b>

### Electives (3 Hours)

(Choose one of the following or other approved by advisor.)

Course	Title	Credits
Select one of the following:		
EDET 652	Design and Evaluation of Games and Simulations	3
EDTE 731	Integration of Technology and Instruction	3
SLIS 706	Information Organization and Access	3
MGMT 722	Labor Relations	3
EDRM 736	Program Evaluation	3
<b>Total Credit Hours</b>		<b>3</b>

## Foundations of Education, Ph.D.

### Program Description

The doctoral program in foundations of education at the University of South Carolina offers both breadth and depth in the study of social, philosophical, and historical issues in education. Faculty combine teaching and scholarship with involvement in the local community as well as work at the state and national levels. In addition to course work in foundations in education, doctoral students are offered the opportunity of an expansive social sciences and humanities education based on an individual program of study they can craft with their advisor and doctoral committee.

## Learning Outcomes

- **Cultural Competence.** Advanced program candidates demonstrate a high level of competence in understanding and responding to diversity of culture, language, and ethnicity.
- **Knowledge and Application of Ethical Principles.** Advanced program candidates demonstrate in-depth knowledge and thoughtful application of the Code of Ethical Conduct and other guidelines relevant to their professional role.
- **Communication Skills.** Advanced program candidates possess a high level of oral, written, and technological communication skills, with specialization for the specific professional role(s) emphasized in the program. For programs for the advanced preparation of teachers, candidates meet ISTE standards. For doctoral programs, candidates are prepared to publish and present at conferences.
- **Mastery of Relevant Theory and Research.** Advanced program candidates demonstrate in-depth, critical knowledge of the theory and research relevant to the professional role(s) and focus area(s) emphasized in the program.
- **Skills in Identifying and Using Professional Resources.** Advanced program candidates demonstrate a high level of skill in identifying and using the human, material, and technological resources needed to perform their professional roles and to keep abreast of the field's changing knowledge base.
- **Inquiry Skills and Knowledge of Research Methods.** Using systematic and professionally accepted approaches, advanced program candidates demonstrate inquiry skills, showing their ability to investigate questions relevant to their practice and professional goals.
- **Skills in Collaborating, Teaching, and/or Mentoring.** Advanced program candidates demonstrate the flexible, varied skills needed to work collaboratively and effectively with other adults in professional roles.
- **Advocacy Skills.** Advanced program candidates demonstrate competence in articulating and advocating for sound professional practices and public policies for the positive development and learning of all students.
- **Leadership Skills.** Advanced program candidates reflect on and use their abilities and opportunities to think strategically, build consensus, create change, and influence better outcomes for students, families, and the profession.

## Specialized Competencies

- **Historical/Contemporary Perspective.** Program candidates must demonstrate in-depth, critical knowledge of scholarly literature on historical and contemporary issues in education.
- **School & Society.** Program candidates should demonstrate an understanding of the complex relationship between schools and society from historical, sociological, cultural, political, and global perspectives.
- **Human Growth.** Program candidates teaching should demonstrate an understanding of human growth and development as a foundation for analyzing and understanding behavior.
- **Development & Presentation of Research.** Program candidates will demonstrate an expertise in the development and presentation of research that includes purpose, methods, results, and conclusions.

## Examinations/Curriculum

For the comprehensive exam, students complete a Web-based professional portfolio and present to program faculty at the end of their degree program.

## Admission

To be considered for admission all of The Graduate School's application requirements, a letter of intent that expresses the applicant's professional goals and specific interest in foundations of education, a curriculum vitae listing prior experiences and scholarly activities, and a writing sample (such as a class paper or a published article) must be on file in:

The Graduate School  
University of South Carolina  
Columbia, SC 29208

## Degree Requirements (63 Post-Baccalaureate Hours)

Doctoral students must complete residency requirements, a program of study, a qualifying examination and written and oral comprehensive exam, and must complete and defend a dissertation.

### Educational Foundations & Inquiry Core Courses (24 Hours)

Course	Title	Credits
<b>Educational Foundations Core</b>		
EDFI 741	International and Comparative Education	3
EDFI 743	The History of Education in the United States	3
EDFI 747	Critical Race Theory and Education	3
EDFI 749	The School in Modern Society	3
<b>Inquiry Core</b>		
EDFI 730	Qualitative Epistemologies, Paradigms, & Theories	3
EDFI 731	Qualitative Inquiry	3
Two EDFI 800-level Qualitative Inquiry Courses (as approved by advisor)		6
<b>Total Credit Hours</b>		<b>24</b>

### Specialization in Educational Foundations or Qualitative Inquiry (6 Hours)

Students select either two additional educational foundations courses or two additional qualitative inquiry courses.

### Multiple Methodologies (6 Hours)

Students complete 6 hours of coursework from different research traditions to establish competence in multiple methodological areas. Courses approved by advisor.

All Ph.D. programs in the College of Education require a minimum of 18 hours of research coursework. Students in the Ph.D. in Educational Foundations and Inquiry meet this requirement by completing 12 hours of research in the EDFI Inquiry Core and an additional 6 hours from different research traditions to establish competence in multiple methodological areas.

## Cognate (12 Hours)

Students complete 12 hours of coursework toward a cognate as approved by advisor.

## Equity and Justice Internship (3 Hours)

The Equity and Justice Internship may be completed once for 3 credit hours or in 1-2 credit hour increments across matriculation in the program for a total of 3 credit hours.

## Dissertation Preparation (12 Hours)

### Play Therapy, Certificate

The Counselor Education Program offers a graduate certificate in play therapy that is designed for individuals who have already completed a Master's degree or higher in counseling, psychology, or social work. The certificate is also available to students already enrolled in the Counselor Education degree programs at the Ed.S. and Ph.D levels.

The certificate program is designed to meet the requirements of the Association for Play Therapy for post-Master's graduate education for individuals interested in pursuing the Registered Play Therapy credential. The Association for Play Therapy recommends the following topics be covered in coursework for individuals seeking the Registered Play Therapy credential:

- Play Therapy History
- Play Therapy Theories
- Play Therapy Techniques or Methods
- Play Therapy Applications

## Admission

The Play Therapy Certificate is open to individuals holding at least a Master's degree in Counseling, Social Work, or Psychology. Current Counselor Education Ed.S. students are also eligible for the certificate and may transfer credits (e.g. EDCE 709) into the certificate program with the guidance of their advisors. No more than 9 credit hours from the Ed.S. in Counselor Education can be applied to the Play Therapy Certificate.

## Certificate Requirements (18 Hours)

### Required Courses

Course	Title	Credits
EDCE 810	Theory and Practice of Play Therapy	3
EDCE 709	Counseling Through Play	3
EDCE 809	Advanced Counseling Through Play	3
EDCE 811	Creative Arts in Counseling	3
EDPY 705	Human Growth and Development	3
EDCE 802P	Practicum in Play Therapy	3
<b>Total Credit Hours</b>		<b>18</b>

## Qualitative Research, Certificate

Administered by the Department of Educational Studies in the College of Education, the Graduate Certificate in Qualitative Research program brings together several courses in qualitative research theory, method, and design in an effort to prepare graduate students, professors, professional researchers, program evaluators, etc. to conduct and apply best practices in the study of qualitative research and in conducting qualitative inquiry. The certificate program is open to all post-Masters

students in education and related disciplines interested in developing expertise in qualitative research methods. This certificate may also meet the doctoral cognate requirements for a number of degree programs within the University.

## Admission Criteria

Applicants with a Master's degree (or the international equivalent) from an accredited college or university should submit the following materials to be considered for admission to the certificate program:

- USC Graduate School application form;
- Curriculum Vitae or Resume;
- A statement of purpose that expresses the applicant's specific interest in the Graduate Certificate in Qualitative Research, details their professional goals, and outlines a relevant and well-defined career path;
- Official transcripts of all previous undergraduate and graduate coursework;
- Two letters of recommendation from professors or employers.

Previously submitted application materials will be accepted for post-Master's students in good academic standing enrolled in any terminal degree program within the University system; however, a new statement of purpose must be submitted to the Graduate School. In addition, via the online application page, students should complete an "Update Request Form" through which they may request concurrent enrollment in a second program. A letter from faculty in both the certificate program and the student's home program supporting their concurrent enrollment is also required by the Graduate School.

It is the applicant's responsibility to make sure that all required application materials have been received. Applicants should list "Graduate Certificate in Qualitative Research" on the application form under degree pursued. The Program accepts applications on a rolling basis (students may begin the Program during the fall or spring semester).

## Certificate Requirements (18 Hours)

The certificate program consists of 18 semester credit hours of course work. All of the required hours in the program must be in courses at the 700-level or above. 9 hours must come from the following courses in the College of Education:

### Coursework

Course	Title	Credits
EDFI 730	Qualitative Epistemologies, Paradigms, & Theories	3
EDFI 731	Qualitative Inquiry	3
<b>Advanced Qualitative Offerings</b>		
Select one of the following:		3
EDFI 832	Educational Biography	
EDFI 833	Narrative Inquiry	
EDFI 834	Participatory Action Research	
EDFI 836	Ethnography and Education	

**Total Credit Hours** 9

## Additional Requirements

Where appropriate 6 hours, and with the approval of the Certificate coordinator, other courses may be substituted for these required courses.

An additional 6 hours of elective courses in qualitative research are chosen based on the student's interest. These elective courses, which require approval by the Certificate coordinator, may be taken in the College of Education, in other university units, or by transfer credit. The final three hours of coursework, selected with the Certificate coordinator, must include a public presentation of a culminating project.

Up to 6 semester hours of graduate credit with grades of B or better may be transferred from another institution into the certificate program; however, these hours must be approved by the Certificate coordinator, must come from an accredited institution, and must be no more than six years old at the time of graduation. Please contact the Certificate coordinator with any questions.

Certificate students must maintain a 3.0 cumulative grade point average (GPA) in all USC courses taken for graduate credit. Any grade lower than a "B" in a certificate course will make the student academically ineligible for certification. There is no residence requirement, but all courses must be completed within six years of enrollment.

## Special Education, M.Ed.

The M.Ed. program in special education is designed for certified teachers who are seeking initial or additional certification in special education. The program includes 150 hours of practicum experience.

## Learning Outcomes

### Learning Disabilities, Emotional/Behavioral Disorders, Mild/Moderate, Severe

- **Foundations.** Special educators understand the field as an evolving and changing discipline based on philosophies, evidence-based principles and theories, relevant laws and policies, diverse and historical points of view, and human issues that have historically influenced and continue to influence the field of special education and the education and treatment of individuals with exceptional needs both in school and society. Special educators understand how these influence professional practice, including assessment, instructional planning, implementation, and program evaluation. Special educators understand how issues of human diversity can impact families, cultures, and schools, and how these complex human issues can interact with issues in the delivery of special education services. They understand the relationships of organizations of special education to the organizations and functions of schools, school systems, and other agencies. Special educators use this knowledge as a ground upon which to construct their own personal understandings and philosophies of special education.
- **Development and Characteristics of Learners.** Special educators know and demonstrate respect for their students first as unique human beings. Special educators understand the similarities and differences in human development and the characteristics between and among individuals with and without exceptional learning needs (ELN)<sup>1/</sup>. Moreover, special educators understand how exceptional conditions can interact with the domains of human development and they use this knowledge to respond to the varying abilities and behaviors of individual's with ELN. Special educators understand how the experiences of individuals with ELN can impact families, as well as the individual's ability to learn, interact socially, and live as fulfilled contributing members of the community.
- **Individual Learning Differences.** Special educators understand the effects that an exceptional condition<sup>2/</sup> can have on an individual's learning in school and throughout life. Special educators understand that the beliefs, traditions, and values across and within cultures can affect relationships among and between students, their families, and the school community. Moreover, special educators are active and resourceful in seeking to understand how primary language, culture, and familial backgrounds interact with the individual's exceptional condition to impact the individual's academic and social abilities, attitudes, values, interests, and career options. The understanding of these learning differences and their possible interactions provides the foundation upon which special educators individualize instruction to provide meaningful and challenging learning for individuals with ELN.
- **Instructional Strategies.** Special educators possess a repertoire of evidence-based instructional strategies to individualize instruction for individuals with ELN. Special educators select, adapt, and use these instructional strategies to promote positive learning results in general and special curricula<sup>3/</sup> and to appropriately modify learning environments for individuals with ELN. They enhance the learning of critical thinking, problem solving, and performance skills of individuals with ELN, and increase their self-awareness, self-management, self-control, self-reliance, and self-esteem. Moreover, special educators emphasize the development, maintenance, and generalization of knowledge and skills across environments, settings, and the lifespan.
- **Learning Environments and Social Interactions.** Special educators actively create learning environments for individuals with ELN that foster cultural understanding, safety and emotional well-being, positive social interactions, and active engagement of individuals with ELN. In addition, special educators foster environments in which diversity is valued and individuals are taught to live harmoniously and productively in a culturally diverse world. Special educators shape environments to encourage the independence, self-motivation, self-direction, personal empowerment, and self-advocacy of individuals with ELN. Special educators help their general education colleagues integrate individuals with ELN in regular environments and engage them in meaningful learning activities and interactions. Special educators use direct motivational and instructional interventions with individuals with ELN to teach them to respond effectively to current expectations. When necessary, special educators can safely intervene with individuals with ELN in crisis. Special educators coordinate all these efforts and provide guidance and direction to paraeducators and others, such as classroom volunteers and tutors.
- **Language.** Special educators understand typical and atypical language development and the ways in which exceptional conditions can interact with an individual's experience with and use of language. Special educators use individualized strategies to enhance language development and teach communication skills to individuals with ELN. Special educators are familiar with augmentative, alternative, and assistive technologies to support and enhance communication of individuals with exceptional needs. Special educators match their communication methods to an individual's language proficiency and cultural and linguistic differences. Special educators provide effective language models and they use communication strategies and resources to facilitate understanding of subject matter for individuals with ELN whose primary language is not English.
- **Instructional Planning.** Individualized decision-making and instruction is at the center of special education practice. Special educators develop long-range individualized instructional plans anchored in

both general and special curricula. In addition, special educators systematically translate these individualized plans into carefully selected shorter-range goals and objectives taking into consideration an individual's abilities and needs, the learning environment, and a myriad of cultural and linguistic factors. Individualized instructional plans emphasize explicit modeling and efficient guided practice to assure acquisition and fluency through maintenance and generalization. Understanding of these factors as well as the implications of an individual's exceptional condition, guides the special educator's selection, adaptation, and creation of materials, and the use of powerful instructional variables. Instructional plans are modified based on ongoing analysis of the individual's learning progress. Moreover, special educators facilitate this instructional planning in a collaborative context including the individuals with exceptionalities, families, professional colleagues, and personnel from other agencies as appropriate. Special educators also develop a variety of individualized transition plans, such as transitions from preschool to elementary school and from secondary settings to a variety of postsecondary work and learning contexts. Special educators are comfortable using appropriate technologies to support instructional planning and individualized instruction.

- **Assessment.** Assessment is integral to the decision-making and teaching of special educators and special educators use multiple types of assessment information for a variety of educational decisions. Special educators use the results of assessments to help identify exceptional learning needs and to develop and implement individualized instructional programs, as well as to adjust instruction in response to ongoing learning progress. Special educators understand the legal policies and ethical principles of measurement and assessment related to referral, eligibility, program planning, instruction, and placement for individuals with ELN, including those from culturally and linguistically diverse backgrounds. Special educators understand measurement theory and practices for addressing issues of validity, reliability, norms, bias, and interpretation of assessment results. In addition, special educators understand the appropriate use and limitations of various types of assessments. Special educators collaborate with families and other colleagues to assure non-biased, meaningful assessments and decision-making. Special educators conduct formal and informal assessments of behavior, learning, achievement, and environments to design learning experiences that support the growth and development of individuals with ELN. Special educators use assessment information to identify supports and adaptations required for individuals with ELN to access the general curriculum and to participate in school, system, and statewide assessment programs. Special educators regularly monitor the progress of individuals with ELN in general and special curricula. Special educators use appropriate technologies to support their assessments.
- **Professional and Ethical Practice.** Special educators are guided by the profession's ethical and professional practice standards. Special educators practice in multiple roles and complex situations across wide age and developmental ranges. Their practice requires ongoing attention to legal matters along with serious professional and ethical considerations. Special educators engage in professional activities and participate in learning communities that benefit individuals with ELN, their families, colleagues, and their own professional growth. Special educators view themselves as lifelong learners and regularly reflect on and adjust their practice. Special educators are aware of how their own and others attitudes, behaviors, and ways of communicating can influence their practice. Special educators understand that culture and language can interact with

exceptionalities, and are sensitive to the many aspects of diversity of individuals with ELN and their families. Special educators actively plan and engage in activities that foster their professional growth and keep them current with evidence-based best practices. Special educators know their own limits of practice and practice within them.

- **Collaboration.** Special educators routinely and effectively collaborate with families, other educators, related service providers, and personnel from community agencies in culturally responsive ways. This collaboration assures that the needs of individuals with ELN are addressed throughout schooling. Moreover, special educators embrace their special role as advocate for individuals with ELN. Special educators promote and advocate the learning and well being of individuals with ELN across a wide range of settings and a range of different learning experiences. Special educators are viewed as specialists by a myriad of people who actively seek their collaboration to effectively include and teach individuals with ELN. Special educators are a resource to their colleagues in understanding the laws and policies relevant to Individuals with ELN. Special educators use collaboration to facilitate the successful transitions of individuals with ELN across settings and services.

## Early Childhood

- **Cultural Competence.** Advanced program candidates demonstrate a high level of competence in understanding and responding to diversity of culture, language, and ethnicity.
- **Knowledge and Application of Ethical Principles.** Advanced program candidates demonstrate in-depth knowledge and thoughtful application of the Code of Ethical Conduct and other guidelines relevant to their professional role.
- **Communication Skills.** Advanced program candidates possess a high level of oral, written, and technological communication skills, with specialization for the specific professional role(s) emphasized in the program. For programs for the advanced preparation of teachers, candidates meet ISTE standards. For doctoral programs, candidates are prepared to publish and present at conferences.
- **Mastery of Relevant Theory and Research.** Advanced program candidates demonstrate in-depth, critical knowledge of the theory and research relevant to the professional role(s) and focus area(s) emphasized in the program.
- **Skills in Identifying and Using Professional Resources.** Advanced program candidates demonstrate a high level of skill in identifying and using the human, material, and technological resources needed to perform their professional roles and to keep abreast of the field's changing knowledge base.
- **Inquiry Skills and Knowledge of Research Methods.** Using systematic and professionally accepted approaches, advanced program candidates demonstrate inquiry skills, showing their ability to investigate questions relevant to their practice and professional goals.
- **Skills in Collaborating, Teaching, and/or Mentoring.** Advanced program candidates demonstrate the flexible, varied skills needed to work collaboratively and effectively with other adults in professional roles.
- **Advocacy Skills.** Advanced program candidates demonstrate competence in articulating and advocating for sound professional practices and public policies for the positive development and learning of all students.
- **Leadership Skills.** Advanced program candidates reflect on and use their abilities and opportunities to think strategically, build consensus,

create change, and influence better outcomes for students, families, and the profession.

### National Board for Professional Teaching Standards

1. Teachers are Committed to Students and Learning.
  - a. Demonstrate an understanding of students' cognitive development and the influence of context and culture.
  - b. Foster all students' cognitive, affective, and social/cultural development, adjusting practice to meet individual needs.
2. Teachers Know the Subjects They Teach and How to Teach Those Subjects to Students.
  - a. Know subject(s) they teach.
  - b. Know students' typical understanding of subjects and how to teach subject(s).
  - c. Foster problem posing and solving.
3. Teachers are Responsible for Managing and Monitoring Student Learning.
  - a. Establish disciplined learning environment and effectively engage students using a range of appropriate teaching techniques.
  - b. Enlist expertise of others to complement own teaching.
  - c. Assess individual students and whole class using multiple measures and communicate assessment/data collection to parents.
4. Teachers Think Systematically about Their Practice and Learn from Experience.
  - a. Demonstrate an experimental and problem solving approach to teaching applying theory, research, and personal experience to making decisions of practice.
  - b. Critically examine practice on an on-going basis.
5. Teachers are Members of Learning Communities.
  - a. Work collaboratively with others, including colleagues and parents, to foster school progress and improve educational experiences in the context of the community/state and through the development of curriculum, instruction, and staff.
  - b. Use community resources to the benefit of students.

## Examinations and Certification

Students must do the following:

- maintain an average grade of B or better on all courses taken for graduate credit. Grades of C+ or lower on any 12 hours of graduate work at the University will disqualify a student for a graduate degree from the College of Education.
- pass a comprehensive examination in the area of specialization.

*Note: The M.Ed. program is not designed for initial teacher certification. Students wishing to use the M.Ed. program to add certification in an area of special education to their existing teaching certificates must meet requirements as mandated by the S.C. Department of Education. Further information may be obtained from the S.C. Department of Education or from the College of Education's Office of Students Affairs.*

## Admission

1. To be considered for admission all of the following materials must be on file in The Graduate School, University of South Carolina, Columbia, SC 29208.
  - transcripts of all college and university credits
  - two letters of recommendation from former professors or work supervisors in the field of education

- a completed graduate school application
  - a letter of intent for proposed study in special education
  - Graduate Record Examination (verbal and quantitative sections) or Miller Analogies Test scores, taken within five years of application date
  - evidence of initial certification
2. Upon verification of the above requirements, the applicant will interview with the Programs in Special Education Committee and participate in an extemporaneous writing sample.
  3. Acceptance by The Graduate School and the programs in special education is based on the evaluation of the applicant's total academic profile by two admissions committee members. The admissions committee members will rate the applicant's letters of recommendation, GPA, test scores, writing sample, and interview on a 100-point scale and determine an overall average score. Specifically, a GPA of 2.5 to 3-Cl is equivalent to 75 points and an 800 on the GRE or 388 on the Millers is equivalent to 75 points. The averaged ratings of the committee must meet or exceed 75 for the applicant to be admitted to the M.A.T. program. The profile of typical students admitted into the M.Ed. in Special Education for the past three years on selected items is as follows: GPA.: 3.5 or above; GRE425/500 or Miller Analogies: 400.

## Degree Requirements (33 Hours)

### Prerequisite Courses

Course	Title	Credits
EDEX 523	Introduction to Exceptional Children	3
EDPY 705	Human Growth and Development (additional prerequisite for Early Childhood Special Education only)	3
<b>Total Credit Hours</b>		<b>6</b>

Note: EDEX 523 and EDPY 705 do not count toward the 33 hours required for the M.Ed. degree.

### Professional Core Requirements (12 Hours)

*Required for all concentrations*

Course	Title	Credits
EDEX 580	Direct Instruction in Reading for At-Risk Learners	3
Select one of the following:		3
EDEX 714B	Practicum in Instruction of Exceptional Children II: B (Behavioral Disorders)	
EDEX 714E	Practicum in Instruction of Exceptional Children II: E (Early Childhood Special Education)	
EDEX 714L	Practicum in Instruction of Exceptional Children II: L (Learning Disabilities)	
EDEX 714M	Practicum in Instruction of Exceptional Children II: ID (Intellectual Disabilities)	
EDEX 714S	Practicum in Instruction of Exceptional Children II: S (Severe/Multiple)	
EDEX 715	Applied Behavior Analysis in Special Education	3
EDEX 716	Functional Behavioral Assessment and Behavior Interventions	3
<b>Total Credit Hours</b>		<b>12</b>

## Specialization Area Requirements (21 Hours for each concentration)

### A. Early Childhood Special Education (21 Hours)

Course	Title	Credits
EDEX 530	Introduction to Early Childhood Special Education	3
EDEX 630	Educational Procedures for Early Childhood Special Education	3
EDEX 643	Social/Emotional Development and Guidance for Young Children with Developmental Delays	3
EDEX 646	Advanced Procedures for Assessment in Early Childhood Special Education (ECSE)	3
EDEX 692	Partnerships in Early Childhood Special Education	3
EDEX 701	Nature of Students with Autism	3
EDRM 700	Introduction to Research in Education	3
<b>Total Credit Hours</b>		<b>21</b>

### B. Emotional and Behavioral Disorders (21 Hours)

Course	Title	Credits
EDEX 582	Teaching Mathematics to Students at Risk	3
EDEX 632	Nature of Students with Emotional and Behavior Disabilities	3
EDEX 640	Managing Problem Behavior in the Classroom	3
EDEX 691	Collaborative Partnerships in PK-12 Special Education	3
EDEX 784	Instruction of Students with Emotional and Behavioral Disorders	3
EDEX 790	Introduction to Assessment in Special Education	3
EDEX 891	Advanced Educational Procedures for Exceptional Children	3
<b>Total Credit Hours</b>		<b>21</b>

### C. Learning Disabilities (21 Hours)

Course	Title	Credits
EDEX 531	Nature of Students with Specific Learning Disabilities	3
EDEX 582	Teaching Mathematics to Students at Risk	3
EDEX 616	Instruction of Students with Specific Learning Disabilities	3
EDEX 640	Managing Problem Behavior in the Classroom	3
EDEX 691	Collaborative Partnerships in PK-12 Special Education	3
EDEX 790	Introduction to Assessment in Special Education	3
EDEX 891	Advanced Educational Procedures for Exceptional Children	3
<b>Total Credit Hours</b>		<b>21</b>

### D. Intellectual Disabilities (21 Hours)

Course	Title	Credits
EDEX 582	Teaching Mathematics to Students at Risk	3
EDEX 619	Nature of Students with Intellectual Disabilities	3
EDEX 640	Managing Problem Behavior in the Classroom	3
EDEX 691	Collaborative Partnerships in PK-12 Special Education	3
EDEX 712	Instruction of Students with Intellectual Disabilities	3

EDEX 790	Introduction to Assessment in Special Education	3
EDEX 891	Advanced Educational Procedures for Exceptional Children	3

**Total Credit Hours** 21

### E. Severe and Multiple Disabilities (21 Hours)

Course	Title	Credits
EDEX 610	Instruction of Students with Severe and Multiple Disabilities	3
EDEX 615	Curriculum and Language Instruction for Students with Severe and Multiple Disabilities	3
EDEX 619	Nature of Students with Intellectual Disabilities	3
EDEX 640	Managing Problem Behavior in the Classroom	3
EDEX 701	Nature of Students with Autism	3
EDEX 790	Introduction to Assessment in Special Education	3
EDEX 809	Single-Case Research Designs in Special Education	3

**Total Credit Hours** 21

## Special Education, Ph.D. Tracks

1. University Teaching and Research
2. Special Education Leadership

## Program Description

The Ph.D. program in special education focuses on preparing special education professionals with emphasis on either teacher education and research or administration and leadership. The Ph.D. program prepares its graduates to become successful and productive special education faculty members or administrators through an intensive course of advanced study. Courses include both seminars and experiential learning.

## Learning Outcomes

- **Cultural Competence.** Advanced program candidates demonstrate a high level of competence in understanding and responding to diversity of culture, language, and ethnicity
- **Knowledge and Application of Ethical Principles.** Advanced program candidates demonstrate in-depth knowledge and thoughtful application of the Code of Ethical Conduct and other guidelines relevant to their professional role.
- **Communication Skills.** Advanced program candidates possess a high level of oral, written, and technological communication skills, with specialization for the specific professional role(s) emphasized in the program. For programs for the advanced preparation of teachers, candidates meet ISTE standards. For doctoral programs, candidates are prepared to publish and present at conferences.
- **Mastery of Relevant Theory and Research.** Advanced program candidates demonstrate in-depth, critical knowledge of the theory and research relevant to the professional role(s) and focus area(s) emphasized in the program.
- **Skills in Identifying and Using Professional Resources.** Advanced program candidates demonstrate a high level of skill in identifying and using the human, material, and technological resources needed to perform their professional roles and to keep abreast of the field's changing knowledge base.

- **Inquiry Skills and Knowledge of Research Methods.** Using systematic and professionally accepted approaches, advanced program candidates demonstrate inquiry skills, showing their ability to investigate questions relevant to their practice and professional goals.
- **Skills in Collaborating, Teaching, and/or Mentoring.** Advanced program candidates demonstrate the flexible, varied skills needed to work collaboratively and effectively with other adults in professional roles.
- **Advocacy Skills.** Advanced program candidates demonstrate competence in articulating and advocating for sound professional practices and public policies for the positive development and learning of all students.
- **Leadership Skills.** Advanced program candidates reflect on and use their abilities and opportunities to think strategically, build consensus, create change, and influence better outcomes for students, families, and the profession.

## Specialized Competencies

- Demonstrate the ability to identify and discuss major theories and philosophies related to learning and the education of individuals with disabilities
- Demonstrate the ability to identify governmental and legal structures, requirements, and parameters relating to the education and life issues of individuals with disabilities.
- Demonstrate knowledge of the theoretical support for analysis of policies, procedures, and strategies that govern and direct educational programs (leadership).
- Demonstrate knowledge of theories in educational leadership and the application of these theories in practical settings (leadership).
- Demonstrate knowledge of pedagogical styles and the application of these styles in practical settings (higher ed).
- Demonstrate a personal philosophy of teacher-education and pedagogical preferences, and the application of this knowledge in practical settings (higher ed).

## Admission

1. In addition to The Graduate School's application requirements, applicants must have the following materials on file at The Graduate School, University of South Carolina, Columbia, SC 29208, by the deadline of February 14. Students applying for grant positions must have all materials on file prior to faculty interview.
  - a supplemental application form for the Ph.D. in Special Education, and a letter of intent
  - evidence that the applicant holds a professional certification in education or a related field (e.g., speech/language pathology, school psychology)
  - evidence of five years of direct educational experience, which may include working with exceptional individuals in school, clinic, or residential settings.
2. Upon verification of the above requirements the applicant will interview with the Programs in Special Education Admissions Committee and participate in an extemporaneous writing sample.

## Degree Requirements (63-66 Post-Masters Hours)

### Prerequisites

Course	Title	Credits
EDEX 710	Legal Issues in Special Education	3
EDEX 750	Technology and Exceptional Populations	3
EDEX 891	Advanced Educational Procedures for Exceptional Children	3
EDRM 700	Introduction to Research in Education	3
<b>Total Credit Hours</b>		<b>12</b>

### Foundation Courses (15 Hours)

Select **one** course from each section.

Course	Title	Credits
<b>Educational Foundations</b>		
Sample courses:		3
EDFI 743	The History of Education in the United States	
EDFI 744	Philosophy and Education	
EDFI 847	Modern Philosophies of Education	
<b>Educational Psychology</b>		
Sample courses:		3
EDPY 706	Growth and Development: Childhood	
EDPY 835	Educational Psychology	
<b>Educational Statistics</b>		
EDRM 710	Educational Statistics I	3
<b>Curriculum</b>		
Sample courses:		3
EDEL 715	The Elementary School Curriculum	
EDEL 720	Middle School Organization and Curriculum	
EDCS 725	Principles of Curriculum Construction	
<b>Legal Basis of Educational Organization and Administration</b>		
EDLP 705	Legal Basis of Educational Organization and Administration	3
<b>Total Credit Hours</b>		<b>15</b>

## Area of Specialization - Emphasis 1 or 2 (21 Hours)

### Emphasis 1 - Special Education Leadership

Course	Title	Credits
EDEX 815	Coordination of Programs for Exceptional Children	3
EDEX 892A	Internship in Exceptional Children: A (Administration)	3-6
EDEX 893	Advanced Topics in Exceptional Children	3
EDEX 894	Research Seminar in Special Education	3
EDLP 702	School Personnel Administration	3
EDLP 703	Supervision of Instruction	3
EDLP 704	School Finance and Business Management	3
<b>Total Credit Hours</b>		<b>21-24</b>

### Emphasis 2 - Research/College Teaching-Special Education

Course	Title	Credits
EDEX 892P	Internship in Exceptional Children: P (Pedagogy)	3-6
EDEX 893	Advanced Topics in Exceptional Children	3



EDEX 894	Research Seminar in Special Education	3
EDRM 712	Nonparametric Statistics	3
Select six hours of two of the following or one of the following and an approved elective: 6		
EDRM 718	Research and the Statistical Packages	
EDRM 721	Constructing Cognitive Instruments	
EDFI 731	Qualitative Inquiry	
EDRM 810	Design and Analysis of Experiments	
EDRM 816	Correlational and Multivariate Methods	
EDRM 840	Advanced Qualitative Inquiry in Education	
<b>Total Credit Hours</b>		<b>18-21</b>

### Research and Dissertation (18 Hours)

Course	Title	Credits
EDRM 711	Educational Statistics II	3
EDEX 809	Single-Case Research Designs in Special Education	3
EDEX 899	Dissertation Preparation <sup>1</sup>	12
<b>Total Credit Hours</b>		<b>18</b>

<sup>1</sup> Three hours, of which may be taken as EDRM 897.

### Cognate (9-12 Hours)

Outside Department of Educational Studies

## Initial Teacher Certification Programs

The USC initial teacher certification programs prepare exemplary Collaborative Educational Leaders with the knowledge, skills, and dispositions they need to positively impact classrooms and a wide spectrum of educational enterprises. USC's two graduate degree programs that lead to teacher certification are the Master of Arts in Teaching (M.A.T.) and the Master of Teaching (M.T.) degrees. Certified teachers are NOT eligible for these degrees.

Undergraduate initial teacher certification programs can be found in the *Undergraduate Bulletin*.

M.A.T. degrees are designed for career-changers or those deciding to become teachers after completing a bachelor's degree in an area other than education. M.A.T. degrees are available in many areas including elementary education (grades 2-6); areas of P-12 certification (e.g., art, foreign languages, music, physical education, special education, and theatre), and secondary English, mathematics, science, and social studies (grades 9-12).

The College of Education offers M.A.T. programs in collaboration with departments in other college/schools, as appropriate for each program. In general, M.A.T. programs include a minimum of 45 credit hours with 6-15 credit hours in professional education coursework, 15-24 credit hours in the content area, and 15 credit hours of internship/directed teaching and seminar. See the specific requirements for each M.A.T. degree.

The M.T. degree program is a "fifth-year" program designed for candidates who attend USC as undergraduates, earn a bachelors degree in an appropriate content major, and complete a 12-15 credit hour education core of courses. The M.T. degree is specifically designed to prepare graduates to teach in the secondary education areas of English, mathematics, science, and social studies. The degree includes a

minimum of 39 credit hours including 15-24 credit hours in professional education and 15 credit hours in internship and seminar.

Graduation from all M.A.T. and M.T. programs requires successful completion of all course work, including internship/directed teaching and a comprehensive examination. Placement for internships/directed teaching will be made only in the Columbia metropolitan area.

Questions about applying to the M.A.T. and M.T. programs should be directed to the College of Education, Office of Student Affairs in Wardlaw 113 (777-6732; teach@mailbox.sc.edu).

## Professional Program in Education and Internship/Directed Teaching

Candidates are required to apply for and obtain formal admission to the professional program in education prior to the internship or directed teaching experience. All candidates seeking admission to the graduate Professional Program in Education must:

- be fully admitted to the Graduate School and to the program
- have a minimum overall graduate GPA of 3.00 or higher
- submit formal application to the Professional Program in Education
- submit a graduate program (Program of Study) form signed by appropriate advisor(s)
- satisfy all program-specific requirements
- submit a passing score on the state-mandated Education and Economic Development Act Assessment (EEDA) module
- be recommended by faculty

Some areas may have additional and/or more restrictive criteria. Requirements are specified under each program area. Candidates seeking teacher certification must also apply for internship or directed teaching in order to successfully complete their program of study.

## Certification

In the teacher certification degree programs (M.A.T. and M.T.), the degree requirements and certification requirements are linked. Inasmuch as the certification requirements are the responsibility of the S.C. State Board of Education, if state regulations change, degree requirements are also subject to change. All candidates seeking teacher certification must:

- successfully complete the requirements of the degree program
- achieve test scores at or above those established by the state on the program-appropriate exams (Praxis II Series); scores earned on the Praxis must be submitted to the Office of Student Affairs, College of Education, Wardlaw 113, USC, and to the South Carolina Department of Education
- submit to an FBI and SLED background check for prior felony convictions and be cleared by the FBI and SLED prior to internship/directed teaching
- pay all certification fees as required
- successfully complete ADEPT requirements with a positive recommendation for certification.

## Admissions Criteria

Regulations and requirements for admission to graduate study and graduate degree candidacy for Initial Teacher Certification Programs correspond to those of The Graduate School. In accordance with the general regulations of The Graduate School, the College of Education,

and the various graduate Initial Teacher Certification Program Areas, any candidate for the M.A.T. or M.T. program is required to meet the following admissions criteria:

- hold a baccalaureate degree with a grade point average of 2.50 or higher (based on a 4.00 system)
- submit acceptable scores from either the GRE, Miller's Analogy Test, or Praxis Subject Assessments as indicated by each program/degree
- obtain at least two letters of recommendation (some programs require more) from those who can clearly attest to the candidate's knowledge, skills, and dispositions relevant to the degree sought
- submit supplemental application, letter or statement of intent, and/or be interviewed if required by the degree area

Some areas may have additional admission criteria.

## Programs

- Art Education, M.A.T. (P-12 Certification) (p. 242)
- Elementary Education, M.A.T. (2-6 Certification) (p. 243)
- English, M.A.T. (Secondary Education) (p. 244)
- Foreign Language, M.A.T. (P-12 Certification) (p. 245)
- Mathematics, M.A.T. (Secondary Education) (p. 245)
- Music Education, M.A.T. (P-12 Certification) (p. 247)
- Physical Education, M.A.T. (P-12 Certification) (p. 248)
- Sciences, M.A.T. (Secondary Education) (p. 249)
- Secondary Education, M.T. (p. 251)
- Social Studies, M.A.T. (Secondary Education) (p. 255)
- Special Education, M.A.T. (P-12 Certification) (p. 256)
- Theatre, M.A.T. (P-12 Certification) (p. 258)

## Art Education, M.A.T. (P-12 Certification)

### Art Education M.A.T. (P – 12 Certification)

The Master of Arts in Teaching (M.A.T.) degree in Art Education is designed for initial teacher certification in Art Education (K-12) and requires a minimum of **48** semester hours of graduate course work, including: **6** hours in Professional Education, **27** hours in the Teaching Content Area, and **15** hours of Directed Study. In addition, students must complete a minimum of 21 hours of prerequisites in the Studio Art and Art History areas in order to be certified by the State of South Carolina.

Each candidate must successfully complete a comprehensive examination.

Additionally, in order to be certified by the State of South Carolina, the candidate must pass a series of Praxis Subject Assessment Tests (Praxis II and PLT) and the EEDA exam.

#### Learning Outcomes

**Content of Art:** Art teacher candidates have a thorough understanding of the content of art and make informed selections of instructional content.

**Knowledge of Students:** Art teacher candidates have a comprehensive knowledge of student characteristics, abilities, and learning styles; are sensitive observers in the classroom; and are able to use knowledge of students to plan appropriate instruction.

**Curriculum Development:** Art teacher candidates develop curriculum reflective of the goals and purposes of art education; curriculum reflective of understanding of the breadth, the depth, and the purposes of art; and curriculum inclusive of the goals, values, and purposes of education, the community, and society.

**Instruction:** Art teacher candidates are able to affect student learning in the content of art; create effective instructional environments conducive to student learning; are well versed in pedagogy; inquire into their own practices and the nature of art teaching; and are instructional collaborators.

**Assessment:** Art teacher candidates conduct meaningful and appropriate assessments of student learning, systematically reflect upon their own teaching practice, and deal with broader issues in the school setting beyond concern for individual students.

**Professional Responsibility:** Art teacher candidates continually reflect on their own practice, recognize their responsibilities to the schools and the community, and contribute to the growth of the profession.

## Required Documents

- Online Application to the Graduate School
- Official GRE or MAT Scores
- Official Transcripts
- 2 Letters of Recommendation (at least one must be from a professor)
- Personal Statement
- CV or Resume
- Portfolio: Please upload a digital portfolio of 20 images of recent work and an identifying list of works, as a single .pdf document

Note: Successful applicants to the graduate programs in Art Education typically have an undergraduate GPA of 3.00 or higher on a 4.00 scale and acceptable scores on either the Miller Analogies Test (35 and above) or the GRE (total score of 170 and above). These numbers are provided as guidelines; meeting the minimum GPA and test scores does not guarantee admission. All parts of an application are carefully considered in admissions decisions.

## Degree Requirements (48 Hours)

### Professional Education (6 Hours)

Course	Title	Credits
EDPY 705 or EDPY 707	Human Growth and Development Growth and Development: Middle Childhood and Adolescence	3
Select one of the following:		3
EDRD 500	Content Area Literacy PK-12	
EDEX 581	Teaching Reading in the Content Area to Adolescents with Reading Disabilities	
EDRD 732	Teaching Reading and Writing in the Content Areas	
<b>Total Credit Hours</b>		<b>6</b>

## Content Area (27 Hours)

Course	Title	Credits
ARTE 725	Elementary Pedagogy Methods for Art Instruction	3
ARTE 725P	Elementary Pedagogy Methods for Art Instruction Practicum	1
ARTE 750	Interactive Technology for Art Teachers	3
ARTE 740	Art Program for Schools	3
ARTE 740P	Art Program for Schools Practicum	1
ARTE 760	Secondary Pedagogy Methods for Art Instruction	3
ARTE 760P	Secondary Pedagogy Methods for Art Instruction Practicum	1
ARTE 701	Seminar in Art Education	3
ARTE 702	Problems in the Teaching of Art	3
ARTE 703	Issues and Trends in Art Education	3
ARTE 705	Program Development in Art	3
<b>Total Credit Hours</b>		<b>27</b>

## Directed Teaching (15 Hours)

Course	Title	Credits
ARTE 771	Art Education Internship	12
ARTE 765	Art Education Internship Seminar	3
<b>Total Credit Hours</b>		<b>15</b>

## Additional Hours

The following are required for certification if they were not taken at the undergraduate level.

Course	Title	Credits
<b>Art Studio</b>		<b>15</b>
	Fundamental Design	
	Drawing	
	Painting	
	Ceramics	
	Printmaking	
<b>Art History</b>		<b>6</b>
	Pre-history to Renaissance	
	Renaissance to Modern	
<b>Total Credit Hours</b>		<b>21</b>

## Elementary Education, M.A.T. (2-6 Certification)

The M.A.T. program in Elementary Education is a 33 credit-hour degree designed for “career changers” to teach in the elementary grades 2 through 6. Candidates may or may not have taken any education courses as undergraduates.

## Learning Outcomes

### Development, Learning, and Motivation

- Development, Learning, and Motivation—Candidates know, understand, and use the major concepts, principles, theories, and research related to development of children and young adolescents to construct learning opportunities that support individual students’ development, acquisition of knowledge, and motivation.

## Curriculum Standards

- Reading, Writing, and Oral Language—Candidates demonstrate a high level of competence in use of English language arts and they know, understand, and use concepts from reading, language and child development, to teach reading, writing, speaking, viewing, listening, and thinking skills and to help students successfully apply their developing skills to many different situations, materials, and ideas.
- Science—Candidates know, understand, and use fundamental concepts of physical, life, and earth/space sciences. Candidates can design and implement age-appropriate inquiry lessons to teach science, to build student understanding for personal and social applications, and to convey the nature of science.
- Mathematics—Candidates know, understand, and use the major concepts and procedures that define number and operations, algebra, geometry, measurement, and data analysis and probability. In doing so they consistently engage problem solving, reasoning and proof, communication, connections, and representation.
- Social studies—Candidates know, understand, and use the major concepts and modes of inquiry from the social studies—the integrated study of history, geography, the social sciences, and other related areas—to promote elementary students’ abilities to make informed decisions as citizens of a culturally diverse democratic society and interdependent world.
- The arts—Candidates know, understand, and use—as appropriate to their own understanding and skills—the content, functions, and achievements of the performing arts (dance, music, theater) and the visual arts as primary media for communication, inquiry, and engagement among elementary students.
- Health education—Candidates know, understand, and use the major concepts in the subject matter of health education to create opportunities for student development and practice of skills that contribute to good health.
- Physical education—Candidates know, understand, and use—as appropriate to their own understanding and skills—human movement and physical activity as central elements to foster active, healthy life styles and enhanced quality of life for elementary students.

## Instruction Standards

- Integrating and applying knowledge for instruction—Candidates plan and implement instruction based on knowledge of students, learning theory, connections across the curriculum, curricular goals, and community.
- Adaptation to diverse students—Candidates understand how elementary students differ in their development and approaches to learning, and create instructional opportunities that are adapted to diverse students.
- Development of critical thinking and problem solving—Candidates understand and use a variety of teaching strategies that encourage elementary students’ development of critical thinking and problem solving.
- Active engagement in learning—Candidates use their knowledge and understanding of individual and group motivation and behavior among students at the K-6 level to foster active engagement in learning, self motivation, and positive social interaction and to create supportive learning environments.
- Communication to foster collaboration—Candidates use their knowledge and understanding of effective verbal, nonverbal, and media communication techniques to foster active inquiry,

collaboration, and supportive interaction in the elementary classroom.

### Assessment Standards

- Assessment for instruction—Candidates know, understand, and use formal and informal assessment strategies to plan, evaluate and strengthen instruction that will promote continuous intellectual, social, emotional, and physical development of each elementary student.

### Professionalism Standards

- Professional growth, reflection, and evaluation—Candidates are aware of and reflect on their practice in light of research on teaching, professional ethics, and resources available for professional learning; they continually evaluate the effects of their professional decisions and actions on students, families and other professionals in the learning community and actively seek out opportunities to grow professionally.
- Collaboration with families, colleagues, and community agencies—Candidates know the importance of establishing and maintaining a positive collaborative relationship with families, school colleagues, and agencies in the larger community to promote the intellectual, social, emotional, physical growth and well-being of children.

## Admission

All application materials must be submitted to the UofSC Graduate School. Upon verification of all requirements, the applicant will interview with Elementary faculty.

## Degree Requirements (33 Hours)

Students must complete the following requirements:

### Professional Education Courses (24 Hours)

Course	Title	Credits
EDTE 733	Reading and Language Arts in Early Childhood and Elementary Education	6
EDTE 771	Studies and Internship I in Teaching Math-Early/Elementary Education	3
EDEL 701	Culturally Sustaining Pedagogy for the Elementary Classrooms	3
EDEL 743	Studies and Internship in Teaching Social Studies-Elementary	3
EDEL 744	Studies and Internship in Teaching Science -Elementary	3
EDRD 600	Foundations of Reading Instruction	3
EDPY 705	Human Growth and Development	3
<b>Total Credit Hours</b>		<b>24</b>

### Internship and Seminar (9 Hours)

Course	Title	Credits
EDEL 790	MAT Internship in Elementary Education	9
<b>Total Credit Hours</b>		<b>9</b>

## English, M.A.T. (Secondary Education)

In addition to fulfilling requirements for admission common to all degree programs, an applicant to the M.A.T. program must have at least 18 semester hours of the following upper-level literature courses or their equivalent: Black literature (ENGL 428A, ENGL 428B, ENGL 430, ENGL 438D, ENGL 438D or ENGL 565)- may be taken after conditional admission); contemporary literature; pre-1800 literature; a non-Western literature; and 6 credits in survey-type, upper-division English and/or American literature survey courses. Applicants without a standard English major may fulfill this 18-semester-hour requirement only by taking upper-division courses that the Department of English M.A.T. advisor approves. Applicants with academic deficiencies may be required to take additional 400-level English courses

## Learning Outcomes

- Candidates follow a specific curriculum and are expected to meet appropriate performance assessments for preservice English language arts teachers.
- Through modeling, advisement, instruction, field experiences, assessment of performance, and involvement in professional organizations, candidates adopt and strengthen professional attitudes needed by English language arts teachers.
- Candidates demonstrate knowledge of, and skills in the use of, the English language.
- Candidates demonstrate knowledge of the practices of oral, visual, and written literacy.
- Candidates demonstrate knowledge of different composing processes.
- Candidates demonstrate knowledge of, and uses for, an extensive range of literature.
- Candidates demonstrate knowledge of the range and influence of print and nonprint media and technology in contemporary culture.
- Candidates demonstrate knowledge of research theory and findings in English language arts.
- Candidates acquire and demonstrate the dispositions and skills needed to integrate knowledge of English language arts, students, and teaching.

## Degree Requirements (48 Hours)

Requirements include a minimum of 15 graduate credits in English.

Note: In order to meet SC Read to Succeed requirements, students completing the MAT degree in the content area of English must include on their program of study the following:

Course	Title	Credits
EDRD 600	Foundations of Reading Instruction	3
EDRD 651	Introduction to Teaching Media Literacy	3
EDSE 786	The Teaching of Literature in the Secondary School	3
EDSE 787	The Teaching of Composition in the Secondary School	3
EDSE 728	Advanced Study of the Teaching of English in Secondary Schools	3

EDSE 584 Middle and High School Internship Seminar 3

**Total Credit Hours** 18

## Foreign Language, M.A.T. (P-12 Certification)

Each M.A.T. degree in a foreign language area prepares graduates for teaching with professional licensure at the K-12 levels in a specific language. M.A.T. degrees are available in the foreign language areas of French, German, and Spanish.

### Learning Outcomes

- Candidates (a) demonstrate a high level of proficiency in the target language, and they seek opportunities to strengthen their proficiency (See the following supporting explanation and rubrics for required levels of proficiency.); (b) know the linguistic elements of the target language system, recognize the changing nature of language, and accommodate for gaps in their own knowledge of the target language system by learning on their own; and (c) know the similarities and differences between the target language and other languages, identify the key differences in varieties of the target language, and seek opportunities to learn about varieties of the target language on their own.
- Candidates (a) demonstrate that they understand the connections among the perspectives of a culture and its practices and products, and they integrate the cultural framework for foreign language standards into their instructional practices; (b) recognize the value and role of literary and cultural texts and use them to interpret and reflect upon the perspectives of the target cultures over time; and (c) integrate knowledge of other disciplines into foreign language instruction and identify distinctive viewpoints accessible only through the target language.
- Candidates (a) demonstrate an understanding of language acquisition at various developmental levels and use this knowledge to create a supportive classroom learning environment that includes target language input and opportunities for negotiation of meaning and meaningful interaction and (b) develop a variety of instructional practices that reflect language outcomes and articulated program models and address the needs of diverse language learners.
- Candidates (a) demonstrate an understanding of the goal areas and standards of the Standards for Foreign Language Learning and their state standards, and they integrate these frameworks into curricular planning; (b) integrate the Standards for Foreign Language Learning and their state standards into language instruction; and (c) use standards and curricular goals to evaluate, select, design, and adapt instructional resources.
- Candidates (a) believe that assessment is ongoing, and they demonstrate knowledge of multiple ways of assessment that are age- and level-appropriate by implementing purposeful measures; (b) reflect on the results of student assessments, adjust instruction accordingly, analyze the results of assessments, and use success and failure to determine the direction of instruction; and (c) interpret and report the results of student performances to all stakeholders and provide opportunity for discussion.
- Candidates (a) engage in professional development opportunities that strengthen their own linguistic and cultural competence and promote reflection on practice and (b) know the value of foreign language learning to the overall success of all students and

understand that they will need to become advocates with students, colleagues, and members of the community to promote the field.

## Degree Requirements (45 Hours)

All candidates must complete 21 hours of graduate course work focusing specifically on their respective language and specific language-teaching area, and 24 hours of graduate course work in professional education more generally, as well as fulfill all other requirements for Class I licensure. Course work in a respective language should cover a range of topics in the areas of linguistics, literature, culture, and the teaching of the respective language, and should be taken in consultation with the student's academic advisor in order to prepare for the MAT comprehensive exam. A breakdown of required courses across the Spanish, French, and German programs are as follows:

### Specific Language and Language Teaching Requirements (21 Hours)

Course	Title	Credits
FREN/GERM/SPAN 500+	Three courses approved by academic advisor	9
Select one of the following:		
FREN 517	French Linguistics	
GERM 515	Introduction to German Linguistics	
SPAN 515	Introduction to Spanish Linguistics	
FREN/GERM/SPAN 700+	Course approved by academic advisor	3
FORL 510	Teaching Second Languages to Young Children (with focus on student's respective language)	3
FORL 776	The Teaching of Foreign Languages in College (with focus on student's respective language)	3
<b>Total Credit Hours</b>		<b>21</b>

### Professional Licensure Course Requirements (24 Hours)

Course	Title	Credits
Select one of the following courses focusing on teaching literacy, reading, and/or writing:		
EDRD 500	Content Area Literacy PK-12	
EDEX 581	Teaching Reading in the Content Area to Adolescents with Reading Disabilities	
EDRD 730	Teaching Reading and Writing in the Content Areas	
EDRD 732	Teaching Reading and Writing in the Content Areas	
EDPY 705 or EDPY 707	Human Growth and Development Growth and Development: Middle Childhood and Adolescence	3
FORL 511	Teaching Foreign Languages in Secondary Schools	3
FORL 772	Technology in Foreign Language Education	3
FORL 774A	Teaching Internship (Foreign Languages)	3
FORL 774B	Teaching Internship (Foreign Languages)	9
<b>Total Credit Hours</b>		<b>24</b>

## Mathematics, M.A.T. (Secondary Education)

The department offers two degree programs for students who wish to emphasize secondary and junior college mathematics education—the M.A.T. and the M.M. degrees. Courses at the 700-level specifically

designed for these programs are designated by the letter I adjoined to the course number. These courses are generally offered in the late afternoon during the academic year and during the summer to provide area teachers the opportunity to work toward a degree on a part-time basis.

The M.A.T. in mathematics is offered by the Department of Mathematics jointly with the College of Education. This degree program is designed specifically for students who wish to obtain teaching certification in mathematics at the secondary level.

## Learning Outcomes

- Knowledge of Problem Solving. Candidates know, understand and apply the process of mathematical problem solving.
- Knowledge of Reasoning and Proof. Candidates reason, construct, and evaluate mathematical arguments and develop an appreciation for mathematical rigor and inquiry.
- Knowledge of Mathematical Communication. Candidates communicate their mathematical thinking orally and in writing to peers, faculty and others.
- Knowledge of Mathematical Connections. Candidates recognize, use, and make connections between and among mathematical ideas and in contexts outside mathematics to build mathematical understanding.
- Knowledge of Mathematical Representation. Candidates use varied representations of mathematical ideas to support and deepen students' mathematical understanding.
- Knowledge of Technology. Candidates embrace technology as an essential tool for teaching and learning mathematics.
- Dispositions. Candidates support a positive disposition toward mathematical processes and mathematical learning.
- Knowledge of Mathematics Pedagogy. Candidates possess a deep understanding of how students learn mathematics and of the pedagogical knowledge specific to mathematics teaching and learning.
- Knowledge of Number and Operations. Candidates demonstrate computational proficiency, including a conceptual understanding of numbers, ways of representing number, relationships among number and number systems, and the meaning of operations.
- Knowledge of Different Perspectives on Algebra. Candidates emphasize relationships among quantities including functions, ways of representing mathematical relationships, and the analysis of change.
- Knowledge of Geometries. Candidates use spatial visualization and geometric modeling to explore and analyze geometric shapes, structures, and their properties.
- Knowledge of Calculus. Candidates demonstrate a conceptual understanding of limit, continuity, differentiation, and integration and a thorough background in techniques and application of the calculus.
- Knowledge of Discrete Mathematics. Candidates apply the fundamental ideas of discrete mathematics in the formulation and solution of problems.
- Knowledge of Data Analysis, Statistics, and Probability. Candidates demonstrate an understanding of concepts and practices related to data analysis, statistics, and probability.
- Knowledge of Measurement. Candidates apply and use measurement concepts and tools.
- Field-Based Experiences: Engage in a sequence of planned opportunities prior to student teaching that includes observing

and participating secondary mathematics classrooms under the supervision of experienced and highly qualified teachers.

- Field-Based Experiences: Experience full-time student teaching secondary-level mathematics that is supervised by an experienced and highly qualified teacher and a university or college supervisor with elementary mathematics teaching experience.
- Field-Based Experiences: Demonstrate the ability to increase students' knowledge of mathematics.

## Degree Requirements (48 Hours)

The M.A.T. degree requires 30 approved semester hours of graduate-level course work in mathematics and education (exclusive of directed teaching), no less than 6 and no more than 15 of which may be in education, and at least 15 of which must be in mathematics or statistics. The individual student's program is planned according to that student's background and goals. At least half of the student's course work must be numbered 700 or higher.

Each student's program of study must include at least one course in geometry (chosen from MATH 531 or MATH 736I), algebraic structures (MATH 701I), real analysis (MATH 703I), statistics (STAT 509 or STAT 515-STAT 516), and number theory (MATH 780I). If equivalent courses have already been taken, then appropriate substitutions will be made. Unless previously taken, the student must also take upper division courses in linear algebra (MATH 526 or MATH 544) and discrete mathematics (MATH 574). Normally these two courses are taken prior to full admission to the program.

Course work in education must include human growth and development (EDPY 705 or EDPY 707), a curriculum course (EDSE 770), two Read to Succeed courses (EDRD 731 and EDRD 732), and methods of teaching (EDSE 764). The student must also complete an 18-semester-hour program of methods and internship in mathematics (EDSE 550, EDSE 584, EDSE 778A and EDSE 778B). Students must apply for admission to the professional program and internship through the College of Education's Office of Student Affairs early in the fall or spring semester prior to the semester of Internship B.

Upon admission to the M.A.T. program, the student is assigned a faculty advisor in mathematics to assist in the development of the mathematics portion of the program. Approval of the candidate's program will be granted by a committee of three faculty members, consisting of the faculty advisor in mathematics, the faculty advisor in education, and a faculty member from either mathematics or education. Each student must maintain a B average on all graduate-level course work in mathematics and a B average on all graduate-level course work in education. Candidates for the M.A.T. degree are required to pass a written Comprehensive Examination covering their program of study and emphasizing the theoretical underpinnings of calculus, the basic forms of mathematical reasoning, argumentation, and proof, a repertoire of fundamental examples and counter-examples, problem solving, and insight into how these can inform the teaching of secondary mathematics. Geometric and statistical reasoning will frequently be called upon; students will generally be free to draw on their knowledge of any of analysis, algebra, discrete mathematics, or number theory as they see fit to demonstrate forms of mathematical argumentation and proof.

# Music Education, M.A.T. (P-12 Certification)

## Learning Outcomes

### Music Competencies

The profession of school music teacher now encompasses a wide range of traditional, emerging, and experimental purposes, approaches, content, and methods. Each institution makes choices about what, among many possibilities, it will offer prospective specialist music teachers. Institutions may offer a comprehensive curriculum involving two or more specializations and/or focus on one or more particular specializations. The following standards provide a framework for developing and evaluating a wide variety of teacher preparation program goals and achievements.

1. **Conducting and Musical Leadership. (Advanced Conducting)** The prospective music teacher must be a competent conductor, able to create accurate and musically expressive performances with various types of performing groups and in general classroom situations. Instruction in conducting includes score reading and the integration of analysis, style, performance practices, instrumentation, and conducting techniques. Laboratory experiences that give the student opportunities to apply rehearsal techniques and procedures are essential. Prospective teachers in programs with less focus on the preparation of ensemble conductors must acquire conducting and musical leadership skills sufficient to teach effectively in their area(s) of specialization.
2. **Arranging. (Music Theory)** The prospective music teacher must be able to arrange and adapt music from a variety of sources to meet the needs and ability levels of individuals, school performing groups, and in classroom situations.
3. **Functional Performance. (Secondary Instruments; Piano)** In addition to the skills required for all musicians, functional performance abilities in keyboard and the voice are essential. Functional performance abilities in instruments appropriate to the student's teaching specialization are also essential.
4. **Analysis/History/Literature. (Music History)** The prospective music teacher should be able to apply analytical and historical knowledge to curriculum development, lesson planning, and daily classroom and performance activities. Teachers should be prepared to relate their understanding of music with respect to styles, literature, multiple cultural sources, and historical development, both in general and as related to their area(s) of specialization.

### Specialization Competencies

Institutions and other educational authorities make decisions about the extent to which music teachers will be prepared in one or more specializations. The following competencies apply singly or in combination consistent with the specialization objectives of each teacher preparation program in music.

1. **Vocal/Choral Music.** Listed below are essential competencies and experiences for the vocal/choral teaching specialization:
  - a. Vocal and pedagogical skill sufficient to teach effective use of the voice. (Vocal Pedagogy)
  - b. Knowledge of content, methodologies, philosophies, materials, technologies, and curriculum development for vocal/choral music. (Choral methods/materials; Specialized Elementary Methods)

- c. Experiences in solo vocal performance, as well as in both large and small choral ensembles. (Chorus)
  - d. Performance ability sufficient to use at least one instrument as a teaching tool and to provide, transpose, and improvise accompaniments. (Assessed via entrance audition)
  - e. Laboratory experience in teaching beginning vocal techniques individually, in small groups, and in larger classes. (Choral Methods and Materials)
2. **Instrumental Music.** Listed below are essential competencies and experiences for the instrumental music teaching specialization:
  - a. Knowledge of and performance ability on wind, string, and percussion instruments sufficient to teach beginning students effectively in groups. (Secondary instruments)
  - b. Knowledge of content, methodologies, philosophies, materials, technologies, and curriculum development for instrumental music. (Methods of String Instruction; String Pedagogy; Winds; Administration of Music Programs)
  - c. Experiences in solo instrumental performance, as well as in both small and large instrumental ensembles. (Orchestra; Band; solo experiences will have been addressed during the undergraduate curriculum of the previous degree).
  - d. Laboratory experience in teaching beginning instrumental students individually, in small groups, and in larger classes. (Practica associated with courses listed in 2b).

### Teaching Competencies

The musician-teacher must be able to lead students to competency, apply music knowledge and skills in teaching situations, and integrate music instruction into the process of P–12 education. Essential competencies are:

1. Ability to teach music at various levels to different age groups and in a variety of classroom and ensemble settings in ways that develop knowledge of how music works syntactically as a communication medium and developmentally as an agent of civilization. This set of abilities includes effective classroom and rehearsal management. (MUED 731)
2. An understanding of child growth and development and an understanding of principles of learning as they relate to music. (EDPY 705 Human Growth and Development)
3. The ability to assess aptitudes, experiential backgrounds, orientations of individuals and groups of students, and the nature of subject matter, and to plan educational programs to meet assessed needs. (EDRM 723 Classroom Assessment)
4. Knowledge of current methods, materials, and repertoires available in various fields and levels of music education appropriate to the teaching specialization. (Instrumental Development and Related Materials, Choral Methods and Related Materials)
5. The ability to accept, amend, or reject methods and materials based on personal assessment of specific teaching situations. (Instrumental Development and Related Materials, Choral Methods and Related Materials)
6. An understanding of evaluative techniques and ability to apply them in assessing both the musical progress of students and the objectives and procedures of the curriculum. (Instrumental Development and Related Materials, Choral Methods and Related Materials)

## Degree Requirements (45 Hours)

Three curriculum strands will be offered to meet the teaching certification standards and educational needs of the students who will enroll in the M.A.T. (Music).

Those three strands are:

- Vocal-Choral
- Instrumental – Strings
- Instrumental – Winds/Percussion

The three strands of the proposed curriculum will be unified by the following core courses. Students may be required to fulfill undergraduate prerequisites appropriate for their areas of concentration. None of the courses will be shared with MEd students.

### Required Core Courses (30 Hours)

Required for Each M.A.T. Strand.

Course	Title	Credits
EDPY 705	Human Growth and Development	3
Select one of the following:		3
EDRD 500	Content Area Literacy PK-12	
EDEX 581	Teaching Reading in the Content Area to Adolescents with Reading Disabilities	
EDRD 732	Teaching Reading and Writing in the Content Areas	
EDRM 723	Classroom Assessment Methods	3
Select advisor-approved 500 or 700 level course in Music History		3
Select advisor-approved 500 or 700 level course in Music Theory		3
MUED 731	Teaching Internship in Music	12
MUED 732	Music Teaching Internship Seminar	3
<b>Total Credit Hours</b>		<b>30</b>

### M.A.T. Strands (15 hours)

Following are the strand-specific courses required to meet the teacher certification standards and educational needs of students in each M.A.T. strand. Choose one of the following strands.

#### Vocal/Choral Strand Courses

Course	Title	Credits
MUED 565	Specialized Elementary Music Methods	2
MUED 756	Choral Development and Related Materials	3
MUED 554	Workshop in Music Education (either choral or elementary)	1-3
MUSC 734	Ensemble	1
MUSC 577	Vocal Pedagogy	2
Select advisor-approved MUSC or MUED electives selected from diction, choral literature, conducting, independent study, applied voice, applied piano, or ensemble		3
<b>Total Credit Hours</b>		<b>12-14</b>

Note: Students will need to satisfy prerequisite skills in piano, conducting, and elementary and choral materials and methods.

#### Instrumental (Strings) Strand Courses

Course	Title	Credits
MUED 533	Methods for String Instruction I	2
MUED 533P	Practicum in Methods of String Instruction I	1

MUED 534	Methods of String Instruction II	2
MUED 534P	Practicum in Methods of String Instruction II	1
MUSC 734	Ensemble	1
MUSC 733	Advanced Conducting	3
MUED 753	Instrumental Development and Related Materials	3
MUSC 501	Secondary Applied Music	1-2

**Total Credit Hours 14-15**

Note: Students will need to satisfy prerequisite skills in secondary string instruments, wind pedagogy, conducting, and piano.

#### Instrumental (Winds/Percussion) Strand Courses

Course	Title	Credits
MUED 568	Organization and Administration of Music Programs	2
MUED 551	The Middle School Band	2
MUED 552	The High School Band	2
MUSC 734	Ensemble	1
MUSC 733	Advanced Conducting	3
Select elective course from MUED or College of Education		3
MUED 700	Independent Study in Music Education	1-3

**Total Credit Hours 14-16**

Note: Students will need to satisfy prerequisite skills in wind and percussion pedagogy, secondary instruments, conducting, and piano.

## Physical Education, M.A.T. (P-12 Certification)

The M.A.T. degree in physical education (K-12) is limited to those candidates seeking teacher certification. Candidates who wish to pursue this degree and have undergraduate degrees in fields other than physical education, exercise science, or kinesiology will be required to complete undergraduate prerequisite courses.

The M.A.T. degree in physical education requires a minimum of 45 hours of graduate course work. In addition, candidates must take undergraduate course work in order to fulfill teacher certification requirements. The graduate program is normally two years. Graduation from the MAT. program requires successful completion of all course work, including internship/directed teaching and a comprehensive examination.

## Learning Outcomes

- **Content Knowledge.** Physical education teachers understand physical education content and disciplinary concepts related to the development of a physically educated person.
- **Growth and Development.** Physical education teachers understand how individuals learn and develop and can provide opportunities that support their physical, cognitive, social, and emotional development.
- **Diverse Students.** Physical education teachers understand how individuals differ in their approaches to learning, and create appropriate instruction adapted to these differences.
- **Management and Motivation.** Physical education teachers use an understanding of individual and group motivation and behavior to create a safe learning environment that encourages positive social interaction, active engagement in learning, and self motivation.



- **Communication.** Physical education teachers use knowledge of effective verbal, nonverbal, and media communication techniques to enhance learning and engagement in physical activity settings.
- **Planning and Instruction.** Physical education teachers plan and implement a variety of developmentally appropriate instructional strategies to develop physically educated individuals, based on state and national (NASPE K-12) standards.
- **Student Assessment.** Physical education teachers understand and use assessment to foster physical, cognitive, social, and emotional development of students in physical activity.
- **Reflection.** Physical education teachers are reflective practitioners who evaluate the effects of their actions on others (e.g., students, parents/guardians, fellow professionals), and seek opportunities to grow professionally.
- **Technology.** Physical education teachers use information technology to enhance learning and to enhance personal and professional productivity.
- **Collaboration.** Physical education teachers foster relationships with colleagues, parents/guardians, and community agencies to support students' growth and well being.

## Admissions Criteria

Regulations and requirements for admission to graduate study and graduate degree candidacy for Initial Teacher Certification Programs correspond to those of The Graduate School. In addition to those admissions criteria for all M.A.T. programs, candidates for the M.A.T. Physical Education Program must:

- Submit a qualifying score on either the Graduate Record Exam (target is at least a 400 verbal and 400 quantitative) or the Miller Analogies Test (target is at least 385)
- At least two professional letters of reference
- A one to two page letter of intent where you outline your career goals

## Degree Requirements (45 Hours)

Graduate course requirements include the following:

### Physical Education Courses (39 Hours)

Course	Title	Credits
PEDU 510	Teaching Health Related Physical Fitness	3
PEDU 515	Physical Education for Inclusion	3
PEDU 520	Observational Analysis of Sports Techniques and Tactics	3
EDRD 500	Content Area Literacy PK-12	3
PEDU 710	Measurement and Research in Physical Education	3
PEDU 722	Curriculum Development in Physical Education	3
PEDU 729	Study of the Teaching of Physical Education	3
PEDU 730	Psychosocial Aspects of Athletic Performance and Injury Rehabilitation	3
PEDU 732	Analysis of Instructional Behavior in Physical Activity Programs	3
PEDU 778A	Directed Student Teaching in Physical Education I	6
PEDU 778B	Directed Student Teaching in Physical Education II	6
<b>Total Credit Hours</b>		<b>39</b>

### Educational Psychology Courses (3 Hours)

- As approved by the candidate's program of study.

### Foundations of Education Course (3 Hours)

- As approved by the candidate's program of study

## Sciences, M.A.T. (Secondary Education)

The MAT in Science is offered jointly by the College of Education and the College of Arts and Sciences. This degree includes options in biology, chemistry, earth science, natural sciences, and physics. The MAT in Science is designed specifically for candidates who wish to become certified in a secondary education area of science (i.e., biology, chemistry, physics, or science).

## Learning Outcomes

- **Content.** Teachers of science understand and can articulate the knowledge and practices of contemporary science. They can interrelate and interpret important concepts, ideas, and applications in their fields of licensure; and can conduct scientific investigations. To show that they are prepared in content, teachers of science must demonstrate that they:
  - a. understand and can successfully convey to students the major concepts, principles, theories, laws, and interrelationships of their fields of licensure and supporting fields as recommended by the National Science Teachers Association;
  - b. understand and can successfully convey to students the unifying concepts of science delineated by the National Science Education Standards;
  - c. understand and can successfully convey to students important personal and technological applications of science in their fields of licensure;
  - d. understand research and can successfully design, conduct, report and
  - e. evaluate investigations in science; and understand and can successfully use mathematics to process and report data, and solve problems, in their field(s) of licensure.
- **Nature of Science.** Teachers of science engage students effectively in studies of the history, philosophy, and practice of science. They enable students to distinguish science from nonscience, understand the evolution and practice of science as a human endeavor, and critically analyze assertions made in the name of science. To show they are prepared to teach the nature of science, teachers of science must demonstrate that they:
  - a. understand the historical and cultural development of science and the evolution of knowledge in their discipline;
  - b. understand the philosophical tenets, assumptions, goals, and values that distinguish science from technology and from other ways of knowing the world; and
  - c. engage students successfully in studies of the nature of science including, when possible, the critical analysis of false or doubtful assertions made in the name of science.
- **Inquiry.** Teachers of science engage students both in studies of various methods of scientific inquiry and in active learning through scientific inquiry. They encourage students, individually and collaboratively, to observe, ask questions, design inquiries, and collect and interpret data in order to develop concepts and relationships

from empirical experiences. To show that they are prepared to teach through inquiry, teachers of science must demonstrate that they:

- a. understand the processes, tenets, and assumptions of multiple methods of inquiry leading to scientific knowledge; and
  - b. engage students successfully in developmentally appropriate inquiries that require them to develop concepts and relationships from their observations, data, and inferences in a scientific manner.
- **Issues.** Teachers of science recognize that informed citizens must be prepared to make decisions and take action on contemporary science- and technology-related issues of interest to the general society. They require students to conduct inquiries into the factual basis of such issues and to assess possible actions and outcomes based upon their goals and values. To show that they are prepared to engage students in studies of issues related to science, teachers of science must demonstrate that they:
    - a. understand socially important issues related to science and technology in their field of licensure, as well as processes used to analyze and make decisions on such issues; and
    - b. engage students successfully in the analysis of problems, including considerations of risks, costs, and benefits of alternative solutions; relating these to the knowledge, goals and values of the students.
  - **General Skills of Teaching.** Teachers of science create a community of diverse learners who construct meaning from their science experiences and possess a disposition for further exploration and learning. They use, and can justify, a variety of classroom arrangements, groupings, actions, strategies, and methodologies. To show that they are prepared to create a community of diverse learners, teachers of science must demonstrate that they:
    - a. vary their teaching actions, strategies, and methods to promote the development of multiple student skills and levels of understanding;
    - b. successfully promote the learning of science by students with different abilities, needs, interests, and backgrounds;
    - c. successfully organize and engage students in collaborative learning using different student group learning strategies;
    - d. successfully use technological tools, including but not limited to computer technology, to access resources, collect and process data, and facilitate the learning of science;
    - e. understand and build effectively upon the prior beliefs, knowledge, experiences, and interests of students; and
    - f. create and maintain a psychologically and socially safe and supportive learning environment. (optional to address this standard in the NSTA report)
  - **Curriculum.** Teachers of science plan and implement an active, coherent, and effective curriculum that is consistent with the goals and recommendations of the National Science Education Standards. They begin with the end in mind and effectively incorporate contemporary practices and resources into their planning and teaching. To show that they are prepared to plan and implement an effective science curriculum, teachers of science must demonstrate that they:
    - a. understand the curricular recommendations of the National Science Education Standards, and can identify, access, and/or create resources and activities for science education that are consistent with the standards; and
    - b. plan and implement internally consistent units of study that address the diverse goals of the National Science Education Standards and the needs and abilities of students.
  - **Science in the Community.** Teachers of science relate their discipline to their local and regional communities, involving stakeholders and using the individual, institutional, and natural resources of the community in their teaching. They actively engage students in science-related studies or activities related to locally important issues. To show that they are prepared to relate science to the community, teachers of science must demonstrate that they:
    - a. identify ways to relate science to the community, involve stakeholders, and use community resources to promote the learning of science; and
    - b. involve students successfully in activities that relate science to resources and stakeholders in the community or to the resolution of issues important to the community.
  - **Assessment.** Teachers of science construct and use effective assessment strategies to determine the backgrounds and achievements of learners and facilitate their intellectual, social, and personal development. They assess students fairly and equitably, and require that students engage in ongoing self-assessment. To show that they are prepared to use assessment effectively, teachers of science must demonstrate that they:
    - a. use multiple assessment tools and strategies to achieve important goals for instruction that are aligned with methods of instruction and the needs of students;
    - b. use the results of multiple assessments to guide and modify instruction, the classroom environment, or the assessment process; and
    - c. use the results of assessments as vehicles for students to analyze their own learning, engaging students in reflective self-analysis of their own work.
  - **Safety and Welfare.** Teachers of science organize safe and effective learning environments that promote the success of students and the welfare of all living things. They require and promote knowledge and respect for safety, and oversee the welfare of all living things used in the classroom or found in the field. To show that they are prepared, teachers of science must demonstrate that they:
    - a. understand the legal and ethical responsibilities of science teachers for the welfare of their students, the proper treatment of animals, and the maintenance and disposal of materials;
    - b. know and practice safe and proper techniques for the preparation, storage, dispensing, supervision, and disposal of all materials used in science instruction;
    - c. know and follow emergency procedures, maintain safety equipment, and ensure safety procedures appropriate for the activities and the abilities of students; and
    - d. treat all living organisms used in the classroom or found in the field in a safe, humane, and ethical manner and respect legal restrictions on their collection, keeping, and use.
  - **Professional Growth.** Teachers of science strive continuously to grow and change, personally and professionally, to meet the diverse needs of their students, school, community, and profession. They have a desire and disposition for growth and betterment. To show their disposition for growth, teachers of science must demonstrate that they:
    - a. engage actively and continuously in opportunities for professional learning and leadership that reach beyond minimum job requirements;
    - b. reflect constantly upon their teaching and identify ways and means through which they may grow professionally;

- c. use information from students, supervisors, colleagues and others to improve their teaching and facilitate their professional growth; and
- d. interact effectively with colleagues, parents, and students; mentor new colleagues; and foster positive relationships with the community.

## Degree Requirements (45 Hours)

Specific course requirements vary by area, but all must include a minimum of the following:

### Content Area Courses (15-21 Hours)

#### Professional Education Courses (9 Hours)

Course	Title	Credits
EDPY 705 or EDPY 707	Human Growth and Development Growth and Development: Middle Childhood and Adolescence	3

#### Reading and Literacy Courses

EDRD 731	Assessment and the Foundations of Reading/ Writing	3
EDRD 732	Teaching Reading and Writing in the Content Areas	3

**Total Credit Hours** 9

#### Methods Courses (6 Hours)

At least 6 hours of graduate methods courses, one of which must be a technology course.

#### Internship and Seminar (15 Hours)

##### Note:

Each candidate must successfully complete a comprehensive examination as determined by the appropriate M.A.T. degree committee.

## Secondary Education, M.T.

The Master of Teaching (M.T.) in Secondary Education is designed to prepare graduates to teach in the secondary education (grades 9-12) areas of English, mathematics, science, and social studies. The degree includes a minimum of 33 credit hours for those entering through the 5th-year route or a minimum of 36 credit hours for those entering through the career changer route.

All M.T. candidates must meet the program admission criteria, professional program and internship admission criteria, and certification criteria delineated in this bulletin for initial teacher certification programs. Graduation from the M.T. program requires successful completion of all coursework including internship and directed teaching and a comprehensive assessment. Placement for Internship II must be in a high school. Placement for Internship I and II are typically made in the Columbia metropolitan area.

## Learning Outcomes

### English Emphasis

Structure of the Basic Program: Candidates follow a specific curriculum and are expected to meet appropriate performance assessments for preservice English language arts teachers.

**Attitudes for English Language Arts:** Through modeling, advisement, instruction, field experiences, assessment of performance, and involvement in professional organizations, candidates adopt and

strengthen professional attitudes needed by English language arts teachers.

- Candidates create an inclusive and supportive learning environment in which all students can engage in learning.
- Candidates use ELA to help their students become familiar with their own and others' cultures.
- Candidates demonstrate reflective practice, involvement in professional organizations, and collaboration with both faculty and other candidates.
- Candidates use practices designed to assist students in developing habits of critical thinking and judgment.
- Candidates make meaningful connections between the ELA curriculum and developments in culture, society, and education.
- Candidates engage their students in activities that demonstrate the role of arts and humanities in learning

**Knowledge of English Language Arts:** Candidates are knowledgeable about language; literature; oral, visual, and written literacy; print and nonprint media; and technology.

- Candidates demonstrate knowledge of, and skills in the use of, the English language.
- Candidates demonstrate knowledge of the practices of oral, visual, and written literacy.
- Candidates demonstrate their knowledge of reading processes.
- Candidates demonstrate knowledge of different composing processes.
- Candidates demonstrate knowledge of, and uses for, an extensive range of literature.
- Candidates demonstrate knowledge of the range and influence of print and nonprint media and technology in contemporary culture.
- Candidates demonstrate knowledge of research theory and findings in English language arts.

**Pedagogy for English Language Arts:** Candidates acquire and demonstrate the dispositions and skills needed to integrate knowledge of English language arts, students, and teaching.

- Candidates examine and select resources for instruction such as textbooks, other print materials, videos, films, records, and software, appropriate for supporting the teaching of English language arts.
- Candidates align curriculum goals and teaching strategies with the organization of classroom environments and learning experiences to promote whole-class, small-group, and individual work.
- Candidates integrate interdisciplinary teaching strategies and materials into the teaching and learning process for students.
- Candidates create and sustain learning environments that promote respect for, and support of, individual differences of ethnicity, race, language, culture, gender, and ability.
- Candidates engage students often in meaningful discussions for the purposes of interpreting and evaluating ideas presented through oral, written, and/or visual forms.
- Candidates engage students in critical analysis of different media and communications technologies.
- Candidates engage students in learning experiences that consistently emphasize varied uses and purposes for language in communication.
- Candidates engage students in making meaning of texts through personal response.

- Candidates demonstrate that their students can select appropriate reading strategies that permit access to, and understanding of, a wide range of print and nonprint texts.
- Candidates integrate assessment consistently into instruction by using a variety of formal and informal assessment activities and instruments to evaluate processes and products, and creating regular opportunities to use a variety of ways to interpret and report assessment methods and results to students, parents, administrators, and other audiences.

## Math Emphasis

- Knowledge of Problem Solving. Candidates know, understand and apply the process of mathematical problem solving.
- Knowledge of Reasoning and Proof. Candidates reason, construct, and evaluate mathematical arguments and develop an appreciation for mathematical rigor and inquiry.
- Knowledge of Mathematical Communication. Candidates communicate their mathematical thinking orally and in writing to peers, faculty and others.
- Knowledge of Mathematical Connections. Candidates recognize, use, and make connections between and among mathematical ideas and in contexts outside mathematics to build mathematical understanding.
- Knowledge of Mathematical Representation. Candidates use varied representations of mathematical ideas to support and deepen students' mathematical understanding.
- Knowledge of Technology. Candidates embrace technology as an essential tool for teaching and learning mathematics.
- Dispositions. Candidates support a positive disposition toward mathematical processes and mathematical learning.
- Knowledge of Mathematics Pedagogy. Candidates possess a deep understanding of how students learn mathematics and of the pedagogical knowledge specific to mathematics teaching and learning
- Knowledge of Number and Operations. Candidates demonstrate computational proficiency, including a conceptual understanding of numbers, ways of representing number, relationships among number and number systems, and the meaning of operations.
- Knowledge of Different Perspectives on Algebra. Candidates emphasize relationships among quantities including functions, ways of representing mathematical relationships, and the analysis of change.
- Knowledge of Geometries. Candidates use spatial visualization and geometric modeling to explore and analyze geometric shapes, structures, and their properties.
- Knowledge of Calculus. Candidates demonstrate a conceptual understanding of limit, continuity, differentiation, and integration and a thorough background in techniques and application of the calculus.
- Knowledge of Discrete Mathematics. Candidates apply the fundamental ideas of discrete mathematics in the formulation and solution of problems.
- Knowledge of Data Analysis, Statistics, and Probability. Candidates demonstrate an understanding of concepts and practices related to data analysis, statistics, and probability.
- Knowledge of Measurement. Candidates apply and use measurement concepts and tools.
- Field-Based Experiences: Engage in a sequence of planned opportunities prior to student teaching that includes observing

and participating secondary mathematics classrooms under the supervision of experienced and highly qualified teachers.

- Field-Based Experiences: Experience full-time student teaching secondary-level mathematics that is supervised by an experienced and highly qualified teacher and a university or college supervisor with elementary mathematics teaching experience.
- Field-Based Experiences: Demonstrate the ability to increase students' knowledge of mathematics.

## Science Emphasis

- Content. Teachers of science understand and can articulate the knowledge and practices of contemporary science. They can interrelate and interpret important concepts, ideas, and applications in their fields of licensure; and can conduct scientific investigations. To show that they are prepared in content, teachers of science must demonstrate that they:
  - a. understand and can successfully convey to students the major concepts, principles, theories, laws, and interrelationships of their fields of licensure and supporting fields as recommended by the National Science Teachers Association;
  - b. understand and can successfully convey to students the unifying concepts of science delineated by the National Science Education Standards;
  - c. understand and can successfully convey to students important personal and technological applications of science in their fields of licensure;
  - d. understand research and can successfully design, conduct, report and
  - e. evaluate investigations in science; and understand and can successfully use mathematics to process and report data, and solve problems, in their field(s) of licensure.
- Nature of Science. Teachers of science engage students effectively in studies of the history, philosophy, and practice of science. They enable students to distinguish science from nonscience, understand the evolution and practice of science as a human endeavor, and critically analyze assertions made in the name of science. To show they are prepared to teach the nature of science, teachers of science must demonstrate that they:
  - a. understand the historical and cultural development of science and the evolution of knowledge in their discipline;
  - b. understand the philosophical tenets, assumptions, goals, and values that distinguish science from technology and from other ways of knowing the world; and
  - c. engage students successfully in studies of the nature of science including, when possible, the critical analysis of false or doubtful assertions made in the name of science.
- Inquiry. Teachers of science engage students both in studies of various methods of scientific inquiry and in active learning through scientific inquiry. They encourage students, individually and collaboratively, to observe, ask questions, design inquiries, and collect and interpret data in order to develop concepts and relationships from empirical experiences. To show that they are prepared to teach through inquiry, teachers of science must demonstrate that they:
  - a. understand the processes, tenets, and assumptions of multiple methods of inquiry leading to scientific knowledge; and
  - b. engage students successfully in developmentally appropriate inquiries that require them to develop concepts and relationships from their observations, data, and inferences in a scientific manner.

- Issues. Teachers of science recognize that informed citizens must be prepared to make decisions and take action on contemporary science- and technology-related issues of interest to the general society. They require students to conduct inquiries into the factual basis of such issues and to assess possible actions and outcomes based upon their goals and values. To show that they are prepared to engage students in studies of issues related to science, teachers of science must demonstrate that they:
  - a. understand socially important issues related to science and technology in their field of licensure, as well as processes used to analyze and make decisions on such issues; and
  - b. engage students successfully in the analysis of problems, including considerations of risks, costs, and benefits of alternative solutions; relating these to the knowledge, goals and values of the students.
- General Skills of Teaching. Teachers of science create a community of diverse learners who construct meaning from their science experiences and possess a disposition for further exploration and learning. They use, and can justify, a variety of classroom arrangements, groupings, actions, strategies, and methodologies. To show that they are prepared to create a community of diverse learners, teachers of science must demonstrate that they:
  - a. vary their teaching actions, strategies, and methods to promote the development of multiple student skills and levels of understanding;
  - b. successfully promote the learning of science by students with different abilities, needs, interests, and backgrounds;
  - c. successfully organize and engage students in collaborative learning using different student group learning strategies;
  - d. successfully use technological tools, including but not limited to computer technology, to access resources, collect and process data, and facilitate the learning of science;
  - e. understand and build effectively upon the prior beliefs, knowledge, experiences, and interests of students; and
  - f. create and maintain a psychologically and socially safe and supportive learning environment. (optional to address this standard in the NSTA report)
- Curriculum. Teachers of science plan and implement an active, coherent, and effective curriculum that is consistent with the goals and recommendations of the National Science Education Standards. They begin with the end in mind and effectively incorporate contemporary practices and resources into their planning and teaching. To show that they are prepared to plan and implement an effective science curriculum, teachers of science must demonstrate that they:
  - a. understand the curricular recommendations of the National Science Education Standards, and can identify, access, and/or create resources and activities for science education that are consistent with the standards; and
  - b. plan and implement internally consistent units of study that address the diverse goals of the National Science Education Standards and the needs and abilities of students.
- Science in the Community. Teachers of science relate their discipline to their local and regional communities, involving stakeholders and using the individual, institutional, and natural resources of the community in their teaching. They actively engage students in science-related studies or activities related to locally important issues. To show that they are prepared to relate science to the community, teachers of science must demonstrate that they:
  - a. identify ways to relate science to the community, involve stakeholders, and use community resources to promote the learning of science; and
  - b. involve students successfully in activities that relate science to resources and stakeholders in the community or to the resolution of issues important to the community.
- Assessment. Teachers of science construct and use effective assessment strategies to determine the backgrounds and achievements of learners and facilitate their intellectual, social, and personal development. They assess students fairly and equitably, and require that students engage in ongoing self-assessment. To show that they are prepared to use assessment effectively, teachers of science must demonstrate that they:
  - a. use multiple assessment tools and strategies to achieve important goals for instruction that are aligned with methods of instruction and the needs of students;
  - b. use the results of multiple assessments to guide and modify instruction, the classroom environment, or the assessment process; and
  - c. use the results of assessments as vehicles for students to analyze their own learning, engaging students in reflective self-analysis of their own work.
- Safety and Welfare. Teachers of science organize safe and effective learning environments that promote the success of students and the welfare of all living things. They require and promote knowledge and respect for safety, and oversee the welfare of all living things used in the classroom or found in the field. To show that they are prepared, teachers of science must demonstrate that they:
  - a. understand the legal and ethical responsibilities of science teachers for the welfare of their students, the proper treatment of animals, and the maintenance and disposal of materials;
  - b. know and practice safe and proper techniques for the preparation, storage, dispensing, supervision, and disposal of all materials used in science instruction;
  - c. know and follow emergency procedures, maintain safety equipment, and ensure safety procedures appropriate for the activities and the abilities of students; and
  - d. treat all living organisms used in the classroom or found in the field in a safe, humane, and ethical manner and respect legal restrictions on their collection, keeping, and use.
- Professional Growth. Teachers of science strive continuously to grow and change, personally and professionally, to meet the diverse needs of their students, school, community, and profession. They have a desire and disposition for growth and betterment. To show their disposition for growth, teachers of science must demonstrate that they:
  - a. engage actively and continuously in opportunities for professional learning and leadership that reach beyond minimum job requirements;
  - b. reflect constantly upon their teaching and identify ways and means through which they may grow professionally;
  - c. use information from students, supervisors, colleagues and others to improve their teaching and facilitate their professional growth; and
  - d. interact effectively with colleagues, parents, and students; mentor new colleagues; and foster positive relationships with the community.

## Social Studies Emphasis

- **Culture and Cultural Diversity.** Candidates in social studies should possess the knowledge, capabilities, and dispositions to organize and provide instruction at the appropriate school level for the study of culture and cultural diversity.
- **Time, Continuity, and Change.** Candidates in social studies should possess the knowledge, capabilities, and dispositions to organize and provide instruction at the appropriate school level for the study of time, continuity, and change.
- **People, Places, and Environment.** Candidates in social studies should possess the knowledge, capabilities, and dispositions to organize and provide instruction at the appropriate school level for the study of people, places, and environment.
- **Individual Development and Identity.** Candidates in social studies should possess the knowledge, capabilities, and dispositions to organize and provide instruction at the appropriate school level for the study of individual development and identity.
- **Individuals, Groups and Institutions.** Candidates in social studies should possess the knowledge, capabilities, and dispositions to organize and provide instruction at the appropriate school level for the study of individuals, groups, and institutions.
- **Power, Authority, and Governance.** Candidates in social studies should possess the knowledge, capabilities, and dispositions to organize and provide instruction at the appropriate school level for the study of power, authority and governance.
- **Production, Distribution, and Consumption.** Candidates in social studies should possess the knowledge, capabilities, and disposition to organize and provide instruction at the appropriate school level for the study of production, distribution, and consumption of goods and services.
- **Science, Technology and Society.** Candidates in social studies should possess the knowledge, capabilities, and dispositions to organize and provide instruction at the appropriate school level for the study of science, technology and society.
- **Global Connections.** Candidates in social studies should possess the knowledge, capabilities, and dispositions to organize and provide instruction at the appropriate school level for the study of global connections and interdependence.
- **Civic Ideals and Practices.** Candidates in social studies should possess the knowledge, capabilities, and dispositions to organize and provide instruction at the appropriate school level for the study of civic ideals and practices.

## Social Science Disciplines

- **History.** Candidates who are to be licensed to teach history at all school levels should possess the knowledge, capabilities, and dispositions to organize and provide instruction at the appropriate school level for the study of history.
- **Geography.** Candidates who are to be licensed to teach geography at all school levels should possess the knowledge, capabilities, and dispositions to organize and provide instruction at the appropriate school level for the study of geography.
- **Civics and Government.** Candidates who are to be licensed to teach civics and/or government at all school levels should possess the knowledge, capabilities, and dispositions to organize and provide instruction at the appropriate school level for the study of civics and government.
- **Economics.** Candidates who are to be licensed to teach economics at all school levels should possess the knowledge, capabilities, and

dispositions to organize and provide instruction at the appropriate school level for the study of economics.

- **Psychology.** Candidates who are to be licensed to teach psychology at all school levels should possess the knowledge, capabilities, and dispositions to organize and provide instruction at the appropriate school level for the study of psychology

## Programmatic Standards

- **Course or Courses on Teaching Social Studies.** Institutions preparing social studies teachers should provide and require prospective social studies teachers to complete a course or courses dealing specifically with the nature of the social studies and with ideas, strategies, and techniques for teaching social studies at the appropriate licensure level.
- **Qualified Social Studies Faculty.** Institutions preparing social studies teachers should provide faculty in the social studies and social studies education components of the program who are recognized as:
  - a. exemplary teachers,
  - b. scholars in the fields of social studies and social studies education, and
  - c. informed about middle and secondary school classrooms and teaching.

## There are two ways to enter and complete the M.T. degree:

1. **Fifth-year Route-** The 5th-year program, designed for candidates who attend The University of South Carolina as undergraduates, earn a bachelor's degree in an appropriate content major and complete a 12-credit hour education core of courses (EDFI 300, EDPY 401, EDSE 500, EDSE 502). Students pursuing the M.T. degree in Secondary English take EDSE 547 instead of EDSE 502.
2. **Career Changer Route-** The career change route is for those who have decided to become a teacher after completing or near the end of their bachelor's degree program in an appropriate content major. Students entering with this path will not have had the 12-credit hour education core in their undergraduate program.

## Prerequisite Content Area Courses

Most applicants who have completed an undergraduate degree in the content area they want to teach (English, science, social studies, or math) will have met the prerequisite content area courses. Prerequisites can be found on the College of Education website ([https://www.sc.edu/study/colleges\\_schools/education/](https://www.sc.edu/study/colleges_schools/education/)). A program advisor will review previous coursework completed to determine if any additional courses are necessary.

## Degree Requirements (33-36 Hours)

Students entering program through the 5<sup>th</sup>-year route with the specified education cognate (12 hours), complete a minimum of 33 hours. Other students entering as career changers without the specified undergraduate education cognate complete a minimum of 36 hours.

## Educational Psychology (3 Hours)

Required for Career Changer route students

Course	Title	Credits
EDPY 705 or EDPY 707	Human Growth and Development Growth and Development: Middle Childhood and Adolescence	3
<b>Total Credit Hours</b>		<b>3</b>

### Reading and Literacy Requirements (6 Hours)

Course	Title	Credits
Students in Mathematics, Science, and Social Studies must complete:		
EDRD 731	Assessment and the Foundations of Reading/Writing	3
EDRD 732	Teaching Reading and Writing in the Content Areas	3
Students in English must complete:		
EDRD 600	Foundations of Reading Instruction	3
EDRD 651	Introduction to Teaching Media Literacy	3

### Professional Education and Teaching Methods (9 Hours)

Course	Title	Credits
<b>Select three courses based on concentration area from the following:</b>		
English		
EDSE 786	The Teaching of Literature in the Secondary School	3
EDSE 787	The Teaching of Composition in the Secondary School	3
EDSE 728	Advanced Study of the Teaching of English in Secondary Schools	3
Science		
EDSE 553	Teaching Middle and High School (Science)	3
EDTE 671	Computers in Science Education	3
EDSE 732	Advanced Study of the Teaching of Science in Secondary Schools	3
Mathematics		
EDSE 550	Teaching Middle and High School (Mathematics)	3
EDSE 764	Advanced Study of the Teaching of Mathematics in Secondary Schools	3
EDSE 770	Technology in Mathematics Education	3
Social Studies		
EDSE 558	Teaching Middle and High School (History and Social Studies)	3
EDSE 729	Advanced Study of the Teaching of History and Social Studies in Secondary Schools	3
EDSE 733	Selected Topics in Social Studies Education	3

### Content and Pedagogy Elective (3 Hours)

Students will take one additional 3-hour content or pedagogy elective as approved by advisor.

### Internship and Seminar (15 Hours)

Course	Title	Credits
<b>Internship I</b>		<b>3</b>
Select one of the following:		
EDSE 775A	Teaching Internship in Middle or High School (History and Social Studies)	

EDSE 781A	Teaching Internship in Middle or High School (Science)	
EDSE 778A	Teaching Internship in Middle or High School (Mathematics)	
EDSE 776A	Teaching Internship in Middle or High School (English)	
<b>Internship II</b>		<b>9</b>
Select one of the following:		
EDSE 775B	Teaching Internship in High School History and Social Studies	
EDSE 776B	Teaching Internship in High School English	
EDSE 781B	Teaching Internship in High School Science	
EDSE 778B	Teaching Internship in High School Mathematics	
<b>Seminar</b>		
EDSE 585	Secondary Internship Seminar I	1
EDSE 586	Secondary Internship Seminar II	2
<b>Total Credit Hours</b>		<b>15</b>

## Social Studies, M.A.T. (Secondary Education)

The MAT in Social Studies is offered jointly by the College of Education and the College of Arts and Sciences. This minimum 48 credit hour degree program is designed specifically for students who wish to obtain initial teacher certification in social studies at the secondary level.

### Learning Outcomes

- **Culture and Cultural Diversity.** Candidates in social studies should possess the knowledge, capabilities, and dispositions to organize and provide instruction at the appropriate school level for the study of culture and cultural diversity.
- **Time, Continuity, and Change.** Candidates in social studies should possess the knowledge, capabilities, and dispositions to organize and provide instruction at the appropriate school level for the study of time, continuity, and change.
- **People, Places, and Environment.** Candidates in social studies should possess the knowledge, capabilities, and dispositions to organize and provide instruction at the appropriate school level for the study of people, places, and environment.
- **Individual Development and Identity.** Candidates in social studies should possess the knowledge, capabilities, and dispositions to organize and provide instruction at the appropriate school level for the study of individual development and identity.
- **Individuals, Groups and Institutions.** Candidates in social studies should possess the knowledge, capabilities, and dispositions to organize and provide instruction at the appropriate school level for the study of individuals, groups, and institutions.
- **Power, Authority, and Governance.** Candidates in social studies should possess the knowledge, capabilities, and dispositions to organize and provide instruction at the appropriate school level for the study of power, authority and governance.
- **Production, Distribution, and Consumption.** Candidates in social studies should possess the knowledge, capabilities, and disposition to organize and provide instruction at the appropriate school level for the study of production, distribution, and consumption of goods and services.

- Science, Technology and Society. Candidates in social studies should possess the knowledge, capabilities, and dispositions to organize and provide instruction at the appropriate school level for the study of science, technology and society.
- Global Connections. Candidates in social studies should possess the knowledge, capabilities, and dispositions to organize and provide instruction at the appropriate school level for the study of global connections and interdependence.
- Civic Ideals and Practices. Candidates in social studies should possess the knowledge, capabilities, and dispositions to organize and provide instruction at the appropriate school level for the study of civic ideals and practices.

## Social Science Disciplines

- History. Candidates who are to be licensed to teach history at all school levels should possess the knowledge, capabilities, and dispositions to organize and provide instruction at the appropriate school level for the study of history.
- Geography. Candidates who are to be licensed to teach geography at all school levels should possess the knowledge, capabilities, and dispositions to organize and provide instruction at the appropriate school level for the study of geography.
- Civics and Government. Candidates who are to be licensed to teach civics and/or government at all school levels should possess the knowledge, capabilities, and dispositions to organize and provide instruction at the appropriate school level for the study of civics and government.
- Economics. Candidates who are to be licensed to teach economics at all school levels should possess the knowledge, capabilities, and dispositions to organize and provide instruction at the appropriate school level for the study of economics.
- Psychology. Candidates who are to be licensed to teach psychology at all school levels should possess the knowledge, capabilities, and dispositions to organize and provide instruction at the appropriate school level for the study of psychology.

## Programmatic Standards

- Course or Courses on Teaching Social Studies. Institutions preparing social studies teachers should provide and require prospective social studies teachers to complete a course or courses dealing specifically with the nature of the social studies and with ideas, strategies, and techniques for teaching social studies at the appropriate licensure level.
- Qualified Social Studies Faculty. Institutions preparing social studies teachers should provide faculty in the social studies and social studies education components of the program who are recognized as:
  - a. exemplary teachers,
  - b. scholars in the fields of social studies and social studies education, and
  - c. informed about middle and secondary school classrooms and teaching.

## Degree Requirements (48 Hours)

Specific course requirements include a minimum of the following:

### Content Area Courses (15-21 Hours)

Additional undergraduate or graduate course work in the social sciences may be required to meet criteria for certification (e.g., history, economics, geography, political science, psychology, sociology, anthropology).

### Professional Education Courses

Course	Title	Credits
Select one of the following:		
EDPY 705	Human Growth and Development	3
EDPY 707	Growth and Development: Middle Childhood and Adolescence	
<b>Reading and Literacy Courses</b>		
EDRD 731	Assessment and the Foundations of Reading/ Writing	3
EDRD 732	Teaching Reading and Writing in the Content Areas	3
<b>Total Credit Hours</b>		<b>9</b>

### Methods Courses (6 Hours)

Course	Title	Credits
Select at least 6 hours of graduate methods courses, one of which must be a technology course		
<b>Total Credit Hours</b>		<b>6</b>

### Internship and Seminar (15 Hours)

#### Note:

Each candidate must successfully complete a comprehensive examination as determined by the appropriate M.A.T. degree committee.

## Special Education, M.A.T. (P-12 Certification)

The M.A.T. program in special education is designed for career-changers or those persons deciding to become teachers after graduation from college in an area other than education. These persons may or may not have taken education courses as undergraduates but have an interest in working with students with disabilities. The M.A.T. degree requires 60 semester hours of graduate-level course work. The program includes 12 credit hours of directed teaching. Candidates must complete requirements for the S.C. State Department of Education and appropriate accrediting agencies to receive Initial Certification in Special Education. Students must successfully complete a comprehensive assessment prior to directed teaching.

## Learning Outcomes

- Foundations. Special educators understand the field as an evolving and changing discipline based on philosophies, evidence-based principles and theories, relevant laws and policies, diverse and historical points of view, and human issues that have historically influenced and continue to influence the field of special education and the education and treatment of individuals with exceptional needs both in school and society. Special educators understand how these influence professional practice, including assessment, instructional planning, implementation, and program evaluation. Special educators understand how issues of human diversity can impact families, cultures, and schools, and how these complex human issues can interact with issues in the delivery of special education services. They understand the relationships of organizations of special education to the organizations and functions of schools, school systems, and other agencies. Special educators



use this knowledge as a ground upon which to construct their own personal understandings and philosophies of special education.

- **Development and Characteristics of Learners.** Special educators know and demonstrate respect for their students first as unique human beings. Special educators understand the similarities and differences in human development and the characteristics between and among individuals with and without exceptional learning needs (ELN)<sup>1/</sup>. Moreover, special educators understand how exceptional conditions can interact with the domains of human development and they use this knowledge to respond to the varying abilities and behaviors of individual's with ELN. Special educators understand how the experiences of individuals with ELN can impact families, as well as the individual's ability to learn, interact socially, and live as fulfilled contributing members of the community.
- **Individual Learning Differences.** Special educators understand the effects that an exceptional condition<sup>2/</sup> can have on an individual's learning in school and throughout life. Special educators understand that the beliefs, traditions, and values across and within cultures can affect relationships among and between students, their families, and the school community. Moreover, special educators are active and resourceful in seeking to understand how primary language, culture, and familial backgrounds interact with the individual's exceptional condition to impact the individual's academic and social abilities, attitudes, values, interests, and career options. The understanding of these learning differences and their possible interactions provides the foundation upon which special educators individualize instruction to provide meaningful and challenging learning for individuals with ELN.
- **Instructional Strategies.** Special educators possess a repertoire of evidence-based instructional strategies to individualize instruction for individuals with ELN. Special educators select, adapt, and use these instructional strategies to promote positive learning results in general and special curricula<sup>3/</sup> and to appropriately modify learning environments for individuals with ELN. They enhance the learning of critical thinking, problem solving, and performance skills of individuals with ELN, and increase their self-awareness, self-management, self-control, self-reliance, and self-esteem. Moreover, special educators emphasize the development, maintenance, and generalization of knowledge and skills across environments, settings, and the lifespan.
- **Learning Environments and Social Interactions.** Special educators actively create learning environments for individuals with ELN that foster cultural understanding, safety and emotional well-being, positive social interactions, and active engagement of individuals with ELN. In addition, special educators foster environments in which diversity is valued and individuals are taught to live harmoniously and productively in a culturally diverse world. Special educators shape environments to encourage the independence, self-motivation, self-direction, personal empowerment, and self-advocacy of individuals with ELN. Special educators help their general education colleagues integrate individuals with ELN in regular environments and engage them in meaningful learning activities and interactions. Special educators use direct motivational and instructional interventions with individuals with ELN to teach them to respond effectively to current expectations. When necessary, special educators can safely intervene with individuals with ELN in crisis. Special educators coordinate all these efforts and provide guidance and direction to paraeducators and others, such as classroom volunteers and tutors.
- **Language.** Special educators understand typical and atypical language development and the ways in which exceptional conditions can interact with an individual's experience with and use of language. Special educators use individualized strategies to enhance language development and teach communication skills to individuals with ELN. Special educators are familiar with augmentative, alternative, and assistive technologies to support and enhance communication of individuals with exceptional needs. Special educators match their communication methods to an individual's language proficiency and cultural and linguistic differences. Special educators provide effective language models and they use communication strategies and resources to facilitate understanding of subject matter for individuals with ELN whose primary language is not English.
- **Instructional Planning.** Individualized decision-making and instruction is at the center of special education practice. Special educators develop long-range individualized instructional plans anchored in both general and special curricula. In addition, special educators systematically translate these individualized plans into carefully selected shorter-range goals and objectives taking into consideration an individual's abilities and needs, the learning environment, and a myriad of cultural and linguistic factors. Individualized instructional plans emphasize explicit modeling and efficient guided practice to assure acquisition and fluency through maintenance and generalization. Understanding of these factors as well as the implications of an individual's exceptional condition, guides the special educator's selection, adaptation, and creation of materials, and the use of powerful instructional variables. Instructional plans are modified based on ongoing analysis of the individual's learning progress. Moreover, special educators facilitate this instructional planning in a collaborative context including the individuals with exceptionalities, families, professional colleagues, and personnel from other agencies as appropriate. Special educators also develop a variety of individualized transition plans, such as transitions from preschool to elementary school and from secondary settings to a variety of postsecondary work and learning contexts. Special educators are comfortable using appropriate technologies to support instructional planning and individualized instruction.
- **Assessment.** Assessment is integral to the decision-making and teaching of special educators and special educators use multiple types of assessment information for a variety of educational decisions. Special educators use the results of assessments to help identify exceptional learning needs and to develop and implement individualized instructional programs, as well as to adjust instruction in response to ongoing learning progress. Special educators understand the legal policies and ethical principles of measurement and assessment related to referral, eligibility, program planning, instruction, and placement for individuals with ELN, including those from culturally and linguistically diverse backgrounds. Special educators understand measurement theory and practices for addressing issues of validity, reliability, norms, bias, and interpretation of assessment results. In addition, special educators understand the appropriate use and limitations of various types of assessments. Special educators collaborate with families and other colleagues to assure non-biased, meaningful assessments and decision-making. Special educators conduct formal and informal assessments of behavior, learning, achievement, and environments to design learning experiences that support the growth and development of individuals with ELN. Special educators use assessment information to identify supports and adaptations required for individuals with ELN to access the general curriculum and to participate in school, system, and statewide assessment programs. Special educators regularly monitor the progress of individuals with ELN in general and special curricula. Special educators use appropriate technologies to support their assessments.

- **Professional and Ethical Practice.** Special educators are guided by the profession's ethical and professional practice standards. Special educators practice in multiple roles and complex situations across wide age and developmental ranges. Their practice requires ongoing attention to legal matters along with serious professional and ethical considerations. Special educators engage in professional activities and participate in learning communities that benefit individuals with ELN, their families, colleagues, and their own professional growth. Special educators view themselves as lifelong learners and regularly reflect on and adjust their practice. Special educators are aware of how their own and others attitudes, behaviors, and ways of communicating can influence their practice. Special educators understand that culture and language can interact with exceptionalities, and are sensitive to the many aspects of diversity of individuals with ELN and their families. Special educators actively plan and engage in activities that foster their professional growth and keep them current with evidence-based best practices. Special educators know their own limits of practice and practice within them.
- **Collaboration.** Special educators routinely and effectively collaborate with families, other educators, related service providers, and personnel from community agencies in culturally responsive ways. This collaboration assures that the needs of individuals with ELN are addressed throughout schooling. Moreover, special educators embrace their special role as advocate for individuals with ELN. Special educators promote and advocate the learning and well being of individuals with ELN across a wide range of settings and a range of different learning experiences. Special educators are viewed as specialists by a myriad of people who actively seek their collaboration to effectively include and teach individuals with ELN. Special educators are a resource to their colleagues in understanding the laws and policies relevant to Individuals with ELN. Special educators use collaboration to facilitate the successful transitions of individuals with ELN across settings and services.

## Degree Requirements (60 Hours)

The degree requirements include the following:

### Concentration Requirements (15 Hours)

Candidates choose **one** area from the following four:

#### Intellectual Disabilities

Course	Title	Credits
EDEX 619	Nature of Students with Intellectual Disabilities	3
EDEX 712	Instruction of Students with Intellectual Disabilities	3
Select 9 hours of electives as approved by advisor		9
<b>Total Credit Hours</b>		<b>15</b>

#### Emotional and Behavioral Disorders

Course	Title	Credits
EDEX 632	Nature of Students with Emotional and Behavior Disabilities	3
EDEX 784	Instruction of Students with Emotional and Behavioral Disorders	3
Select 9 hours of electives as approved by advisor		9
<b>Total Credit Hours</b>		<b>15</b>

#### Learning Disabilities

Course	Title	Credits
EDEX 531	Nature of Students with Specific Learning Disabilities	3
EDEX 616	Instruction of Students with Specific Learning Disabilities	3
Select 9 hours of electives as approved by advisor		9
<b>Total Credit Hours</b>		<b>15</b>

#### Severe and Multiple Disabilities

Course	Title	Credits
EDEX 610	Instruction of Students with Severe and Multiple Disabilities	3
EDEX 615	Curriculum and Language Instruction for Students with Severe and Multiple Disabilities	3
EDEX 619	Nature of Students with Intellectual Disabilities	3
EDEX 701	Nature of Students with Autism	3
EDEX 809	Single-Case Research Designs in Special Education	3
<b>Total Credit Hours</b>		<b>15</b>

## Professional Core Requirements (45 Hours)

For all concentration areas.

Course	Title	Credits
EDEX 523	Introduction to Exceptional Children	3
EDEX 580	Direct Instruction in Reading for At-Risk Learners	3
EDEX 640	Managing Problem Behavior in the Classroom	3
EDEX 691	Collaborative Partnerships in PK-12 Special Education	3
EDEX 713	Practicum in Instruction of Exceptional Children I	3
EDEX 715	Applied Behavior Analysis in Special Education	3
EDEX 716	Functional Behavioral Assessment and Behavior Interventions	3
EDEX 726	Seminar in Special Education for Student Teachers	3
EDEX 750	Technology and Exceptional Populations	3
EDEX 790	Introduction to Assessment in Special Education	3
Select one course from the following:		12
EDEX 796B	Directed Teaching in Special Education	
EDEX 796I	Directed Teaching in Special Education	
EDEX 796L	Directed Teaching in Special Education	
EDEX 796S	Directed Teaching in Special Education	
EDPY 705	Human Growth and Development	3
<b>Total Credit Hours</b>		<b>45</b>

## Theatre, M.A.T. (P-12 Certification)

### Learning Outcomes

- Students will demonstrate the ability to use the SC Theatre Standards to construct meaningful, age-appropriate lesson plans and units of study for youth.
- Students will become proficient in synthesizing current research on human development to influence their lesson planning for young theatre artists.

- Students will demonstrate theoretical and practical knowledge of the issues and topics of theatre for young audiences and actors.

## Degree Requirements (45 Hours)

The M.A.T. degree requires 45 semester hours of graduate-level course work, with 6-15 credits in professional education, 15-24 credits in the teaching content area, and 15 hours in internship and seminar. To meet SC Read to Succeed requirements, students completing the MAT in Theatre must include in their program of study: EDRD 732. Eligibility for admission is limited to those persons seeking initial teacher certification. Candidates must complete additional course work in professional education and/or their teaching content area at the undergraduate and graduate levels as necessary.

## Instruction and Teacher Education

Fenice Boyd, *Chair*

### Ph.D. Language/Research Tool Requirement

The candidate must have a reading knowledge of one foreign language or an approved alternative selected from the Department of Instruction and Teacher Education language/research tool options.

#### Option A

Demonstrate competency in a foreign language or in an alternative language for the visually or hearing impaired by completion of one of the following courses with a grade of B or better:

- Foreign Languages: 615 course or satisfactory performance on an examination administered by the Department of Languages, Literatures, and Cultures
- EDEX 682
- EDEX 687

(Substitute courses from other accredited institutions may be acceptable in place of EDEX 682 and EDEX 687.)

#### Option B

Demonstrate competency in a computer language or software package with potential for research applications by one of the following:

1. enroll in and pass EDET 603 with a grade of B or better,
2. enroll in and pass both EDRM 710 and EDRM 711 with grades of B or better,
3. submit artifacts at a time of comprehensive examination that demonstrate the ability to use a software package approved by the advisor for qualitative research; faculty in the program area will evaluate the artifacts using a departmental rubric, or
4. Demonstrate competency in a computer-related area of study outside of the College of Education by completion of one of the following courses or sets of courses with a grade of B or better (please check the bulletin section for the College of Engineering and Information Technology for prerequisites):
  - a. Programming: CSCE 145 and CSCE 146 or CSCE 500
  - b. Internet Resource: SLIS 703
  - c. Online Databases: SLIS 706 and SLIS 740

## Programs

- Early Childhood Education, M.Ed. (p. 270)
- Language and Literacy, M.Ed. (p. 271)
- Language and Literacy, Ph.D. (p. 271)
- Teaching and Learning, Ph.D. (p. 272)
- Teaching, M.Ed. (p. 273)

## Courses

### EDCS 625 - Solving Practical Problems in School Curriculum (3 Credits)

An introduction to current and promising designs and approaches to curriculum development from grades K-12.

### EDCS 690 - Independent Study (1-3 Credits)

### EDCS 710 - Diversity Training for Staff Development (3 Credits)

Review of the history, concepts, current techniques, skills, and issues in diversity training as it applies to effective staff development.

### EDCS 720 - Introduction to Diversity and the Curriculum (3 Credits)

An introduction to the vast array of differences among children, youth, and adults and the impact of these differences on the curriculum, their learning, and their social and emotional development.

### EDCS 721 - Social Class Diversity and the Curriculum (3 Credits)

The interplay of social class diversity, curriculum development, and success in formal schooling. Promising programs and practices for educating children of poverty are critically examined.

### EDCS 722 - Racial and Ethnic Diversity and the Curriculum (3 Credits)

A critical examination of theories of race and ethnicity and their impact on the curriculum. The dynamics of dominance, issues of social justice, and means of social action are explored.

### EDCS 723 - Understanding Sexual Diversity in Schools and Other Social Institutions (3 Credits)

An examination of issues and concepts relating to sexual diversity as it applies to formal and nonformal educational settings with particular emphasis on curriculum, educational policy, and school practice.

### EDCS 724 - Gender Diversity in Schools and Communities (3 Credits)

A study of gender, culture, and power; research and theory from educational psychology, sociology, history, and current feminist scholarship.

### EDCS 725 - Principles of Curriculum Construction (3 Credits)

Presentation of methods and procedures to design, develop, implement, and evaluate curricula.

### EDCS 726 - Curriculum Leadership (3 Credits)

Study of theory, research, and practice of curriculum leadership as a transformative enterprise with particular focus on embracing diversity and fostering social justice in schools and other social institutions.

**Prerequisites:** EDCS 725.

### EDCS 727 - Curriculum Issues in Practice (3 Credits)

Each student identifies and studies a contemporary curriculum issue pertaining to diversity. Under faculty supervision, observations and interviews in schools and/or community agencies will take place throughout the semester.

**Prerequisites:** EDCS 725 or equivalent.

### EDCS 728 - Curriculum in Higher Education (3 Credits)

A survey of the design and development of post-secondary curriculum.

**EDCS 729 - Organizational Change in Education (3 Credits)**

Investigation of the process of diffusion and adoption of innovations and change in schools and communities, with a particular emphasis on the inclusion of and impact on diverse populations.

**EDCS 799 - Thesis Preparation (1-9 Credits)****EDCS 812 - Principles of Action Research (3 Credits)**

Introductory analysis, interpretation, and systematic study, using action research methodology, of a significant question or issue related to teaching or administration in K12 schools, higher education, and/or other social institutions.

**EDCS 813 - Advanced Principles of Action Research (3 Credits)**

Advanced analysis, interpretation, and systematic study, using action research methodology, of a significant question or issue related to teaching, administration in K12 schools, higher education, and/or other social institutions.

**EDCS 820 - Advanced Study of Diversity and Curriculum (3 Credits)**

The formulation and use of interpretive frameworks to study and understand the relationships among human diversity, school structures, and the curriculum.

**EDCS 821 - Curriculum Theory (3 Credits)**

An advanced curriculum course designed to allow students to investigate and analyze curriculum studies discourse and its application to issues of diversity.

**EDCS 822 - Curriculum Classics: Trends and Issues (3 Credits)**

The systematic presentation of classic curriculum works as they relate to current theoretical issues in education.

**EDCS 823 - Curriculum Inquiry (3 Credits)**

Examination of empirical, critical, and phenomenological methods and issues in conducting curriculum research.

**EDCS 824 - Curriculum Seminar (3 Credits)**

Intensive study of a designated topic influencing curriculum theory and/or practice.

**EDCS 890 - Independent Study (3 Credits)****EDCS 899 - Dissertation Preparation (1-12 Credits)****EDEC 510 - Parent/Family Dynamics in Early Childhood Education (3 Credits)**

Principles, practices, and content of family dynamics, including practicum/service learning.

**Graduation with Leadership Distinction:** GLD: Community Service

**EDEC 540 - The Young Child: Behavior and Development in Early Childhood (3 Credits)**

Service-learning and seminar experiences addressing intellectual, physical, social, and emotional development, prenatal through grade three, within an ecological context. Child's critical thinking, creative expression, and diagnosis/assessment emphasized.

**EDEC 546 - Education of Young Children: An Ecological Approach (3 Credits)**

An ecological study with emphasis on home-school relations, parent involvement, and community resources. Multicultural perspectives and needs of exceptional children addressed.

**Corequisite:** EDEC 469.

**EDEC 547 - Field Problems: Teaching Mathematics Using Manipulative Materials, Grades K-3 (3 Credits)**

Instructional approaches and materials for teaching elementary school mathematics, grades K-3.

**EDEC 570 - Internship in Environments for Teaching and Learning (3 Credits)**

Internship for practice in classrooms appropriate to early childhood education related to curriculum design and assessment. Admission to the professional program in early childhood education.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Internships

**EDEC 591 - Seminar on Teaching in Early Childhood (3 Credits)**

Exploration of the principles and theories about teaching and learning as they apply to early childhood education in the context of schools in democratic societies.

**Prerequisites:** admission to internship in early childhood education.

**Corequisite:** EDTE 590A, EDTE 590B, and EDTE 590C.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Internships, GLD: Research

**EDEC 608 - Parent Involvement in Early Childhood Education (3 Credits)**

Analysis of programs and practices for involving parents in early childhood educational settings. Emphasizes objectives, methods, techniques, and materials for program development. Community resources for supporting programs for children in various instructional settings.

**EDEC 690 - Independent Study (1-3 Credits)****EDEC 712 - Practicum in Parent Involvement in Early Childhood Education (3 Credits)**

School- and home-based experience with parents. Emphasis upon home-school relationships and their effects upon the young child's development and learning. Participation with advisory groups, parent activities in the classroom, home visits, and parent-teacher communication. Weekly seminar sessions.

**Prerequisites:** EDEC 540 and EDEC 608 or EDEC 610.

**EDEC 740 - The Young Child: Applying Theory and Research (3 Credits)**

Analysis and discussion of theory and research related to the education of young children. Intellectual, social, emotional, and physical development of infants, toddlers, and young children will be examined. Special emphasis on implication for developing.

**Prerequisites:** EDEC 540 and EDPY 705.

**EDEC 742 - Advanced Study of Early Childhood Curricula and Program Models (3 Credits)**

An analysis of early childhood program models and curricula with theoretical orientation, related research, societal needs, and the student's philosophy of education.

**Prerequisites:** EDEC 540, EDEC 542, EDEC 544.

**EDEC 744 - Advanced Study of Language Development and Communication Skills in Early Childhood Education (3 Credits)**

Provides classroom teachers with an overview of the development of language and communication skills in children, birth through eight.

**Prerequisites:** EDEC 544 or equivalent.

**EDEC 745 - Emergent Literacy (3 Credits)**

Theories of emergent literacy and implications for literacy learning and instruction.

**Prerequisites:** EDEC 744.

**EDEC 750 - Play Theory and Early Learning (3 Credits)**

Theory, research, and practice related to the play of young children in various settings.

**EDEC 754 - Studies and Internships I In Teaching Social Studies -Early Childhood (3 Credits)**

Planning, designing and implementing a developmentally appropriate socio-cultural curriculum for young children, preschool through grade four.

**Prerequisites:** Admission to the MAT program.

**EDEC 755 - Studies and Internship in Teaching Science (3 Credits)**

The study and practice of science education for preschool and primary students focusing on appropriate content, goals, and methods.

**Prerequisites:** Admission to the MAT program.

**EDEC 769A - Internship II: Early Childhood Curriculum and Assessment (4 Credits)**

Internship for practice in prekindergarten through primary grade classrooms related to curriculum design and assessment, leading to initial certification.

**Prerequisites:** Admission to MAT program and successful completion of first semester internship.

**Corequisite:** EDEC 769B, EDEC 769C, and EDEC 770.

**EDEC 769B - Internship II: Early Childhood Teaching (4 Credits)**

Internship for practice in prekindergarten through primary grade classrooms related to interactive teaching, leading to initial certification.

**Prerequisites:** Admission to MAT program and successful completion of first semester internship.

**Corequisite:** EDEC 769A, EDEC 769C, and EDEC 770.

**EDEC 769C - Internship II: Early Childhood Professional Roles (4 Credits)**

Internship for practice in school settings related to professional development, leading to initial certification.

**Prerequisites:** Admission to MAT program and successful completion of first semester internship.

**Corequisite:** EDEC 769A, EDEC 769B, and EDEC 770.

**EDEC 770 - Early Childhood Internship Seminar (3 Credits)**

Seminar for students seeking initial certification. Consideration of principles and theories of teaching and learning and strategies to translate theory into personal classroom practice.

**Prerequisites:** Admission to MAT program and successful completion of first semester internship.

**Corequisite:** EDEC 769A, EDEC 769B, and EDEC 769C.

**EDEC 794 - Leadership, Advocacy and Collaboration in Early Childhood Settings (3 Credits)**

An overview of the purposes, organizational structure, sponsorship, funding sources, and advocacy for care and education programs and the characteristics, roles, and responsibilities of leaders in the field.

**EDEC 795 - Technology in Early Childhood Education (3 Credits)**

Strategies for integrating technology in early childhood education.

**Prerequisites:** EDTE 631.

**EDEC 797 - Seminar in Early Childhood Education (3 Credits)**

Synthesis of development, curriculum, cognition, and related issues in early childhood education.

**Prerequisites:** degree candidacy in early childhood education and 21 graduate hours completed.

**EDEC 810 - Special Topics in Early Childhood Education (3 Credits)**

Special and specific analyses of crucial issues in the field as they exist and emerge in the future. Provides an opportunity for students to do in-depth study of definitive areas of concern.

**EDEC 811 - Current Trends and Issues in Early Childhood Education (3 Credits)**

Analysis of innovations in the field within a historical perspective.

**EDEC 812 - Advanced Internship in Early Childhood Education (3-6 Credits)**

Supervised internship and related seminar participation in an approved setting.

**Prerequisites:** Admission to doctoral program.

**EDEC 813 - Program Development and Implementation in Early Childhood Education (3 Credits)**

Analysis of and participation in the development of program content, policy, and advocacy.

**Prerequisites:** EDEC 740, EDEC 742, EDEC 744, and admission to doctoral candidacy.

**EDEC 814 - Analysis of Current Research in Early Childhood Education (3 Credits)**

A critical evaluation of reported research in early childhood with special emphasis on recent and ongoing research programs.

**Prerequisites:** EDEC 740, EDEC 742, EDEC 744, and admission to doctoral candidacy.

**EDEC 815 - Advanced Study of Early Childhood Curricula (3 Credits)**

An analysis of early childhood curriculum alternatives that focus on theoretical orientation, related research, societal needs, and the student's philosophy of education.

**Prerequisites:** EDEC 740, EDEC 742, EDEC 744, and admission to doctoral candidacy.

**EDEC 890 - Independent Study (3 Credits)****EDEL 505P - Inquiry Practicum: The Elementary School (1 Credit)**

Identifying and understanding the various components of the elementary environment through the practice of inquiry through field-based experiences.

**Corequisite:** EDEL 305.

**EDEL 506 - Integrated Curriculum in Elementary Schools (3 Credits)**

Examining and practicing a variety of approaches that connect the content of different elementary school subjects.

**EDEL 506P - Inquiry Practicum: Roles of Elementary Teachers (1 Credit)**

Identifying and understanding the roles of elementary teachers through the practice of inquiry through field-based experiences.

**Corequisite:** EDEL 506.

**EDEL 510 - Teaching Second Languages to Young Children (3 Credits)**

To assist prospective teachers of young children in the development of a second language and multicultural learning activities. Practicum sessions are an integral part.

**Prerequisites:** 210 level of a foreign language or its equivalent.

**Cross-listed course:** FORL 510

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Internships

**EDEL 515 - Science in the Elementary School (3 Credits)**

Reinforces the science background of prospective and practicing elementary teachers. Innovations are examined. Emphasis is placed on methods, materials, community resources, and evaluation procedures.

**EDEL 544 - Modern Approaches to Mathematics Teaching (3 Credits)**

Curriculum and pedagogy for mathematics topics taught in grades 3 through 8.

**EDEL 548 - Field Problems: Teaching Mathematics Using Manipulative Materials, Grades 4-6 (3 Credits)**

Instructional approaches and materials for teaching elementary school mathematics, grades 4-6. This course cannot be applied to a graduate degree in the elementary education program.

**EDEL 560 - Social Studies in the Elementary/ Middle School (3 Credits)**

Fundamentals of social studies education in the elementary/middle school.

**EDEL 570 - Internship in Environments for Teaching and Learning (3 Credits)**

Internship for practice in classrooms appropriate to elementary education related to curriculum design and assessment.

**Prerequisites:** Admission to the internship in elementary education.

**EDEL 571 - Internship in Planning and Motivation (3 Credits)**

Field experience that emphasizes planning lessons that actively engage students in learning.

**Prerequisites:** Admission to the internship in elementary education.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Internships

**EDEL 642 - Teaching Mathematics to Young Children (3 Credits)**

Analysis of a developmental approach to teaching children under the age of 9.

**EDEL 645 - Diagnostic Teaching of Arithmetic (3 Credits)**

Analysis of the concepts and skills of arithmetic in the school mathematics curriculum; exploration of diagnostic-prescriptive teaching methods.

**EDEL 670 - Language Arts in the Elementary and Middle School (3 Credits)**

Examine the content, goals, and methods of teaching language arts in elementary and middle school.

**EDEL 690 - Independent Study (1-3 Credits)****EDEL 701 - Culturally Sustaining Pedagogy for the Elementary Classrooms (3 Credits)**

Theoretical and pedagogical approaches to Culturally Sustaining Pedagogy (CSP)—curriculum design tools and instructional strategies that reflect the diversity of students' cultural and linguistic backgrounds in elementary classrooms. Masters of Arts in Teaching for Elementary Education Majors.

**EDEL 709 - Curriculum and Instruction Practices Designed to Teach Content & Literacy Across the Curriculum (3 Credits)**

An investigation of the beliefs and practices of high quality instructional methods and materials designed to teach elementary readers, writers, mathematicians, scientists and social scientists. Individual content area instruction will be addressed as well as strategies for genuine integration across the curriculum. Special attention will be devoted to teaching diverse populations including English Language Users, in culturally responsive ways.

**EDEL 715 - The Elementary School Curriculum (3 Credits)**

Critical study of the modern elementary school curriculum.

**EDEL 716 - The Elementary School Organization (3 Credits)**

A course designed to examine the internal facets of the elementary school, including the library; health, guidance, and other pupil personnel services; curriculum revision; elementary school procedures; and pupil accounting.

**Prerequisites:** EDEL 715.

**EDEL 717 - Curriculum Problems in the Elementary School (3 Credits)**

A careful examination of the persistent problems of elementary schools (grouping, promotions, etc.) and the best solutions in terms of research findings and expert opinion.

**Prerequisites:** EDEL 715.

**EDEL 720 - Middle School Organization and Curriculum (3 Credits)**

An overview of the development of the middle school, history, purposes, and organization and an in-depth analysis of middle school organization and curriculum. The characteristics of middle school students, methods of evaluating students, and the overall curricular program are also considered.

**EDEL 743 - Studies and Internship in Teaching Social Studies-Elementary (3 Credits)**

The study and practice of social studies education for elementary students focusing on appropriate content, goals and methods.

**Prerequisites:** Admission to the MAT program.

**EDEL 744 - Studies and Internship in Teaching Science - Elementary (3 Credits)**

The study and practice of science education for elementary students focusing on appropriate content, goals and methods.

**Prerequisites:** Admission to the MAT program.

**EDEL 745 - Teaching Elementary Problem Solving, Geometry and Measurement Topics (3 Credits)**

Analysis of the school curriculum and instructional methods in the designated areas of mathematics; exploration of appropriate outcomes on instruction.

**Prerequisites:** MATH 221 or its equivalent.

**EDEL 760 - Implementing Social Studies in the Elementary/Middle School (3 Credits)**

The selection of teaching procedures and instructional materials used to teach social studies in the elementary/middle school.

**EDEL 771 - Teaching Writing in Elementary and Middle School (3 Credits)**

Writing instruction in relation to the developmental characteristics of children through preadolescence.

**EDEL 780 - Seminar in Elementary Education (3 Credits)**

Students will synthesize their graduate studies for a master's degree in elementary education. 24 semester hours of credit earned as specified on the master's degree program of study.

**EDEL 790 - MAT Internship in Elementary Education (9 Credits)**

Internship for practice in elementary classrooms (grades 2-6) related to curriculum design, assessment, interactive teaching, and professional roles. MAT in Elementary Education majors.

**Prerequisites:** Admission to Internship II in Elementary Education.

**Corequisite:** EDEL 791.

**EDEL 790A - Internship II: Elementary School Instruction (4 Credits)**

Internship for practice in classroom settings related to curriculum design and implementation, leading to initial certification.

**Prerequisites:** Admission to MAT program and successful completion of first semester internship.

**Corequisite:** EDEL 790B, EDEL 790C, EDEL 791.

**EDEL 790B - Internship II: Elementary School Instruction (4 Credits)**

Internship for practice in classroom settings related to instruction, leading to initial certification.

**Prerequisites:** Admission to MAT program and successful completion of first semester internship.

**Corequisite:** EDEL 790A, EDEL 790C, EDEL 791.

**EDEL 790C - Internship II: Elementary School Professional Roles (4 Credits)**

Internship for practice in classroom settings related to professional development, leading to initial certification.

**Prerequisites:** Admission to MAT program and successful completion of first semester internship.

**Corequisite:** EDEL 790A, EDEL 790B, EDEL 791.

**EDEL 791 - Elementary Internship Seminar (3 Credits)**

Seminar for students seeking initial certification. Consideration of principles and theories of curriculum development and strategies to translate curriculum into personal classroom practice.

**Prerequisites:** Admission to MAT program and successful completion of first semester internship.

**Corequisite:** EDEL 790A, EDEL 790B, EDEL 790C.

**EDEL 815 - Models of Instruction (3 Credits)**

Seminar on the relationship between different models of teaching and the cognitive, affective, social, and psychological outcomes of instruction.

**Prerequisites:** master's degree in education.

**EDEL 840 - Advanced Study of Teaching Elementary School Mathematics (3 Credits)**

Identification of instructional methods implied by recent research on mathematics teaching, learning, and curriculum.

**Prerequisites:** EDEL 645 or EDEL 745.

**EDEL 858 - Advanced Study of Science in Elementary/Middle School (3 Credits)**

Study of curriculum models and instructional theory underlying elementary and/or middle school science programs.

**Prerequisites:** EDEL 515 or equivalent.

**EDEL 860 - Advanced Study of Social Studies in Elementary/Middle School (3 Credits)**

Analysis and application of the concepts and skills that broaden the traditional scope of elementary/middle school social studies curriculum.

**Prerequisites:** EDEL 560 or EDEL 760.

**EDEL 870 - Advanced Study of Language Arts for the Elementary School (3 Credits)**

Examination of programs, content, and methods of teaching writing, speaking, reading and listening to grades 1-8 in the light of current research and theory in language learning.

**Prerequisites:** EDEL 670 or equivalent.

**EDEL 890 - Independent Study (3 Credits)****EDML 553 - Methods and Materials for Teaching Science in the Middle Grades (3 Credits)**

A study of methods, techniques, and materials of instruction appropriate to science teaching in the middle school.

**EDML 563 - Methods and Materials for Teaching Social Studies in the Middle School (3 Credits)**

A study of goals, content, methods, and materials of instruction in middle school social studies.

**EDML 572 - Middle Level Literacy Assessment (3 Credits)**

Introduces literacy assessment for individual and small groups or middle level students.

**EDML 573 - Methods and Materials for Teaching English/Language Arts in the Middle Grades (3 Credits)**

Introduces goals, content, and methods of teaching language arts at the middle level.

**EDML 583 - Methods and Materials for Teaching Mathematics in the Middle Grades (3 Credits)**

A study of methods, techniques, and materials of instruction appropriate to mathematics teaching in the middle school.

**EDML 584 - Middle School Internship Seminar (3 Credits)**

Inquiry into the issues that arise during internship B experiences including classroom management, adolescent development, legal/professional responsibilities, multicultural perspectives, and needs of exceptional children.

**Corequisite:** EDML 599.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Internships

**EDML 598 - Internship A in the Middle School (3 Credits)**

Application of effective teaching techniques and organization of instructional settings for middle school students.

**Prerequisites:** admission to internship in middle level program.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Internships

**EDML 599 - Internship B in the Middle School (12 Credits)**

Application of effective teaching techniques and organization of instructional settings for middle school students.

**Prerequisites:** B or better in EDML 598.

**Corequisite:** EDSE 584.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Internships

**Experiential Learning:** Experiential Learning Opportunity

**EDRD 500 - Content Area Literacy PK-12 (3 Credits)**

A survey of research and practice which facilitates students' literacy skills in the content areas. For K-12 content area teachers of art, dance, physical education, foreign language, music and theatre.

**EDRD 511 - Teaching Reading to Adults I (3 Credits)**

Diagnostic and prescriptive modes of teaching reading to adults, based on the physical, psychological, intellectual, and social characteristics of the adult learner.

**EDRD 512 - Teaching Reading to Adults II (3 Credits)**

Preparation of materials for teaching basic reading skills to adults and practicum experiences in teaching adults to read.

**Prerequisites:** EDCO 511 or EDRD 511.

**EDRD 514 - Teaching of Reading in the Elementary School (3 Credits)**

Study of the various phases of reading in their relation to a modern program of education and the place of reading in the curriculum. Emphasis on modern practices in the classroom teaching of reading.

**EDRD 518 - Reading in the Secondary School (3 Credits)**

The place of reading instruction in high schools, the programming of special services in reading instruction, methods of teaching basic and developmental reading skills, and case studies of programs. Demonstrations of tests and devices.

**EDRD 600 - Foundations of Reading Instruction (3 Credits)**

An overview of reading and its curriculum implications: grades K-12 and adults. Emphasis is placed on current trends and issues and related methodologies.

**EDRD 650 - Teaching Reading Through A Literature Emphasis (3 Credits)**

Integrating appropriate literature into traditional and alternative reading programs. Identifying appropriate literature for classroom use and recreational reading. Use of literature as a means of developing and reinforcing reading skills.

**EDRD 651 - Introduction to Teaching Media Literacy (3 Credits)**

A survey of analysis of electronic and non-print media themes and messages aimed at youth, with special emphasis on design and implementation of curricula for enhancing children's media literacy.

**EDRD 690 - Independent Study (1-3 Credits)****EDRD 700 - Multimodal Multi-genre Writing (3 Credits)**

An active and reflective experience of process writing within multiple genres and multimodal literacies with classroom applications.

**EDRD 711 - Psychological Foundations of Reading (3 Credits)**

Designed to familiarize students with research findings and theories in psychology as they relate specifically to the process of learning to read. Topics will range from perception, learning theory, and personality theory to the implications of cultural differences and language factors as they affect both the child's learning to read and the teacher's effective facilitation of this learning.

**Prerequisites:** EDRD 514, EDRD 716, EDRD 717.

**EDRD 714 - Critical Foundations of Literacy (3 Credits)**

An overview of major theoretical, conceptual, and historical foundations in literacy and their curricular implications. Emphasis is placed on actively analyzing current trends and related methodologies.

**EDRD 715 - Instructional Strategies for Reading (3 Credits)**

Demonstration and critical evaluation of teaching strategies and materials in reading.

**EDRD 716 - Foundations of Reading Assessment (3 Credits)**

Seminar and supervised one-on-one field experience focusing on assessing and meeting the needs of individual children as readers with emphasis on at-risk children.

**EDRD 718 - Seminar in Classroom Reading Assessment (3 Credits)**

Seminar and supervised field experience focusing on assessing and meeting the needs of small groups of children as readers.

**Prerequisites:** EDRD 600, EDRD 715, and EDRD 716.

**EDRD 719 - Developing and Guiding the Reading Program (3 Credits)**

Design, management, and evaluation of reading programs at the classroom, school, or district levels.

**Prerequisites:** EDRD 600 and EDRD 715.

**EDRD 720 - Capstone Seminar in Language and Literacy (3 Credits)**

Synthesis, critique, and evaluation of current research and educational practice in language and literacy.

**Prerequisites:** EDRD 600, EDRD 715, EDRD 716, EDRD 718, and EDRD 719.

**EDRD 730 - Teaching Reading and Writing in the Content Areas (3 Credits)**

A survey of the strategies and materials which facilitate students' reading and writing skill in the content areas. For P-12 reading education and content area teachers.

**EDRD 731 - Assessment and the Foundations of Reading/Writing (3 Credits)**

Overview of assessment theory and practice; the reading/writing processes and the curricular implications across content areas.

**EDRD 732 - Teaching Reading and Writing in the Content Areas (3 Credits)**

Survey of the strategies and materials which facilitate students' reading and writing skill in the content areas.

**EDRD 750 - Literacy Curriculum Development (3 Credits)**

Classroom, school, and district literacy curriculum will be explored through multicultural and global literature.

**EDRD 760 - Literacy Research and Inquiry (3 Credits)**

An overview of inquiry-based teaching and learning within literacy instruction. Affiliated field experience will occur with a focus on assessing and meeting the needs of small groups of students.

**EDRD 776 - Coaching within Classrooms: Improving Teaching and Literacy Instruction (3 Credits)**

Coaching principles and strategies related to improvements and innovations in classrooms and in literacy instruction. Emphasizes working with teachers in classrooms to bring about educational reform and improvements in teaching and literacy instruction.

**EDRD 783 - Literacy Leadership and Supervision (3 Credits)**

Developing as a literacy leader within school and district contexts through: engagement in effective collaboration; design, management, and evaluation of professional learning; design, management, and evaluation of family and community outreach.

**EDRD 794 - Linguistics for Classroom Teachers PreK-12 (3 Credits)**

An introduction to the concepts of linguistics specifically for preK-12 educators. Topics include syntax, morphology, semantics, pragmatics, and first and second language acquisition theories.

**EDRD 795 - ESOL Principles and Strategies for PreK-12 Classrooms (3 Credits)**

A survey course focused on English for Speakers of Other Languages (ESOL), including a focus on different theoretical principles and approaches within various learning context as they concern preK-12 learners.

**EDRD 796 - Teaching Reading and Writing to ESOL Learners: Theory and Practice (3 Credits)**

This course surveys research on the mental processes and linguistic contexts involved in reading and writing in a second language. Pedagogical implications for elementary, secondary, and postsecondary learners are discussed.

**Cross-listed course:** LING 796

**EDRD 797 - Assessment for English Language Learners (3 Credits)**

Seminar and supervised one-on-one field experience focusing on accessing and meeting the needs of English learners including approaches to classroom-based assessments in ESL, bilingual education, and preschool-grade 12 classrooms.



**EDRD 798 - Curriculum Design and Materials Development for English Language Learners (3 Credits)**

This course will engage students in the examination and creation of research and theory that support curriculum design and materials development for the ESOL classroom.

**EDRD 800 - Literacy Education P-12 (3 Credits)**

Impact of theories of teaching, learning, and texts on literacy instruction; social, historical, political, and cultural influences on literacy.

**EDRD 801 - Critical Perspective on English/Language Arts (3 Credits)**

Issues of literacy from a variety of critical stances such as democratic values, gender roles, and multiculturalism.

**EDRD 802 - Internship in the Supervision of Reading (3 Credits)**

Internship in diagnosis and instruction of disabled, corrective, and developing readers to include supervision of graduate students enrolled in practica in reading, parent training, and program administration. Limited to advanced graduate students. May be repeated one additional time in a different supervisory setting for a maximum of six hours.

**EDRD 803 - Pedagogical Applications of Reader Response Theory (3 Credits)**

Research and theory, emphasizing the role of the reader's response in the reading process.

**EDRD 805 - Teaching and Adminstrating the College Reading Program (3 Credits)**

Emphasis on the acquiring of background and skills necessary for instruction in and administration of college-level reading programs located in post-high school institutions (technical schools, two-year colleges, four-year colleges, and universities).

**Prerequisites:** EDRD 514, EDRD 518.

**EDRD 806 - Practicum in Teaching and Administering the College Reading Program (3 Credits)**

Refining of counseling, evaluation, research, instructional, and administrative skills needed by college reading personnel. Practical application of the background and skills taught in EDRD 805.

**Prerequisites:** EDRD 514, EDRD 805.

**EDRD 811 - Cultural Perspective on Psychological and Social Foundations of Literacy Learning (3 Credits)**

Perspectives from psychology and sociocultural theory as they relate to literacy learning and research in literacy learning.

**EDRD 815 - Critique of Qualitative Research in Language and Literacy Education (3 Credits)**

A review and critique of qualitative perspectives on language and literacy research.

**EDRD 824 - Seminar in Language and Literacy Education (3 Credits)**

Intensive study of a designated topic influencing theory and/or practice in language and literacy education.

**Prerequisites:** Admission to a doctoral program in education or related field.

**EDRD 840 - Semiotics, Reading, Literacy and Learning (3 Credits)**

Peircean semiotics and the implications of such for language and literacy education.

**EDRD 844 - Advanced Study of Language Acquisitions (3 Credits)**

Theoretical frameworks and the relationship between current and classic studies in language acquisition.

**Prerequisites:** EDEC 744.

**EDRD 845 - Advanced Study of Emergent Literacy (3 Credits)**

Conceptual frameworks, findings, and connections among current and classic studies in emergent literacy; implications for further research.

**Prerequisites:** EDRD 844.

**EDRD 848 - Feminist Investigation in Literacy Education (3 Credits)**

Current theories of gender identity in relationship to literacy education.

**EDRD 850 - Internship in Language and Literacy Education (3-6 Credits)**

Placement in an agency or higher education setting to gain supervised experience in literacy program planning and/or research. May be repeated once for a total of 6 hours.

**Prerequisites:** 6 hours of required language and literacy courses in the language and literacy PhD program.

**EDRD 890 - Independent Study (3 Credits)****EDSE 500 - Equity and Community Engagement (3 Credits)**

Field-based inquiry into theories of critical multicultural education, culturally relevant and equity pedagogies with an emphasis on middle/high school students and engaging parents and the larger school community.

**EDSE 502 - Teachers and Teaching (3 Credits)**

Teaching as reflective and ethical practice. Professional standards, teacher leadership and school change, and various roles of professional educators.

**EDSE 505 - Source Materials for Geographic Instruction (3 Credits)**

Introduction to selected materials available for all levels of instruction in geography. Emphasis on the substantive nature of the materials.

**Cross-listed course:** GEOG 560

**EDSE 508 - Teaching Middle and High School (Business Education) (3 Credits)**

A study of methods, techniques, and materials of instruction in middle and high school business education.

**EDSE 528 - Study of the Teaching of Business Education in the Secondary School (3 Credits)**

Teaching techniques and methodology related to the business education curriculum, emerging technology and software.

**EDSE 547 - Teaching Middle and High School (English) (3 Credits)**

A study of methods, techniques, and materials of instruction in middle and high school English.

**Prerequisites:** Admission to MAT program for graduate students; EDSE 402 for undergraduate students.

**EDSE 548 - Earth Science for Teachers I (3 Credits)**

Origin, internal structure and internal processes of the earth, including plate tectonics, earthquakes, volcanoes, and mountain building. Required field trips, two lectures, and three lab hours per week. Cannot be used in MS or PhD programs in geology.

**Cross-listed course:** GEOL 540

**EDSE 549 - Earth Science for Teachers II (3 Credits)**

Surface processes acting on the earth; introduction to weather and climate, weathering, erosion, and sedimentary processes; land form evolution; ocean currents and tides, near-shore geologic processes. Required field trips, two lecture, and three lab hours per week. Cannot be used in MS or PhD programs in geology.

**Prerequisites:** EDSE 548/GEOL 540.

**Cross-listed course:** GEOL 541

**EDSE 550 - Teaching Middle and High School (Mathematics) (3 Credits)**

A study of methods, techniques, and materials of instruction in middle and high school mathematics.

**EDSE 551 - Teaching Middle and High School (Health) (3 Credits)**

A study of methods, techniques, and materials of instruction in middle and high school health.

**EDSE 552 - Teaching Middle and High School (Marketing Education) (3 Credits)**

A study of methods, techniques, and materials of instruction in middle and high school marketing education.

**EDSE 553 - Teaching Middle and High School (Science) (3 Credits)**

A study of methods, techniques, and materials of instruction in middle and high school science.

**EDSE 554 - Teaching Middle and High School (Theatre and Speech) (3 Credits)**

A study of methods, techniques, and materials of instruction in middle and high school theatre and speech.

**EDSE 558 - Teaching Middle and High School (History and Social Studies) (3 Credits)**

A study of methods, techniques, and materials of instruction in middle and high school history and social studies.

**EDSE 575 - Teaching Foreign Languages in Secondary Schools (3 Credits)**

Current methods, techniques, and materials of instruction appropriate for secondary schools.

**Cross-listed course:** FORL 511

**EDSE 580 - Teaching Advanced Latin in Secondary School (3 Credits)**

Methods and materials for teaching the Latin Advanced Placement courses in secondary school.

**Corequisite:** LATN 580.

**EDSE 584 - Middle and High School Internship Seminar (3 Credits)**

Classroom management, service learning, legal/professional responsibilities, multicultural perspectives and needs of exceptional children.

**Corequisite:** Internship II.

**EDSE 585 - Secondary Internship Seminar I (1 Credit)**

Integration of content, pedagogy, and disposition knowledge learned during coursework with Internship I field experiences.

**Corequisite:** Students must be enrolled in the Internship I field experiences.

**EDSE 586 - Secondary Internship Seminar II (2 Credits)**

Integration of content, pedagogy, and disposition knowledge learned during coursework with Internship II field experiences.

**Corequisite:** Students must be enrolled in the Internship II field experiences.

**EDSE 660 - Teaching Mathematics with Manipulatives, Grades 7-12 (3 Credits)**

Methods and materials for using manipulative devices to teach middle and high school level mathematics.

**EDSE 670 - Graphics Calculators in High School Mathematics (3 Credits)**

Methods and materials for using graphics calculators to teach algebra, elementary functions, and analytic geometry.

**EDSE 690 - Independent Study (1-3 Credits)****EDSE 702 - Teaching Information Management Technology (3 Credits)**

Development of curriculum and educational materials for middle and high school information technology courses; selection of equipment; techniques of teaching information management technology; practical experience with software and hardware.

**EDSE 703 - Perspectives in Teaching Secretarial Skills (3 Credits)**

Strengthening the technical competence of the business teacher. Philosophy and psychology of skill development in secretarial subjects.

**EDSE 704 - Perspectives in Teaching Bookkeeping/Accounting and Basic Business (3 Credits)**

Strengthening the technical competence of business teachers in bookkeeping/accounting and basic business, and improving instruction in these areas.

**EDSE 727 - Advanced Principles and Practices of Teaching in High School (3 Credits)**

Study of the problems involved in all teaching in the secondary school.

**EDSE 728 - Advanced Study of the Teaching of English in Secondary Schools (3 Credits)**

A study of historical developments and recent innovations in curricula, resources, and techniques in the field of teaching English in secondary schools. Students will be expected to investigate research as it relates to the improvement of instruction.

**EDSE 729 - Advanced Study of the Teaching of History and Social Studies in Secondary Schools (3 Credits)**

A study of historical developments and recent innovations in curricula, resources, and techniques in the field of teaching history and social studies in secondary schools. Students will be expected to investigate research as it relates to the improvement of instruction.

**EDSE 732 - Advanced Study of the Teaching of Science in Secondary Schools (3 Credits)**

A study of historical developments and recent innovations in curricula, resources, and techniques in the field of teaching science in secondary schools. Students will be expected to investigate research as it relates to the improvement of instruction.

**EDSE 733 - Selected Topics in Social Studies Education (3 Credits)**

Topics will be selected from various social studies education fields, including trends, methods, and materials of social studies education. May be repeated; credit up to six hours may be applied toward a degree.

**Prerequisites:** EDSE 729 or its equivalent.

**EDSE 764 - Advanced Study of the Teaching of Mathematics in Secondary Schools (3 Credits)**

A study of historical developments and recent innovations in curricula, resources, and techniques in the field of teaching mathematics in secondary schools. Students will be expected to investigate research as it relates to the improvement of instruction.

**EDSE 766 - Historical Topics in the Teaching of Mathematics (3 Credits)**

Use of the history of mathematics in middle and secondary school teaching.

**Prerequisites:** EDSE 764.

**EDSE 770 - Technology in Mathematics Education (3 Credits)**

Topics in the use of electronic technology in the teaching of mathematics at the middle and secondary school levels.

**EDSE 773 - Advanced Study of the Teaching of Computer Studies (3 Credits)**

Recommendations for materials, content, and methods for teaching computer-related subject matter at the middle and high school level. Experience in writing computer programs for educational purposes in the Logo, BASIC, and Paschal languages will be given.

**Prerequisites:** EDTE 731.

**EDSE 775A - Teaching Internship in Middle or High School (History and Social Studies) (3 Credits)**

Application of effective teaching techniques and organization of instructional settings for middle or high school students.

**Prerequisites:** acceptance to the Professional Program in Education.

**Corequisite:** EDSE 558.

**EDSE 775B - Teaching Internship in High School History and Social Studies (9 Credits)**

Application of effective teaching techniques and organization of instructional settings for high school students.

**Prerequisites:** EDSE 775A.

**Corequisite:** EDSE 584 or EDSE 784.

**EDSE 776A - Teaching Internship in Middle or High School (English) (3 Credits)**

Application of effective teaching techniques and organization of instructional settings for middle or high school students.

**Prerequisites:** acceptance to the Professional Program in Education.

**EDSE 776B - Teaching Internship in High School English (9 Credits)**

Application of effective teaching techniques and organization of instructional settings for high school students.

**Prerequisites:** EDSE 776A.

**Corequisite:** EDSE 584 or EDSE 784.

**EDSE 777A - Teaching Internship in Middle or High School (Business Education) (3 Credits)**

Application of effective teaching techniques and organization of instructional settings for middle or high school students.

**Prerequisites:** acceptance to the Professional Program in Education.

**EDSE 777B - Teaching Internship in Middle or High School (Business Education) (9 Credits)**

Application of effective teaching techniques and organization of instructional settings for middle or high school students.

**Prerequisites:** EDSE 777A.

**Corequisite:** EDSE 784.

**EDSE 778A - Teaching Internship in Middle or High School (Mathematics) (3 Credits)**

Application of effective teaching techniques and organization of instructional settings for middle or high school students.

**Prerequisites:** acceptance to the Professional Program in Education.

**EDSE 778B - Teaching Internship in High School Mathematics (9 Credits)**

Application of effective teaching techniques and organization of instructional settings for high school students.

**Prerequisites:** EDSE 778A.

**Corequisite:** EDSE 584 or EDSE 784.

**EDSE 781A - Teaching Internship in Middle or High School (Science) (3 Credits)**

Application of effective teaching techniques and organization of instructional settings for middle or high school students.

**Prerequisites:** acceptance to the Professional Program in Education.

**EDSE 781B - Teaching Internship in High School Science (9 Credits)**

Application of effective teaching techniques and organization of instructional settings for high school students.

**Prerequisites:** EDSE 781A.

**Corequisite:** EDSE 584 or EDSE 784.

**EDSE 783 - Advanced Study of the Teaching of Mathematics in the Middle or Junior High School (3 Credits)**

Historical developments and recent innovations in curricula, resources, and techniques in the teaching of mathematics in the middle or junior high school. Investigative research into the improvement in instruction.

**EDSE 785 - Seminars on Selected Topics in Foreign Language Education (3 Credits)**

Topics will be identified by title in the schedule of classes. Each topic may be taken only once.

**EDSE 786 - The Teaching of Literature in the Secondary School (3 Credits)**

Subject content of new literature programs; resources and innovative approaches; problems in organizing literature. Emphasis on specific teaching methodology and the development of materials.

**EDSE 787 - The Teaching of Composition in the Secondary School (3 Credits)**

New curricula in the teaching of oral and written composition; issues and problems in the composition phase of English programs; innovative teaching techniques and methodology. Development of materials appropriate to the teaching of oral and written composition.

**EDSE 788 - The Teaching of the English Language in the Secondary School (3 Credits)**

Recent innovations in curricula, resources, and teaching techniques for such topics as dialectology, usage, regional varieties of language, lexicography, language history and development, structural grammar, and transformational grammar.

**EDSE 789 - The English Teacher and Special Problems in Reading (3 Credits)**

Selected problems and solutions in reading at the secondary level. Ways to improve reading skills; research contributions to the improvements of instruction in reading.

**Prerequisites:** EDRD 514 or EDRD 518.

**EDSE 828 - Research in English Education (3 Credits)**

Research methodology and design in the field of English education. Interpretation of data and implications for further research. A preliminary dissertation proposal may be developed.

**EDSE 850 - Advanced Readings in Secondary Education (3 Credits)**

Analyses of select studies in the pertinent field(s) of specialization in secondary education. Consideration is given to implications for needed research in these fields.

**EDSE 851 - Advanced Reading in Mathematics Education (3 Credits)**

Selected topics in mathematics education, including teacher training, evaluation of programs and instruction, in-service programs, and the history of mathematics education. Current research in these areas with implications for needed research.

**EDSE 890 - Independent Study (3 Credits)**

**EDTE 590A - Internship in Curriculum and Assessment (3 Credits)**

Internship for practice in classrooms appropriate to the level of certification sought (early childhood or elementary) related to curriculum design and assessment.

**Prerequisites:** admission to internship II in early childhood or elementary education.

**Corequisite:** EDTE 590B and EDTE 590C.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Internships

**EDTE 590B - Internship in Teaching (3 Credits)**

Internship for practice in classrooms appropriate to the level of certification sought (early childhood or elementary) related to interactive teaching.

**Prerequisites:** admission to internship II in early childhood or elementary education.

**Corequisite:** EDTE 590A and EDTE 590C.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Internships

**EDTE 590C - Internship in Professional Roles (3 Credits)**

Internship for practice in classrooms appropriate to the level of certification sought (early childhood or elementary) related to professional roles.

**Prerequisites:** admission to internship II in early childhood or elementary education.

**Corequisite:** EDTE 590A and EDTE 590B.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Internships

**EDTE 600 - Systematic Effective Teaching (3 Credits)**

Application of research-supported effective teaching techniques to the teaching-learning process, including demonstration lessons, observations, and supervisory conferences.

**EDTE 605 - Cooperative/Team Learning in Education (3 Credits)**

Instructional approaches, materials, and procedures for utilizing cooperative/team learning in education.

**EDTE 610 - Integrated Reading and Writing Instruction (3 Credits)**

Theoretical bases and techniques for teaching reading and writing in the elementary school, using multiple subject areas.

**EDTE 611 - Whole Language: Concepts and Practices (3 Credits)**

Development of concepts, materials, and practices to implement a whole language philosophy.

**EDTE 620 - Restructuring Schools: Teachers and Classrooms (3 Credits)**

Examination of issues related to restructuring schools based on different assumptions about teaching, learning, and assessment.

**EDTE 621 - Middle Level School Today (3 Credits)**

National trends in the middle level school; emphasis on the relationship of early adolescent developmental characteristics to organization, curriculum, instruction, and teaching.

**EDTE 625 - Integrating Character Education into Instructional Programs (3 Credits)**

Rationale, processes, and methodologies for integrating character education into school or school district instructional programs.

**EDTE 626 - Service Learning for Schools, Community, and Workplace Responsibility (3 Credits)**

Assist school personnel in designing academic, personal, civic, and workplace responsibility.

**EDTE 631 - Technology to Support Instruction (3 Credits)**

Introduction to computers, educational technology, and selected applications for instructional management.

**EDTE 671 - Computers in Science Education (3 Credits)**

Use of computer technology in teaching and managing science classes and problems in grades K-12.

**EDTE 701 - Selected Topics in Teaching Science (3 Credits)**

Primarily for elementary, middle, and secondary school teachers. Teachers at other levels may be accepted.

**EDTE 710 - Developing as a Professional Educator (3 Credits)**

Concepts and strategies to assist teachers in developing as effective and successful educators in PreK through 12 schools.

**EDTE 711 - Ideas and Issues in Teaching (3 Credits)**

Examination of theoretical and philosophical concepts fundamental to understanding learning and teaching.

**EDTE 712 - Action Research in Teaching (3 Credits)**

Introduction to action research through the investigation of a significant question or issue related to teaching in PreK through 12 schools.

**Prerequisites:** EDTE 710, EDTE 711, and EDRM 700 or an approved education research course.

**EDTE 713 - Action Research Capstone Seminar (3 Credits)**

Culminating experience that includes completion of an action research project and a thorough review of professional growth.

**Prerequisites:** EDTE 712.

**EDTE 731 - Integration of Technology and Instruction (3 Credits)**

Survey of the instructional uses of computers and other technologies.

**EDTE 733 - Reading and Language Arts in Early Childhood and Elementary Education (6 Credits)**

Examination and implementation of the content, goals, and methods of teaching reading and the language arts. Emphasis on the teaching of reading, oral and written expression, and listening. K-6.

**Prerequisites:** Admission to the MAT program.

**EDTE 740 - Introduction to Project-Based Learning (3 Credits)**

Introduction to Project-based Learning theory and basics of designing, delivering and assessing it. Designed for classroom teachers who have earned an initial teaching credential or its equivalent and who wish to continue their professional development through graduate education.

**EDTE 741 - Applications of Project-Based Learning (3 Credits)**

Acquisition of experiences required to plan, create, facilitate, and integrate appropriate instructional methodologies and technology within a Project-based Learning unit of study.

**Prerequisites:** EDTE 740.

**EDTE 742 - Practicum in Project-based Learning (3 Credits)**

A field-based practicum designed to provide experience and opportunities to demonstrate knowledge, skills, and dispositions for implementing PBL into a regular classroom setting.

**Prerequisites:** EDTE 740 and EDTE 741.

**EDTE 750 - Evaluating Teacher Effectiveness (3 Credits)**

Techniques currently being used to quantitatively analyze the behavior of a teacher and his/her students while in a classroom situation.

**EDTE 755 - Teaching Environmental Education (3-6 Credits)**

Rationale and strategies for teaching environmental education.

**EDTE 759 - Teaching Reasoning and Inquiry Skills (3 Credits)**

Definition of and methods for teaching reasoning and inquiry skills in various educational settings. Participants develop a plan of instruction based on a study of model programs.

**EDTE 760 - Issues in Writing Instruction K-12 (6 Credits)**

Issues in the teaching of writing, with emphasis on classroom applications K-12 and program development.

**EDTE 771 - Studies and Internship I in Teaching Math-Early/Elementary Education (3 Credits)**

Instructional approaches, materials and methods for primary and elementary classrooms.

**Prerequisites:** Admission to the MAT program.

**EDTE 772 - Technology in Foreign Language Education (3 Credits)**

Introduction to technology in language teaching and the connection between language acquisition and the implementation of Internet and multimedia technology.

**Cross-listed course:** FORL 772, LING 772

**EDTE 774A - Teaching Internship (Foreign Languages) (3 Credits)**

Application of effective teaching techniques and organization of instructional settings in foreign languages for K-12.

**Prerequisites:** acceptance to the Professional Program in Education.

**Cross-listed course:** FORL 774A

**EDTE 774B - Teaching Internship (Foreign Languages) (9 Credits)**

Application of effective teaching techniques and organization of instructional settings in foreign languages for K-12.

**Prerequisites:** EDTE 774A.

**Corequisite:** EDSE 584.

**EDTE 776 - Educating African-American Students (3 Credits)**

An analysis of historical and contemporary factors that influence the education of African American children in the US. Emphasis on the knowledge, skills and dispositions required for educators and parents to provide an effective equitable education for African American students.

**EDTE 777 - Analysis of Effective Instructional Practices (3 Credits)**

Analysis of instructional techniques and strategies effective in fostering student achievement at various levels of schooling.

**Prerequisites:** master's degree and certification.

**EDTE 778 - Teacher as Instructional and Professional Leader (3 Credits)**

Major roles of the master teacher in instructional improvement and professional development. Emphasis on analysis and integration of instructional change and professional development classroom teaching practices.

**Prerequisites:** master's degree and certification.

**EDTE 779 - Equity Pedagogies in Teacher Education (3 Credits)**

Effects of cultural diversity on instruction with emphasis on teaching strategies and programs for multicultural student populations.

**Prerequisites:** EDTE 777, master's degree and certification.

**EDTE 779A - Teaching Internship (Theatre) (3 Credits)**

Application of effective teaching techniques and organization of instructional settings in theatre for K-12.

**Prerequisites:** acceptance to the Professional Program in Education.

**EDTE 779B - Teaching Internship (Theatre) (9 Credits)**

Application of effective teaching techniques and organization of instructional settings in theatre for K-12.

**Prerequisites:** EDTE 779A.

**Corequisite:** EDSE 584.

**EDTE 780 - Field Study Preparation Seminar (3 Credits)**

Instructional planning, including evaluation and dissemination strategies related to improvements and innovations in the classroom. Emphasis is on preparation of written instructional plan for implementation in EDTE 781 Advanced Field Study of Teaching.

**EDTE 781 - Advanced Field Study of Teaching (1-6 Credits)**

Students will conduct and report results of a field study of a selected instructional innovation as specified by an implementation plan developed in EDTE 780.

**Prerequisites:** EDTE 780.

**EDTE 782A - Teaching Internship (Health) (3 Credits)**

Application of effective teaching techniques and organization of instructional settings in health for K-12.

**Prerequisites:** acceptance to the Professional Program in Education.

**Cross-listed course:** HPEB 782A

**EDTE 782B - Teaching Internship (Health) (9 Credits)**

Application of effective teaching techniques and organization of instructional settings in health for K-12.

**Prerequisites:** EDTE 782A.

**Corequisite:** EDSE 584.

**EDTE 791 - Global Education (3 Credits)**

An examination of global issues, including the concepts of interdependence and empowerment, as organizing principles in the design of instruction for internationalizing the curriculum.

**EDTE 792 - International Perspectives of Instruction (3 Credits)**

A Comparative examination of the educational and instructional processes of select nations in a variety of instructional areas.

**EDTE 793 - Development Education (3 Credits)**

An examination of the parameters of development education in select areas of the world and its implications for educators and other development workers.

**EDTE 799 - Thesis Preparation (1-9 Credits)****EDTE 811 - Developing Integrated Curricula (3 Credits)**

Theoretical foundation of an integrated curriculum and implications for current practice.

**EDTE 820 - Principles of STEM (Science, Technology, Engineering, and Mathematics) Integration (3 Credits)**

Exploration of pedagogical practices and methodological approaches for integrating instruction across STEM disciplines.

**EDTE 841 - Genre Study: Academic Writing in Education (3 Credits)**

An overview of academic writing in Education as a genre. Emphasis on defining and critiquing the genre, and producing papers, articles, proposals and/or dissertations.

**Prerequisites:** Admission to a doctoral program in education.

**EDTE 850 - Internship in Teaching (1-3 Credits)**

Placement in an educational agency, clinical experience, or teacher education setting to gain supervised experience in teacher education. This course is repeatable for up to 9 credit hours. Six (6) hours of required courses in the Ph.D. in Teaching and Learning program and approval of doctoral advisor and field supervisor.

**EDTE 851 - Internship in Research in Teaching and Learning (1-3 Credits)**

Placement in teaching and/or learning setting to gain supervised research experience. This course is repeatable for up to 9 credit hours. Six (6) hours of required courses in the Ph.D. in Teaching and Learning program and approval of doctoral advisor and field supervisor. Professional division contract approved by instructor, advisor and department chair is required for undergraduate students.

**EDTE 857 - Advanced Critical Race Theory and Education (3 Credits)**

An advanced study of how Critical Race Theory is applied by researchers to investigate issues of racial justice. The study of race and racism is the primary lens of analysis in understanding disparities in educational, political, social and economic outcomes.

**Prerequisites:** EDFI 747

**Cross-listed course:** EDFI 857

**EDTE 870 - Seminar in Instruction and Teacher Education (3 Credits)**

Major writers, issues, and research related to instruction and teacher education.

**Prerequisites:** advanced graduate standing.

**EDTE 899 - Dissertation Preparation (1-12 Credits)**

## Early Childhood Education, M.Ed.

### Learning Outcomes

- Promoting Child Development and Learning. Candidates use their understanding of young children's characteristics and needs, and of multiple interacting influences on children's development and learning, to create environments that are healthy, respectful, supportive, and challenging for all children.
- Building Family and Community Relationships. Candidates know about, understand, and value the importance and complex characteristics of children's families and communities. They use this understanding to create respectful, reciprocal relationships that support and empower families, and to involve all families in their children's development and learning.
- Observing, Documenting, and Assessing to Support Young Children and Families. Candidates know about and understand the goals, benefits, and uses of assessment. They know about and use systematic observations, documentation, and other effective assessment strategies in a responsible way, in partnership with families and other professionals, to positively influence children's development and learning.
- Teaching and Learning. Candidates integrate their understanding of and relationships with children and families; their understanding of developmentally effective approaches to teaching and learning; and their knowledge of academic disciplines to design, implement, and evaluate experiences that promote positive development and learning for all children.
- Growing as a Professional. Candidates identify and conduct themselves as members of the early childhood profession. They know and use ethical guidelines and other professional standards related to early childhood practice. They are continuous, collaborative learners

who demonstrate knowledgeable, reflective, and critical perspectives on their work, making informed decisions that integrate knowledge from a variety of sources. They are informed advocates for sound educational practices and policies

### Essential Professional Tools for All Candidates in Advanced Programs

- Cultural Competence. Advanced program candidates demonstrate a high level of competence in understanding and responding to diversity of culture, language, and ethnicity.
- Knowledge and Application of Ethical Principles. Advanced program candidates demonstrate in-depth knowledge and thoughtful application of NAEYC's Code of Ethical Conduct and other guidelines relevant to their professional role.
- Communication Skills. Advanced program candidates possess a high level of oral, written, and technological communication skills, with specialization for the specific professional role(s) emphasized in the program.
- Mastery of Relevant Theory and Research. Advanced program candidates demonstrate in-depth, critical knowledge of the theory and research relevant to the professional role(s) and focus area(s) emphasized in the program.
- Skills in Identifying and Using Professional Resources. Advanced program candidates demonstrate a high level of skill in identifying and using the human, material, and technological resources needed to perform their professional roles and to keep abreast of the field's changing knowledge base.
- Inquiry Skills and Knowledge of Research Methods. Using systematic and professionally accepted approaches, advanced program candidates demonstrate inquiry skills, showing their ability to investigate questions relevant to their practice and professional goals.
- Skills in Collaborating, Teaching, and Mentoring. Advanced program candidates demonstrate the flexible, varied skills needed to work collaboratively and effectively with other adults in professional roles.
- Advocacy Skills. Advanced program candidates demonstrate competence in articulating and advocating for sound professional practices and public policies for the positive development and learning of all young children.
- Leadership Skills. Advanced program candidates reflect on and use their abilities and opportunities to think strategically, build consensus, create change, and influence better outcomes for children, families, and the profession.

### Degree Requirements (36 Hours)

#### Core Courses (18 Hours)

Course	Title	Credits
EDEC 608	Parent Involvement in Early Childhood Education	3
EDEC 740	The Young Child: Applying Theory and Research	3
EDEC 742	Advanced Study of Early Childhood Curricula and Program Models	3
EDEC 744	Advanced Study of Language Development and Communication Skills in Early Childhood Education	3
EDEC 750	Play Theory and Early Learning	3

EDEC 794	Leadership, Advocacy and Collaboration in Early Childhood Settings	3
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**Total Credit Hours** 18

### Specialized Requirement in Diversity (3 Hours)

Course	Title	Credits
EDTE 776	Educating African-American Students	3

**Total Credit Hours** 3

### Technology (3 Hours)

Course	Title	Credits
Select one of the following:		
EDEC 795	Technology in Early Childhood Education	3
EDTE 731	Integration of Technology and Instruction	3
Other course approved by advisor		

**Total Credit Hours** 3

### Research, Measurement, or Assessment (3 Hours)

Course	Title	Credits
Select one of the following:		
EDRM 700	Introduction to Research in Education	3
EDRM 720	Educational Measurement	3
Other course approved by advisor		

**Total Credit Hours** 3

### Related Study (9 Hours)

Must be pre-approved by advisor.

Note: No more than 6 hours of workshops, institutes, or field courses may be used in the degree program. Each candidate will successfully complete a comprehensive examination.

## Language and Literacy, M.Ed.

The M.Ed. in Language and Literacy is designed for individuals planning to be classroom teachers of literacy and other teachers who are responsible for teaching literacy. The program prepares candidates to serve as a literacy teacher, coach, or specialist in K-12 school and district settings.

### Learning Outcomes

- Foundational Knowledge. Candidates have knowledge of the foundations of reading and writing processes and instruction.
- Instructional Strategies and Curriculum Materials. Candidates use a wide range of instructional practices, approaches, methods, and curriculum materials to support reading and writing instruction.
- Assessment, Diagnosis, and Evaluation. Candidates use a variety of assessment tools and practices to plan and evaluate effective reading instruction.
- Creating a Literate Environment. Candidates create a literate environment that fosters reading and writing by integrating foundational knowledge, use of instructional practices, approaches and methods, curriculum materials, and the appropriate use of assessments.
- Professional Development. Candidates view professional development as a career-long effort and responsibility.

## Admission

In addition to The Graduate School's application requirements, applicants must submit a letter of intent. Students in the M.Ed. program will follow the program of study outlined below and are required to complete a minimum of 30 hours.

## Degree Requirements (30 Hours)

### Language and Literacy (27 Hours)

Course	Title	Credits
EDRD 714	Critical Foundations of Literacy	3
EDRD 715	Instructional Strategies for Reading	3
EDRD 716	Foundations of Reading Assessment	3
EDRD 730	Teaching Reading and Writing in the Content Areas	3
EDRD 750	Literacy Curriculum Development	3
EDRD 760	Literacy Research and Inquiry	3
EDRD 776	Coaching within Classrooms: Improving Teaching and Literacy Instruction	3
EDRD 783	Literacy Leadership and Supervision	3
EDRD 796	Teaching Reading and Writing to ESOL Learners: Theory and Practice	3

**Total Credit Hours** 27

### Research (3 Hours)

3 hours in research as approved by advisor.

### Comprehensive Assessment

The comprehensive assessment requires the student to organize and synthesize the skills, competencies, and knowledge gained in his/her coursework in the Language & Literacy Program.

## Language and Literacy, Ph.D.

The Ph.D. degree prepares students to fill positions in a wide variety of settings: higher education, schools, agencies, and private practice. Students in the language and literacy Ph.D. program take a minimum of 60 semester hours beyond their master's degree. At the end of their course work, students take a comprehensive examination, write a proposal, conduct research, compose a dissertation, and defend their work to program faculty.

### Learning Outcomes

- Foundational Knowledge. Candidates have knowledge of the foundations of reading and writing processes and instruction.
- Instructional Strategies and Curriculum Materials. Candidates use a wide range of instructional practices, approaches, methods, and curriculum materials to support reading and writing instruction.
- Assessment, Diagnosis, and Evaluation. Candidates use a variety of assessment tools and practices to plan and evaluate effective reading instruction.
- Creating a Literate Environment. Candidates create a literate environment that fosters reading and writing by integrating foundational knowledge, use of instructional practices, approaches and methods, curriculum materials, and the appropriate use of assessments.
- Professional Development. Candidates view professional development as a career-long effort and responsibility.

## Admission

In addition to The Graduate School's application requirements, applicants must submit a letter of intent.

## Degree Requirements (60 Post-Masters Hours)

### Required Courses in Language and Literacy (21 Hours)

Course	Title	Credits
EDRD 800	Literacy Education P-12	3
EDRD 801	Critical Perspective on English/Language Arts	3
EDRD 803	Pedagogical Applications of Reader Response Theory	3
EDRD 811	Cultural Perspective on Psychological and Social Foundations of Literacy Learning	3
Select three additional language and literacy courses as approved by advisor		9
<b>Total Credit Hours</b>		<b>21</b>

### Internship (6 Hours)

Course	Title	Credits
EDRD 850	Internship in Language and Literacy Education (May be repeated once for a total of 6 hours.)	6
<b>Total Credit Hours</b>		<b>6</b>

### Required Courses in Research (15 Hours)

Course	Title	Credits
EDRM 710	Educational Statistics I	3
EDRM 720	Educational Measurement	3
EDFI 731	Qualitative Inquiry	3
Select two additional courses in either quantitative or quantitative methodology		6
<b>Total Credit Hours</b>		<b>15</b>

### Electives (6 Hours)

- 6 hours of electives as approved by advisor.

### Dissertation Preparation (12 Hours)

- Select 12 hours

## Teaching and Learning, Ph.D.

The curriculum in the Ph.D. in Teaching and Learning is grounded in bodies of research that encompass the complex relationship between teaching and learning and the various disciplines at diverse grade levels. The degree consists of a minimum of 60 hours beyond the masters degree.

## Learning Outcomes

- Advanced program candidates demonstrate a high level of competence in understanding and responding to diversity of culture language and ethnicity.
- Advanced program candidates demonstrate in-depth knowledge and thoughtful application of the Code of Ethical Conduct and other guidelines relevant to their professional role.

- Advanced program candidates possess a high level of oral written and technological communication skills with specialization for the specific professional role(s) emphasized in the program. For doctoral programs candidates are prepared to publish and present at conferences.
- Advanced program candidates demonstrate in-depth critical knowledge of the theory and research relevant to the professional role(s) and focus area(s) emphasized in the program.
- Advanced program candidates demonstrate a high level of skill in identifying and using the human material and technological resources needed to perform their professional roles and to keep abreast of the field & changing knowledge base.
- Using systematic and professionally accepted approaches advanced program candidates demonstrate inquiry skills showing their ability to investigate questions relevant to their practice and professional goals.
- Advanced program candidates demonstrate the flexible varied skills needed to work collaboratively and effectively with other adults in professional roles.
- Advanced program candidates demonstrate competence in articulating and advocating for sound professional practices and public policies for the positive development and learning of all students.
- Advanced program candidates reflect on and use their abilities and opportunities to think strategically build consensus create change and influence better outcomes for student's families and the profession.
- PhD candidates demonstrate in-depth knowledge related to learning in their area of specialized expertise.
- PhD candidates demonstrate in-depth knowledge and skills related to teaching in their area of specialized expertise.

## Specialized Competencies

- PhD candidates demonstrate in-depth knowledge related to learning in their area of specialized expertise.
- PhD candidates demonstrate in-depth knowledge and skills related to teaching in their area of specialized expertise.

In addition to The Graduate School's application requirements, applicants must submit a letter of intent. Applicants who meet program criteria will be interviewed by a committee of faculty members.

## Degree Requirements (60 Post-Masters Hours)

A minimum of 60 post-masters hours required.

The total number of hours required may vary depending on prior graduate coursework completed, but must be no less than 60 graduate hours. Based on the curriculum described below, a program of study will be developed with the student's advisor and must be approved by the Graduate Director and the Dean of the Graduate School. Courses listed on the program of study must be completed no more than 10 years prior to graduation.

## Program of Study

The student's program advisory committee will evaluate previous course work and experiences and recommend appropriate courses to ensure that at the completion of the program the student can demonstrate the



knowledge, skills, and dispositions typically developed in the following course work:

### Teacher Education (21 Hours)

Course	Title	Credits
Select six hours in pedagogy courses at the 800-level within or across the content areas such as literacy, mathematics, science, language arts, the arts, and social studies		
EDTE 870	Seminar in Instruction and Teacher Education	3
Select six additional hours of advanced and doctoral (700 and 800 level) coursework involving instruction selected from below or other as approved by advisor.		
EDTE 759	Teaching Reasoning and Inquiry Skills	6
EDTE 776	Educating African-American Students	6
EDTE 779	Equity Pedagogies in Teacher Education	6
EDEL 815	Models of Instruction	6
Select six hours of advanced and doctoral (700 and 800-level) coursework in the area(s) of diversity and/or curriculum as approved by advisor		
<b>Total Credit Hours</b>		<b>21</b>

### Research (12 Hours)

Course	Title	Credits
EDRM 710	Educational Statistics I	3
EDFI 731	Qualitative Inquiry	3
Select six hours of educational research		
<b>Total Credit Hours</b>		<b>12</b>

### Internship (6 Hours)

Course	Title	Credits
EDTE 850	Internship in Teaching	1-3
EDTE 851	Internship in Research in Teaching and Learning	1-3
<b>Total Credit Hours</b>		<b>2-6</b>

### Cognate (9 Hours)

- A minimum of 9 hours must be in one area outside the Department of Instruction and Teacher Education.

### Dissertation (12 Hours)

Course	Title	Credits
EDTE 899	Dissertation Preparation	12
<b>Total Credit Hours</b>		<b>12</b>

### Foreign Language and/or Research Methods

Students must meet the Foreign Language and/or Research Methods as required by the Graduate School.

## Teaching, M.Ed.

The M.Ed. in Teaching is a 30-hour program designed for practicing teachers who have earned an initial teaching certificate or its equivalent and who wish to enhance their professional teaching practice or are seeking career advancement. The program includes a core of courses and experiences followed by continued study addressing an area of specialization.

## Learning Outcomes

- Cultural Competence.** Advanced program candidates demonstrate a high level of competence in understanding and responding to diversity of culture, language, and ethnicity.
- Knowledge and Application of Ethical Principles.** Advanced program candidates demonstrate in-depth knowledge and thoughtful application of the Code of Ethical Conduct and other guidelines relevant to their professional role.
- Communication Skills.** Advanced program candidates possess a high level of oral, written, and technological communication skills, with specialization for the specific professional role(s) emphasized in the program. For programs for the advanced preparation of teachers, candidates meet ISTE standards. For doctoral programs, candidates are prepared to publish and present at conferences.
- Mastery of Relevant Theory and Research.** Advanced program candidates demonstrate in-depth, critical knowledge of the theory and research relevant to the professional role(s) and focus area(s) emphasized in the program.
- Skills in Identifying and Using Professional Resources.** Advanced program candidates demonstrate a high level of skill in identifying and using the human, material, and technological resources needed to perform their professional roles and to keep abreast of the field's changing knowledge base.
- Inquiry Skills and Knowledge of Research Methods.** Using systematic and professionally accepted approaches, advanced program candidates demonstrate inquiry skills, showing their ability to investigate questions relevant to their practice and professional goals.
- Skills in Collaborating, Teaching, and/or Mentoring.** Advanced program candidates demonstrate the flexible, varied skills needed to work collaboratively and effectively with other adults in professional roles.
- Advocacy Skills.** Advanced program candidates demonstrate competence in articulating and advocating for sound professional practices and public policies for the positive development and learning of all students.
- Leadership Skills.** Advanced program candidates reflect on and use their abilities and opportunities to think strategically, build consensus, create change, and influence better outcomes for students, families, and the profession.

## National Board for Professional Teaching Standards

- Teachers are Committed to Students and Learning.
  - Demonstrate an understanding of students' cognitive development and the influence of context and culture.
  - Foster all students' cognitive, affective, and social/cultural development, adjusting practice to meet individual needs.
- Teachers Know the Subjects They Teach and How to Teach Those Subjects to Students.
  - Know subject(s) they teach.
  - Know students' typical understanding of subjects and how to teach subject(s).
  - Foster problem posing and solving.
- Teachers are Responsible for Managing and Monitoring Student Learning.
  - Establish disciplined learning environment and effectively engage students using a range of appropriate teaching techniques.
  - Enlist expertise of others to complement own teaching.

- c. Assess individual students and whole class using multiple measures and communicate assessment/data collection to parents.
4. Teachers Think Systematically about Their Practice and Learn from Experience.
  - a. Demonstrate an experimental and problem solving approach to teaching applying theory, research, and personal experience to making decisions of practice.
  - b. Critically examine practice on an on-going basis.
5. Teachers are Members of Learning Communities.
  - a. Work collaboratively with others, including colleagues and parents, to foster school progress and improve educational experiences in the context of the community/state and through the development of curriculum, instruction, and staff.
  - b. Use community resources to the benefit of students.

## Degree Requirements (30 Hours)

### Required Core Courses (15 Hours)

Course	Title	Credits
EDTE 710	Developing as a Professional Educator	3
EDTE 711	Ideas and Issues in Teaching	3
EDTE 712	Action Research in Teaching	3
EDTE 713	Action Research Capstone Seminar	3
Select one of the following:		3
EDRM 700	Introduction to Research in Education	
Another advisor-approved course in education research		

**Total Credit Hours** **15**

### Area of Specialization (15 Hours)

Students will select 15 hours (5 courses) in an area of specialization as approved by the advisor. An area of specialization allows candidates to acquire a broad and extensive knowledge base of curriculum, pedagogy, and PreK-12 students.

### Comprehensive Assessment

An action research project is completed as the required comprehensive assessment.

## Physical Education

Linda Nilges, *Chair*

### Admission

Regulations and requirements for admission to graduate study and graduate degree candidacy in the College of Education correspond to those of The Graduate School. In accordance with the general regulations of The Graduate School, any applicant for graduate study is required to hold a baccalaureate degree and must submit scores from either the GRE or Miller Analogies Test as listed for each program/degree. Each applicant must also obtain at least two letters of recommendation (some programs require more) from those who can clearly attest to the applicant's knowledge, skills, and dispositions relevant to the degree sought. Many programs also require a supplemental application, a letter or statement of intent, and/or an interview. Requirements are specified under each program area in this document or may be viewed, in addition to further help information here ([https://sc.edu/study/colleges\\_schools/education/apply/graduate\\_applicants.php](https://sc.edu/study/colleges_schools/education/apply/graduate_applicants.php)).

Admission decisions in the College of Education are based on multiple indicators of an applicant's potential academic success. Indicators include test scores, GPA, letters of recommendation, statement of intent, and other factors such as relevancy of prior degrees, related work experience, leadership roles, and interview performance. The profile of typical students admitted into the College of Education degree programs in fall 2006 on selected items is as follows:

For master's and educational specialist degrees:

- GRE scores of 467 verbal, 550 quantitative
- Undergraduate GPA 3.38
- Two to five years experience in the field.

For doctoral degrees:

- GRE scores of 516 verbal, 575 quantitative
- Graduate GPA 3.78
- Five years or more of experience in the field.

## Programs

The Physical Education Department offers the Physical Education, M.A.T. (P-12 Certification) in conjunction with the College of Education.

- Adapted Physical Education, M.S. (p. 277)
- Physical Education, Ph.D. (p. 277)

## Courses

### PEDU 510 - Teaching Health Related Physical Fitness (3 Credits)

Knowledge and application of processes and principles of health related physical fitness in physical education and sport settings.

**Prerequisites:** EXSC 223/EXSC 224 or BIOL 243/BIOL 244.

### PEDU 515 - Physical Education for Inclusion (3 Credits)

Designing physical education programs for special populations and for students with special needs.

**Prerequisites:** PEDU 340, PEDU 360.

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy

### PEDU 520 - Observational Analysis of Sports Techniques and Tactics (3 Credits)

Qualitative and quantitative techniques to observe, describe, analyze, and evaluate human movement in physical education and sports settings.

**Prerequisites:** PEDU 190, EXSC 223, EXSC 224 or BIOL 243, BIOL 244; PHYS 101.

### PEDU 553 - The Organization and Administration of Physical Education (3 Credits)

Organization of instructional, intramural, interscholastic, and recreational programs, with emphasis on criteria for the evaluation and selection of activities.

**Prerequisites:** 18 credits in physical education, including six semester hours of professional skill courses.

### PEDU 555 - Current Topics in Physical Education (1-3 Credits)

### PEDU 570 - Human Child/Adolescent Growth (3 Credits)

Human physical growth and development of children with emphasis on years 4 to 18.

**Prerequisites:** EXSC 223, EXSC 224, or equivalent.

**PEDU 575 - Physical Education for the Classroom Teacher (3 Credits)**

Appropriate movement experiences for children. Not available for physical education majors.

**Prerequisites:** EDTE 201.

**PEDU 577 - Dance Performance (3 Credits)**

Rehearsal, choreographic analysis, and dance performance. All components of dance production—including music, costume, lighting, and scenery—will be considered.

**Cross-listed course:** DANC 577

**PEDU 635 - South Carolina Physical Education Curriculum (3 Credits)**

Development of physical education programs using the South Carolina Physical Education Curriculum Materials.

**PEDU 637 - Advanced Theory and Techniques of Coaching Football (3 Credits)**

An intensive investigation of current theories of offensive and defensive football. Generalship, strategy, conditioning, staff utilization, film analysis, and practice organization are covered in depth.

**Prerequisites:** current responsibilities or previous experience in college or high school coaching.

**PEDU 638 - Advanced Theory and Techniques of Coaching Basketball (3 Credits)**

An intensive investigation of the latest techniques and theories of coaching basketball. Systems of offense and defense, generalship, conditioning, staff utilization, film analysis, and practice organization are covered in depth.

**Prerequisites:** current responsibilities or previous experience in college or high school coaching.

**PEDU 639 - Advanced Theory and Techniques of Coaching Track and Field Events (3 Credits)**

A thorough study of the latest techniques of coaching track and field events. Isometric, isotonic, and interval conditioning theories involving the cardiovascular and muscular systems are examined to acquaint the student with varying physiological approaches to conditioning.

**Prerequisites:** current responsibilities or previous experience in college or high-school coaching.

**PEDU 640 - Advanced Theory and Techniques of Teaching and Officiating Girls' Gymnastics (3 Credits)**

A thorough study of the latest techniques of teaching and officiating girls' gymnastics. Balance beam, vaulting, uneven bars, tumbling, dance skills and routines, and officiating methods.

**PEDU 650 - The Art and Science of Coaching (3 Credits)**

Coaching principles and application to sport programs across a variety of developmental levels.

**PEDU 660 - Counseling Student Athletes (3 Credits)**

Issues facing student athletes regarding their personal and career development beyond athletics.

**Cross-listed course:** EDCE 650

**PEDU 702 - Interpretation and Implementation of Physical Education Programs for Children (3 Credits)**

An intensive investigation of contemporary physical education programs for children.

**PEDU 703 - Conceptual Issues in Teaching Physical Education (3 Credits)**

Advanced study of current literature and research in physical education.

**PEDU 704 - Readings and Research in Physical Education Teaching and Teacher Education (3 Credits)**

Advanced study of seminal literature and research in physical education teaching and teacher education.

**Prerequisites:** PEDU 703.

**PEDU 705 - Applied Theories of Perceptual-Motor Learning in Physical Education (3 Credits)**

Analysis of theories and principles of perceptual-motor and motor development of infants and children. Emphasis is placed upon reviewing current research as it applies to the physical education setting.

**PEDU 709 - Anthropometric Measures and Their Uses (3 Credits)**

Research procedures in measuring and rating human somatic variables. Experience in taking measurements on children and adults. Discussion of instruments, rating scales, positioning subjects, locating landmarks, and attaining consistency. Consideration of reliability and relevance in use of photographs, roentgenograms, casts, and direct measures.

**PEDU 710 - Measurement and Research in Physical Education (3 Credits)**

The treatment of current theory and practice of testing, evaluation, and research in physical education, with emphasis on the methods and tools of research.

**Prerequisites:** PEDU 545.

**PEDU 715 - Introduction to Adapted Physical Education, Activity, and Sport (3 Credits)**

Focuses on content knowledge foundational to adapted physical education, activity, and sport programs in self-contained and/or itinerant settings for children with moderate to severe disabilities.

**PEDU 716 - Universal Design for Learning in General Physical Education (3 Credits)**

Focuses on knowledge and skills to design and implement an effective curriculum design, lesson planning and assessment for inclusive physical education settings.

**PEDU 717 - Practicum in Adapted Physical Education (3 Credits)**

Focuses on the techniques, methodologies, and philosophies of adapted physical education teachers.

**PEDU 720 - Theories and Principles of Motor Learning and Control: Applications for Adapted Physical Education (3 Credits)**

Focuses on the knowledge of principles/theories of learning and memory applied to motor skill acquisition with an emphasis on factors influencing and the development of successful instructional and training strategies among individuals with disabilities.

**PEDU 722 - Curriculum Development in Physical Education (3 Credits)**

Principles of physical education based upon physiology, psychology, and sociology; curriculum-making procedures; plans and regulations for the conduct of the curriculum in physical education; criteria for the evaluation and selection of activities; evaluation, measurement, and grading procedures; and the formulation of a curriculum outline for elementary, junior high, and senior high schools.

**PEDU 725 - Supervision in Physical Education (3 Credits)**

Theory and practice of supervision of student teaching practica in physical education.

**Prerequisites:** EDUC 731.

**PEDU 729 - Study of the Teaching of Physical Education (3 Credits)**

Study of the analysis of teaching applied to the development of effective teaching skills in physical education.

**PEDU 730 - Psychosocial Aspects of Athletic Performance and Injury Rehabilitation (3 Credits)**

The application of psychological principles from motivation, arousal regulation, individual differences and psychological skills for enhancing athletic performance and injury rehabilitation.

**PEDU 731 - Motor Skill Learning (3 Credits)**

Study of sensory, motor and physical processes that underlie learning and performance of motor skills commonly performed in physical education, sport and dance.

**PEDU 732 - Analysis of Instructional Behavior in Physical Activity Programs (3 Credits)**

Research-based study of strategies, delivery systems, and clinical, school, and community-based programs in physical activity.

**PEDU 741 - Readings in the Social History of Sport (3 Credits)**

Reading and discussion of the critical and analytical literature on sport history.

**Cross-listed course:** HIST 741

**PEDU 750 - Historical and Philosophical Foundations of Physical Education (3 Credits)**

A study of the historical and philosophical bases of physical education. Emphasis will be placed on the integration and application of this information to the formulation of a practical philosophy of physical education.

**PEDU 751 - Principles of Adapted Sport Coaching (3 Credits)**

An overview of teaching and training athletes with different disabilities and challenges. Program management and preparing for coaching and competition.

**Prerequisites:** PEDU 715.

**PEDU 755 - Selected Topics in Physical Education (3 Credits)**

A study of selected issues confronted in physical education programs.

**Prerequisites:** 15 hours in graduate courses in physical education.

**PEDU 770 - Research Methods in Physical Education (3 Credits)**

A study of applicable methods and tools of research in physical education and motor behavior. Provision for students to engage in original research.

**PEDU 771 - Theories and Principles of Growth and Motor Behavior: Applications for Adapted Physical Education (3 Credits)**

Focuses on knowledge of growth and motor development principles from theory and research with applications for teaching and coaching individuals with disabilities.

**PEDU 778A - Directed Student Teaching in Physical Education I (6 Credits)**

Student teaching at the elementary or secondary level combined with planning and initiation of an action research project to demonstrate knowledge, skills, and dispositions related to teaching physical education.

**Corequisite:** PEDU 778B.

**PEDU 778B - Directed Student Teaching in Physical Education II (6 Credits)**

Student teaching at the elementary or secondary level combined with completion of an action research project to demonstrate knowledge, skills, and dispositions related to teaching physical education.

**Corequisite:** PEDU 778A.

**PEDU 784 - Theory and Application of Effective Teaching Strategies in Physical Education (3 Credits)**

Study of effective teaching in physical education. Acquisition of advanced teaching skills beyond those required for basic certification.

**PEDU 788 - Action Research Project in Adapted Physical Education (3 Credits)**

Focuses on knowledge and skills to design and implement an action research project designed for self-reflective systematic inquiry and improvement of teaching in inclusive physical education settings.

**PEDU 790 - Independent Study (1-3 Credits)**

Topics to be assigned and approved by advisor, graduate director, and department head.

**PEDU 791 - Practicum in Physical Education (0-3 Credits)**

Clinical and/or field experience in a variety of settings related to or dealing with physical activity. The practicum is designed to provide the student with in-depth experiences in a particular aspect of motor skill acquisition.

**PEDU 829 - Advanced Topics in Child and Adolescent Growth and Development (3 Credits)**

An interdisciplinary study of individual (physical and psychological), environmental and task related variables as they relate to motor skill performance, physical activity participation and athlete development.

**PEDU 830 - Development of Skilled Sport Performance (3 Credits)**

Development of cognitive and motor processes necessary for skilled performance in sport.

**Prerequisites:** PEDU 730 and either PSYC 501 or PSYC 712.

**PEDU 832 - Research Practicum in Motor Learning/Motor Performance (3 Credits)**

Scientific investigation of specific research problems in motor learning/motor performance.

**PEDU 833 - Research Practicum in Physical Education (1-6 Credits)**

Designing, conducting and interpreting research studies in physical education.

**PEDU 840 - Historical and Contemporary Perspectives on the Study of Teaching and Instruction (3 Credits)**

A survey and critical analysis of the field of research on teaching and instruction.

**PEDU 841 - Seminar in Research on Teaching in Physical Education (3 Credits)**

Interpretation and critical analysis of research on selected topics on teaching and instruction in physical education.

**PEDU 850 - Research, Theory, and Practice of Teacher Education in Physical Education (3 Credits)**

Research, theory, and methods of teacher education in physical education.

**PEDU 860 - Advanced Curriculum and Philosophy in Physical Education (3 Credits)**

Curriculum theory and design in physical education; implications of major philosophical positions, developmental and learning theory, and culture on the design and implementation of physical education curriculum.

**Prerequisites:** PEDU 722.

**PEDU 870 - Promoting Integrative Youth Physical Development (3 Credits)**

Examination of the synergistic nature of various physical, behavioral and psychological factors that promote positive trajectories of health in youth and how they are promoted across childhood and adolescence in physical education.

**PEDU 899 - Dissertation Preparation (1-12 Credits)**

## Adapted Physical Education, M.S.

The masters degree in adapted physical education is designed to provide students with advanced preparation in physical education teaching for including students with disabilities into general physical education classes as well as teaching students with disabilities in self-contained classrooms. Admitted students must possess a general physical education teaching license. This degree does not lead to a teaching license.

### Learning Outcomes

- Master of Science students will demonstrate an understanding of current public health practice and how various health-related disciplines contribute to achieving public health goals.
- Master of Science students will demonstrate an understanding of the principles and practices that are used in epidemiology to examine the health status of populations and translate epidemiologic findings into public health action.
- Master of Science students will evaluate scientific literature, create a research plan and analyze original research results in order to formulate an answer to one or more research questions.
- Applied Physiology Master of Science students will demonstrate laboratory proficiency through written and practical evaluations.
- Applied Physiology Master of Science students will explain, analyze and evaluate:
  - a. physiological changes that occur during a single session of exercise,
  - b. physiological adaptations that take place with repeated exercise sessions, and
  - c. how environmental conditions influence these responses.
- Health Aspects of Physical Activity Master of Science students will explain, analyze, and evaluate the relationships between physical activity, behavior and health.
- Rehabilitation Science Master of Science students will explain, analyze, and evaluate the relationships between biomechanical, physiological, psychological and neural factors that influence learning and performance of motor skills in healthy and disabled populations.

### Admission

In addition to The Graduate School's application requirements, applicants must submit evidence of a teaching license from his/her state, a sample of expository writing to include future professional goals related to general and adapted physical education.

### Degree Requirements (30 Hours)

Successful completion of 30 graduate hours in physical education selected from the following:

Course	Title	Credits
PEDU 650	The Art and Science of Coaching	3
PEDU 710	Measurement and Research in Physical Education	3
PEDU 715	Introduction to Adapted Physical Education, Activity, and Sport	3
PEDU 716	Universal Design for Learning in General Physical Education	3
PEDU 717	Practicum in Adapted Physical Education	3
PEDU 720	Theories and Principles of Motor Learning and Control: Applications for Adapted Physical Education	3
PEDU 730	Psychosocial Aspects of Athletic Performance and Injury Rehabilitation	3
PEDU 771	Theories and Principles of Growth and Motor Behavior: Applications for Adapted Physical Education	3
PEDU 788	Action Research Project in Adapted Physical Education	3
EDEX 710	Legal Issues in Special Education	3
<b>Total Credit Hours</b>		<b>30</b>

### Comprehensive Assessment

Successful completion of a masters comprehensive assessment.

### Physical Education, Ph.D.

The doctoral program in physical education is designed to prepare individuals for academic positions in departments of physical education and/or kinesiology at universities and colleges. Concentrations are offered in physical education pedagogy and motor behavior. Individuals who complete the doctoral program should be prepared to assume leadership roles in physical education teacher education or motor behavior. This document provides information about the expectations for doctoral study, sample programs of study, and other required experiences for doctoral degree in physical education.

### Learning Outcomes

- Cultural Competence. Advanced program candidates demonstrate a high level of competence in understanding and responding to diversity of culture, language, and ethnicity.
- Knowledge and Application of Ethical Principles. Advanced program candidates demonstrate in-depth knowledge and thoughtful application of the Code of Ethical Conduct and other guidelines relevant to their professional role.
- Communication Skills. Advanced program candidates possess a high level of oral, written, and technological communication skills, with specialization for the specific professional role(s) emphasized in the program. For programs for the advanced preparation of teachers, candidates meet ISTE standards. For doctoral programs, candidates are prepared to publish and present at conferences.
- Mastery of Relevant Theory and Research. Advanced program candidates demonstrate in-depth, critical knowledge of the theory and research relevant to the professional role(s) and focus area(s) emphasized in the program.
- Skills in Identifying and Using Professional Resources. Advanced program candidates demonstrate a high level of skill in identifying and using the human, material, and technological resources needed

to perform their professional roles and to keep abreast of the field's changing knowledge base.

- **Inquiry Skills and Knowledge of Research Methods.** Using systematic and professionally accepted approaches, advanced program candidates demonstrate inquiry skills, showing their ability to investigate questions relevant to their practice and professional goals.
- **Skills in Collaborating, Teaching, and/or Mentoring.** Advanced program candidates demonstrate the flexible, varied skills needed to work collaboratively and effectively with other adults in professional roles.
- **Advocacy Skills.** Advanced program candidates demonstrate competence in articulating and advocating for sound professional practices and public policies for the positive development and learning of all students.
- **Leadership Skills.** Advanced program candidates reflect on and use their abilities and opportunities to think strategically, build consensus, create change, and influence better outcomes for students, families, and the profession.

### Specialized Competencies

- Advanced knowledge essential to the field
- Application of professional knowledge in teaching/clinical settings
- Advanced knowledge of professional knowledge and standards following graduation
- Human growth and development/human learning

### Admission Requirements

In addition to completing the Graduate School's application, individuals applying for admission for the doctoral program in physical education must submit the following information:

- a sample of expository writing to include future goals and specific research interests
- a current curriculum vitae.

Applicants recently accepted for admission scored a minimum of 146 verbal and 140 quantitative scores on the GRE, had acceptable undergraduate and graduate grade point averages, had positive letters of recommendation, and demonstrated competence in English. Most applicants had prior professional experience and visited with faculty on the Columbia campus prior to admission and/or enrollment.

### Degree Requirements (60 Post-Masters Hours)

#### Total Hours Required

Minimum of 60 hours beyond the master's degree; the degree must be completed in six years.

#### Qualifying Assessment

Written and oral assessment that must be successfully completed prior to the completion of 18 hours of 700- and 800-level course work.

#### Required Coursework

Students are expected to complete a minimum of 60 credits beyond the masters degree. The program of study committee may decide that more than 60 credits are necessary for an individual student to meet minimal expectations based on prior experiences and future professional goals.

There are at least five categories within which students will complete courses to successfully receive a Ph.D.

These five areas include the following:

1. Courses in the Department of Physical Education;
2. Research Methods;
3. Cognate;
4. Research Practica;
5. Dissertation

All doctoral students follow a similar template for selection of required course work with a focus on either physical education pedagogy or motor behavior. This template is presented below. Specific programs of study are determined by the program of study committee.

#### Physical Education Program Content (15-18 Hours)

Course	Title	Credits
Select 15-18 hours of the following:		15-18
PEDU 730	Psychosocial Aspects of Athletic Performance and Injury Rehabilitation	
PEDU 731	Motor Skill Learning	
PEDU 732	Analysis of Instructional Behavior in Physical Activity Programs	
PEDU 829	Advanced Topics in Child and Adolescent Growth and Development	
PEDU 830	Development of Skilled Sport Performance	
PEDU 840	Historical and Contemporary Perspectives on the Study of Teaching and Instruction	
PEDU 841	Seminar in Research on Teaching in Physical Education	
PEDU 850	Research, Theory, and Practice of Teacher Education in Physical Education	
PEDU 860	Advanced Curriculum and Philosophy in Physical Education	
PEDU 870	Promoting Integrative Youth Physical Development	
<b>Total Credit Hours</b>		<b>15-18</b>

#### Research Methods (15 Hours)

Course	Title	Credits
Select 15 hours of the following:		15
EDRM 710	Educational Statistics I	
EDRM 711	Educational Statistics II	
EDFI 731	Qualitative Inquiry	
PEDU 770	Research Methods in Physical Education	
EDRM 840	Advanced Qualitative Inquiry in Education	
EDRM 816	Correlational and Multivariate Methods	
EDRM 810	Design and Analysis of Experiments	
<b>Total Credit Hours</b>		<b>15</b>

#### Cognate (9-12 Hours)

#### Research Practica (3-6 Hours)

Course	Title	Credits
PEDU 832	Research Practicum in Motor Learning/Motor Performance	3
PEDU 833	Research Practicum in Physical Education	1-6
<b>Total Credit Hours</b>		<b>4-9</b>

**Dissertation (12 Hours)**

<b>Course</b>	<b>Title</b>	<b>Credits</b>
PEDU 899	Dissertation Preparation	12
<b>Total Credit Hours</b>		<b>12</b>

**Foreign Language**

Students are required to meet competency in a foreign language or in computer and/or technology skills.

**Comprehensive Exam**

Students are required to successfully complete a written comprehensive examination and an oral examination.

# COLLEGE OF ENGINEERING AND COMPUTING

College Website (<http://www.engr.sc.edu/>)

Hossein Haj-Hariri, *Dean*

Abel M. Bayoumi, *Associate Dean for Corporate Relations*

M. Hanif Chaudhry, *Associate Dean for International Programs and Continuing Education*

Csilla Farkas, *Associate Dean for Diversity, Engagement, and Inclusion*

Jed S. Lyons, *Senior Associate Dean for Academic Affairs*

Michael A. Matthews, *Vice Dean and Senior Associate Dean for Research and Graduate Studies*

Ruth B. Patterson, *Assistant Dean for Student Services*

Paul H. Ziehl, *Associate Dean for Research*

## Overview

Graduate study in the College of Engineering and Computing has two objectives: to deepen the student's knowledge in a given field of specialization and to expose the student to a broad range of educational experiences that build upon and complement the undergraduate education.

The College of Engineering and Computing offers research-based Master of Science and Doctor of Philosophy in the several disciplines. The college also offers the Master of Engineering degree, along with the Master of Health Information Technology, Master of Science in Engineering Management, and Master of Science in Technology Innovation and Entrepreneurial Engineering, as well as certificate programs in Artificial Intelligence, Cyber Security, and Railway Engineering.

## Departments and Programs

- Biomedical Engineering (<https://academicbulletins.sc.edu/graduate/engineering-computing/biomedical-engineering/>)
- Chemical Engineering (<https://academicbulletins.sc.edu/graduate/engineering-computing/chemical-engineering/>)
- Civil and Environmental Engineering (<https://academicbulletins.sc.edu/graduate/engineering-computing/civil-environmental-engineering/>)
- Computer Science and Engineering (<https://academicbulletins.sc.edu/graduate/engineering-computing/computer-science-engineering/>)
- Electrical Engineering (<https://academicbulletins.sc.edu/graduate/engineering-computing/electrical-engineering/>)
- Integrated Information Technology (<https://academicbulletins.sc.edu/graduate/engineering-computing/integrated-information-technology/>)
- Mechanical Engineering (<https://academicbulletins.sc.edu/graduate/engineering-computing/mechanical-engineering/>)
- Technology Innovation and Entrepreneurial Engineering (<https://academicbulletins.sc.edu/graduate/engineering-computing/technology-innovation-entrepreneurial-engineering-ms/>)

## Biomedical Engineering

Department Website ([https://www.sc.edu/study/colleges\\_schools/engineering\\_and\\_computing/departments/biomedical\\_engineering/](https://www.sc.edu/study/colleges_schools/engineering_and_computing/departments/biomedical_engineering/))

Biomedical Engineering degree programs at the University of South Carolina were designed and developed to train students to initiate, to integrate, to imagine and to invent new processes and new products in order to improve human health. The students who enter our programs are among the very best in the University and in the nation. Our existing faculty members, as well as faculty who we are recruiting for the programs, are all committed to helping students develop the intellectual, technological and personal skills that will allow them to thrive in academia, medicine, or industry. We anticipate that our graduates will utilize their unique education and research experience to excel in positions ranging from professors in top-ranked universities to executives in new medical device or large pharmaceutical companies.

## Fields of Specialization

Research interests of the BME faculty cover a broad field of study in the areas of biomechanics, image processing, computational medicine, medical techniques and genetic engineering. The BME program incorporates these disciplines to equip students with knowledge and technical skills needed for a lifelong career in various areas of biomedical engineering.

The college also encourages cross-disciplinary research through four centers: the Center for Electrochemical Engineering, the Center for Industrial Research, the Center for Information Technology, and the Center for Mechanics of Materials and Nondestructive Evaluation. These centers use faculty and student expertise from all departments to pursue research and development projects in areas of interest to industry, government, and academics.

## Admission Requirements

Requirements for admission to graduate degree programs in biomedical engineering (M.S., Ph.D.) include the general admission requirements of The Graduate School as well as more stringent program requirements. In general, the admissions process is highly competitive. Admissions decisions are based on the quality of the applicant's previous university-level academic work (as reflected by grade point average, or GPA), letters of recommendation (at least two letters are required for evaluation), GRE scores, and other evidence of past accomplishments.

A student may transfer a master degree from another institution if approved by the Graduate Director and major professor. The student is also allowed to transfer from an institution where no degree was obtained with the approval by both the Biomedical Engineering Program and the Graduate School. The course work must be relevant to the current degree and have content and level of instruction equivalent to that offered by the University's own graduate degree programs.

## Programs

- Biomedical Engineering, M.E. (p. 281)
- Biomedical Engineering, M.S. (p. 282)
- Biomedical Engineering, Ph.D. (p. 283)



## Courses

### **BMEN 532 - Micro/nanofluidics and Lab-on-a-Chip (3 Credits)**

Basic fluid mechanics, capillary, drop and micro/nanoparticle, electrokinetics; micropump, mixer, preconcentrator, electrophoresis, microactuator and particle manipulator; sensors for pressure, velocity, concentration, temperature in environmental monitoring/biodefence, clinical diagnostics, drug discovery/delivery.

**Prerequisites:** D or better in CHEM 112 and CHEM112L or CHEM 142; D or better in PHYS 212.

### **BMEN 537 - Bio Nano/Micro Electro-Mechanical Systems (3 Credits)**

Fundamentals of nano- and microfabrication, metrology and their applications in biomedical engineering and science. The fabrication covers photolithography, nano/microfabrication for nano/microstructures, etching and additive techniques, MEMS integration and packaging, etc. Metrology focuses on characterization of nanostructures with imaging technologies.

**Prerequisites:** D or better in CHEM 112 and CHEM 112L or CHEM 142; D or better in PHYS 212.

### **BMEN 546 - Delivery of Bioactive Agents (3 Credits)**

Routes of administration; mechanisms of drug absorption and biological barriers; pharmacokinetic modeling of drug distribution; drug excretion and biotransformation; design and evaluation of controlled release systems, targeted release systems, and responsive release systems.

**Prerequisites:** BIOL 302, CHEM 333, MATH 142.

### **BMEN 547 - Immunoengineering (3 Credits)**

Engineering approaches to study and control immune reactions and their applications in therapy and diagnostics for infectious disease, cancer, allergy, autoimmunity, and transplantation.

**Prerequisites:** C or better in BMEN 240 or BIOL 302.

### **BMEN 548 - Cardiovascular System: From Development to Disease (3 Credits)**

Survey of cardiovascular development, anatomy, physiology and pathology. Recent advances in our understanding of the basic mechanisms of congenital cardiovascular defects and cardiovascular disease. Engineering principles, detection and treatment of cardiovascular defects.

**Prerequisites:** BMEN 240 or BIOL 302.

### **BMEN 565 - Advanced Biomechanics (3 Credits)**

Mathematical and theoretical analysis of the mechanical properties and functions of soft biological tissues to include arterial vessels.

**Prerequisites:** BMEN 260 or BMEN 263.

### **BMEN 572 - Tissue Engineering (3 Credits)**

Molecular basis of bioregenerative engineering; biomaterial design; biocompatibility assessment; cell isolation and characterization; rapid prototyping, scaffold fabrication, and biofabrication; protein and gene delivery; bioreactor design; transport in biological tissues; applications of tissue engineering in regenerative medicine.

### **BMEN 589 - Special Topics in Biomedical Engineering (1-3 Credits)**

Course content varies and will be announced in the schedule of classes by title. May be repeated as topic varies.

### **BMEN 710 - Modeling and Simulation of Biomedical System (3 Credits)**

Analytical and quantitative techniques applied to engineering problems in biomedical transport, tissue mechanics, cellular and organ physiology, and control of medical devices.

**Prerequisites:** MATH 242.

### **BMEN 713 - Human Cell and Molecular Biology for Biomedical Engineers (3 Credits)**

Advanced examination of the organization and function of the cell with emphasis on the biophysical and quantitative aspects of cellular function. Emphasis will be on the biomedical engineering applications of regulation of cell division, protein transcription and translation within the cell, cellular energetics, and intracellular networks for cell signaling and cell function.

### **BMEN 720 - Transport Phenomena in Biomedical Systems (3 Credits)**

Conservation of momentum, energy, mass, physico-chemical properties of biofluids, blood rheology, circulation models and cardiovascular regulation, solute and oxygen transport in tissues, gas transport in lungs and respiratory gas exchange models, kinetics and compartmental modeling, modeling of artificial organs.

**Prerequisites:** D or better in BMEN 354.

### **BMEN 723 - Anatomy and Physiology for Biomedical Engineers (3 Credits)**

An examination of human biological structure and function from an engineering perspective. Engineering principles will be used to analyze anatomical structures and physiological functions at the tissue, organ, and systems levels.

**Prerequisites:** EXSC 224 or BIOL 244.

### **BMEN 795 - Biomedical Engineering Literature (1 Credit)**

Critical reading and literacy in the biomedical engineering discipline as it relates to students' research. Graduate Standing in the Biomedical Engineering Program.

### **BMEN 797 - Biomedical Engineering Doctoral Research (1-12 Credits)**

Individual research to be arranged with the instructor. Graduate Standing in the Biomedical Engineering Program.

### **BMEN 798 - Graduate Seminar in Biomedical Engineering (1 Credit)**

Graduate seminar on current topics in biomedical engineering. Instruction on critical analysis and communication in the discipline.

### **BMEN 799 - Biomedical Engineering Masters Thesis Preparation (1-12 Credits)**

Thesis preparation for Masters Program. Graduate Standing in the Biomedical Engineering Program. Grading: Pass/Fail.

### **BMEN 898 - Doctoral Seminar in Biomedical Engineering (1 Credit)**

Seminar for doctoral students on current biomedical engineering topics and instruction in professional preparation in the discipline. Graduate Standing in the Biomedical Engineering Program.

### **BMEN 899 - Biomedical Engineering Doctoral Dissertation Preparation (1-12 Credits)**

Dissertation preparation for the Ph.D. Program. Graduate standing in the Biomedical Engineering program.

## Biomedical Engineering, M.E. Program of Study

It is the goal of the Biomedical Engineering Program to have students, with the advice of their academic advisor, create a program of study that fits their interests while ensuring that they are well educated in the multidisciplinary area of Biomedical Engineering. All students must complete a Program of Study form during the first semester of enrollment. A Program Adjustment form must be submitted whenever it is necessary to modify the program of study.

## Bachelor's/Master's Degrees Accelerated Program

The Bachelor's/Master's Degrees Accelerated Program in Biomedical Engineering allows undergraduate students to utilize as many as twelve credits of their undergraduate degree toward their M.E. degree. Only 500-level and above courses can be used for this purpose. Although it is not necessary, it is recommended that students interested in this mechanism of transferring credits enroll in core BMEN graduate courses (BMEN 710, BMEN 713, BMEN 720, and BMEN 723) as part of B.S./M.E. studies.

## Degree Requirements (30 Hours)

The Master of Engineering (M.E.) degree in biomedical engineering (BMEN) requires 30 credit hours of graduate level work beyond the B.S. degree. Students must complete 12 hours in mandatory core BMEN courses (BMEN 710, BMEN 713, BMEN 720, and BMEN 723), 6 hours in approved BMEN core electives and 12 hours of additional approved electives. In addition to the courses, students must pass the comprehensive assessment.

## Biomedical Engineering, M.S.

### Learning Outcomes

- The graduates will be able to demonstrate knowledge in Modeling and Simulation of Biomedical Systems. Specifically, the students should be able to describe the common features of mathematical and computational models used in Biomedical Engineering and be able to explain their utility and limitations.
- The graduates shall demonstrate knowledge in Human Cell and Molecular Biology. In addition to the acquired biological knowledge, the students will be able to articulate the application of this in biomedical engineering.
- The graduates shall demonstrate knowledge in Transport Phenomena in Biomedical Systems.
- The graduates shall demonstrate knowledge in Human Anatomy and Physiology for Biomedical Engineering.
- The graduates shall be able to assemble, interpret, summarize, and communicate information extracted from the scientific literature and focused on a topic related to biomedical engineering.

### Transfer Credit

Transfer credits from a previous graduate degree program must be approved by both BME and the Graduate School. The credits must be dated within the six-year period allowed for a Master's degree. A maximum of 12 credits can be transferred from another school with a grade of B or better.

### Other Program Requirements

Students are encouraged to plan their activities so as to complete the M.S. program of study within the recommended four semesters of full-time study (not counting summers). However, currently there is no imposed maximum allowed time for the completion of the M.S. program.

## Bachelor's/Master's Degrees Accelerated Program

The Bachelor's/Master's Degrees Accelerated Program in Biomedical Engineering allows undergraduate students to utilize as many as twelve credits of their undergraduate degree toward their M.S. degree. Only

500 level and above courses can be used for this purpose. Although it is not necessary, it is recommended that students interested in this mechanism of transferring credits to enroll in core BMEN graduate courses (BMEN 710, BMEN 713, BMEN 720, and BMEN 723) as part of BS/MS studies.

## Program of Study

All students must consult with their academic advisor and complete a Program of Study form during the first semester of enrollment. A Program Adjustment form must be submitted whenever it is necessary to modify the program of study.

It is the goal of the Biomedical Engineering Program to have students, with the advice of their academic advisor, create a program of study that fits their interests while ensuring that they are well educated in the multidisciplinary area of Biomedical Engineering. To that end, all students must consult with their academic advisor and complete a Program of Study during the first semester of enrollment.

All Master's degrees require a minimum of 30 credit hours at the 500-level or above. An M.S. degree requires the successful completion of the course work described below as well as a thesis. Students earning an M.S. must have at least 7 hours of thesis preparation and only 7 hours of thesis preparation may be applied to the required 30 hours.

## Publication Requirement for M.S. Students

An educational objective for M.S. students is that they have the ability to communicate their research results through oral presentations and written publications. Consistent with this objective, an M.S. student is required to submit, based on research performed while at USC, at least one conference paper or one journal paper related to their current research topic prior to graduation.

## Master's Thesis

A thesis is required of all students seeking the M.S. degree. The student's academic advisor must approve the subject of the thesis. The Graduate School will furnish general thesis regulations upon request. Any student who wishes to use University facilities or to confer with the faculty on thesis work must be officially enrolled for thesis credit.

Students who plan to complete their Master's degree requirements during the summer must submit their thesis in sufficient time to ensure the approval and signature of the final draft and its delivery to the Graduate School, twenty (20) days prior to the end of the second summer session. The student should anticipate the absence of the professor for at least part of the summer. Information on the fees associated with the thesis submission is available in the Master's Thesis Guidelines or from the Graduate School.

## Thesis Committee

A student's M.S. Thesis Committee must consist of two faculty members, one of whom should be a BMEN faculty member. In addition to the two committee members, one designated graduate committee representative should be present at the time of examination.

## Thesis Presentation and Defense

The thesis presentation is to be open to all members of the University community and guests. During the Fall and Spring semesters, the presentation and defense are to be conducted during normal business

hours and on a day that faculty are expected to be on campus. The Graduate Director must approve the date and time of presentations given during the summer sessions.

At least 7 days prior to the thesis presentation and defense, the student must submit a printed copy of a complete thesis to the two members of the thesis committee and the Graduate Director. At least 14 days prior to the presentation and defense, a notice consisting of presentation title, abstract, time, place, and the names of the thesis committee advisors to be delivered to the Graduate Director. The notice is to be approved by the Graduate Director, dated and placed in the student's file. Using the information supplied, the Graduate Studies Committee will publicize the thesis and defense.

A Graduate Studies Committee representative will attend the presentation and defense. This representative will be selected by the Graduate Studies Committee and will be a faculty member who is not part of the student's thesis committee. This representative will report to the Graduate Studies Committee the results of the presentation and defense.

## Graduation

Within 15 days after the beginning of the semester of graduation, the student should submit an Application for Degree Form to the Graduate School. Dates for submission for each term are published by the USC Registrar's Office (<http://registrar.sc.edu/html/graduation/>). If a student fails to meet the requirements for graduation, a new application must be submitted for the subsequent graduation term.

## Degree Requirements (30 Hours)

The Master of Science (M.S.) degree in biomedical engineering (BMEN) requires 30 credit hours of graduate level work beyond the B.S. degree. Students must complete of 12 hours in core BMEN courses core BMEN courses (BMEN 710, BMEN 713, BMEN 720, and BMEN 723), 9 hours in BMEN or other approved electives, 1 hour in BMEN 795 seminar, 1 hour in BMEN 798 seminar, and 7 hours of BMEN 799, thesis preparation. The student must write and defend a thesis. The completed thesis must be submitted electronically with appropriate signatures to the Dean of the Graduate School.

## Biomedical Engineering, Ph.D.

### Learning Outcomes

- Graduates will be able to identify and explain fundamental concepts in the following core courses:
  - BMEN 710—Modeling and Simulation of Biomedical Systems
  - BMEN 713—Human Cell and Molecular Biology for Biomedical Engineering
  - BMEN 720—Transport Phenomena in Biomedical Systems
  - BMEN 723—Anatomy and Physiology for Biomedical Engineering
- In addition to acquiring foundation knowledge (represented by the core courses), students will be able to integrate driving concepts in each course and most importantly articulate/practice the multidisciplinary approach inherent to Biomedical Engineering.
- Graduates should be able to explain the tools and techniques associated with mathematical modeling and simulation of biomedical systems, concepts in molecular, cell, and systems level biology, and transport phenomena.
- Students will prepare and deliver scientific presentations.

## Other Program Requirements

Each Ph.D. student must select a research advisor during the first semester after admission to the doctoral program. After a Ph.D. student passes the admission to candidacy examination, an advisory committee of no less than four members will be selected. The committee must include the department chair and one outside member. A student Advisory Committee also serves as the students' Comprehensive Exam Committee, Dissertation Committee and Dissertation Examination Committee.

## Qualifying Exam

The purpose of the Ph.D. qualifying exam is for a Ph.D. student to demonstrate his/her qualification to pursue the Ph.D. degree program. Prior to admission to candidacy, the student is required to pass a written qualifying examination. This examination is designed to test fundamental knowledge and conceptual understanding of the mainstream areas of biomedical engineering as presented through the core BMEN courses.

If the exam committee determines that a student is not qualified to pursue the Ph.D. degree program, then the student cannot continue in the Ph.D. degree program but may apply for entrance into the M.S. degree program in the Biomedical Engineering Program. A student may re-apply for the Ph.D. degree program:

1. after completing an M.S degree or
2. after not being enrolled as a USC biomedical engineering student for two years.

## Admission to Candidacy

The dean of The Graduate School admits a student to doctoral candidacy after the student has:

1. passed the Ph.D. qualifying exam;
2. been fully admitted to the doctoral degree program; and
3. filed an approved doctoral program of study with The Graduate School.

The Graduate School will notify the student and the graduate director of the admission to candidacy. Completion of all three components of the admission to candidacy procedure should be at least one full academic year before granting of the degree.

## Comprehensive Exam

The Ph.D. Comprehensive Exam for the Biomedical Engineering Program is to consist of both a written and oral parts. The examination is to be conducted by the student's Comprehensive Exam Committee. The examination is to focus on the student's proposed dissertation work. The student is to prepare a written dissertation proposal that will include background information, literature review, and proposed work. This written dissertation proposal will be considered the students written examination and will be delivered to the examination committee no less than 7 days prior to the oral portion of the exam. The oral portion of the examination will consist of a 30 to 45 minute presentation of the proposed work followed by questions from the attendees. The presentation is to be open to all members of the University community and guests. After questions are complete from the general audience all non-faculty guests will be asked to leave the room. The remaining faculty may ask question of the candidate on any subject related to the proposed

work. The presentation is to be conducted during normal business hours and on a day on which faculty members are expected to be on campus.

At least 14 days prior to the oral portion of the examination, a notice consisting of a presentation title, abstract, time, place, name of student's advisor, and names of the student's Comprehensive Examination Committee members is to be delivered to the BME Graduate Director. The notice is to be approved by the Graduate Director and a copy of the notice placed in the student's file. Using the information supplied, the Graduate Studies Committee will publicize the oral portion of the examination.

The Graduate Studies Committee will appoint a BMEN faculty member who is not part of the student's comprehensive exam committee to serve as the Graduate Studies Committee Representative. This representative will observe at the student's comprehensive exam and report the results of the exam to the Graduate Studies Committee.

Within 7 days after completion of the student's exam, the examination committee and the committee representative will inform the Graduate Studies Committee of the examination committee's assessment of the student's performance on the exam. The examination committee shall recommend one of the following options:

1. the student's proposal is satisfactory,
2. the student's proposal is unsatisfactory but only minor revisions are needed or
3. the student's proposal is unsatisfactory and major revisions are needed.

In the case of option 2), the student must revise the proposal to the satisfaction of the examination committee. Once the revisions are completed to the satisfaction of the examination committee the student will have passed the exam. In the case of option 3), the student will have one year to retake the exam. The student must complete both the written and oral portions. If a student's performance is unsatisfactory and major revisions are needed again, then the student will be removed from the Ph.D. program.

Passage of the exam is required at least 12 calendar months prior to graduation. A student must attempt the examination within 24 months (36 months for APOGEE students) after enrolling in the Ph.D. degree program. The student must successfully pass the exam within 36 months (48 months for APOGEE). Any student who does not pass the examination within the specified time limit cannot continue in the Ph.D. program.

A student may appeal to the Graduate Studies Committee for a 12-month extension. This appeal must include reasons for the student not completing the exam on time, the plan for the student to complete the exam within 12 months, and endorsement from the student's dissertation committee.

## Publication Requirement

An educational objective for Ph.D. students is that they have the ability to communicate their research results through oral presentations and written publications. Consistent with this objective, a Ph.D. student is required to submit, based on research performed while at USC, at least one accepted journal publication prior to graduation.

## Doctoral Dissertation

No later than five years after the Comprehensive Exam, the student must present a dissertation based on research that has been approved by the student's Dissertation Committee and the Dean of the Graduate School.

Information on the fees associated with dissertation submission is available in the Doctoral Dissertation Guidelines or from the Graduate School. During the preparation of the dissertation, any student who wishes to use University facilities or to confer with the faculty on dissertation work must be officially enrolled for dissertation credit. Registration for a minimum of 12 credits in Dissertation Preparation is required of all doctoral candidates.

## Residency

At least three years of the Ph.D. program must be spent on the Columbia campus of the University of South Carolina and all must be within eight years of the date at which the degree is to be granted.

Residency on the Columbia campus after admission to a doctoral program can be fulfilled by successful completion of two consecutive semesters of 9 or more graduate credits per semester, or three consecutive semesters of 6 or more graduate credits per semester. Enrollment in a summer term (both sessions) may be counted as equivalent to a semester, but enrollment in summer is not required to maintain continuity. Of the 18 hours, only 12 may be Dissertation Preparation (899).

The intent of the residency requirement is to ensure that doctoral students benefit from and contribute to the complete spectrum of educational and professional opportunities provided on the campus of a comprehensive university. When establishing residency, the student should interact with faculty and peers by regularly attending courses, conferences, and seminars, and utilize the library and laboratory facilities provided for graduate education.

## Maximum Time Allowed

Ph.D. students are expected to complete the degree requirements within four years from the time of admission. Although there is no imposed maximum time for completion of the program, students are strongly encouraged to complete their programs in less than eight years. Extension of the program beyond this limit may cause curriculum complications.

## Transfer Credit

A student may transfer a master degree from another institution if approved by the Graduate Director and major professor. The student is also allowed to transfer 12 hours from an institution where no degree was obtained with the approval by both the Biomedical Engineering Program and the Graduate School. The course work must be relevant to the current degree and have course content and level of instruction equivalent to that offered by the University's own graduate degree programs.

## Program of Study

Prior to taking the Ph.D. qualifying exam, the student, in cooperation with the student's Academic Advisor, must complete the Ph.D. Program of Study Form. This form lists courses to be taken, courses to be transferred to USC, and courses already taken at USC.

## Dissertation Presentation and Defense/ Examination

The dissertation presentation is to be open to all members of the University community and guests. During the Fall and Spring semesters, the presentation and defense is to be conducted during normal business hours and on a day that faculty are expected to be on campus. The Graduate Director must approve the date and time of presentations given during the summer sessions.

At least 14 days prior to the presentation and defense, a notice consisting of presentation title, abstract, time, place, name of student's advisor, and names of the student's Dissertation Examination Committee members is to be delivered to the Graduate Director. The notice is to be approved by the Graduate Director and a copy of the notice placed in the student's file. Using the information supplied, the Graduate Studies Committee will publicize the dissertation and defense.

At least 7 days prior to the presentation and defense, the student must deliver a printed copy of the complete dissertation to members of the student's Dissertation Examination Committee and to the Graduate Director.

The Graduate Studies Committee will appoint a Biomedical Engineering Program faculty member who is not part of the student's dissertation committee to serve as the Graduate Studies Committee Representative. This representative will observe at the student's dissertation presentation and defense and will report to the Graduate Studies Committee the results of the presentation and defense.

Immediately following the dissertation presentation, the student must orally defend the dissertation before their Dissertation Examination Committee and other members of the Biomedical Engineering Program Graduate Faculty. This dissertation exam is primarily concerned with evaluation of the student's dissertation and understanding in the student's area of specialization. The exam will be interpreted as pass or fail. Students who fail the exam may be allowed to correct the dissertation and/or re-stand the oral examination, depending upon the decision of their Dissertation Examination Committee. A student who is not granted a re-examination or does not properly correct the dissertation may not receive a Ph.D. degree in the Biomedical Engineering Program.

## Graduation

Within 15 days after the beginning of the semester of graduation, the student should submit an Application for Degree Form to the Graduate School. Dates for submission for each term are published by the Graduate School. If a student fails to meet the graduation requirements, a new application must be submitted for the subsequent term.

## Degree Requirements (60 Post-Baccalaureate Hours)

Requirements for the Ph.D. degree in biomedical engineering fall into four categories: course requirements, the qualifying examination, the comprehensive examination, and the doctoral dissertation. Additionally, students must submit at least three papers for publication in peer-reviewed technical journals prior to graduation.

The Ph.D. degree in biomedical engineering requires 60 credit hours of graduate level work beyond the B.S. degree. Students who enter the program with a bachelor's degree must complete:

### Core BMEN Courses (12 Hours)

Course	Title	Credits
BMEN 710	Modeling and Simulation of Biomedical System	3
BMEN 713	Human Cell and Molecular Biology for Biomedical Engineers	3
BMEN 720	Transport Phenomena in Biomedical Systems	3
BMEN 723	Anatomy and Physiology for Biomedical Engineers	3
<b>Total Credit Hours</b>		<b>12</b>

### BMEN or Other Approved Electives (15 Hours)

#### Seminar (3 Hours)

Course	Title	Credits
BMEN 795	Biomedical Engineering Literature	1
BMEN 798	Graduate Seminar in Biomedical Engineering	1
BMEN 898	Doctoral Seminar in Biomedical Engineering	1
<b>Total Credit Hours</b>		<b>3</b>

#### Research (18 Hours)

Course	Title	Credits
BMEN 797	Biomedical Engineering Doctoral Research	1-12

#### Dissertation Preparation (12 Hours)

Course	Title	Credits
BMEN 899	Biomedical Engineering Doctoral Dissertation Preparation	12
<b>Total Credit Hours</b>		<b>12</b>

## Chemical Engineering

Department Website (<http://www.che.sc.edu/>)

John W. Weidner, *Chair*

The Department of Chemical Engineering offers research-oriented graduate study programs leading to the Master of Science and Doctor of Philosophy degrees in chemical engineering, as well as a program for professional development culminating in the Master of Engineering degree in chemical engineering. In addition, the department collaborates with the Department of Mechanical Engineering to offer Master of Science and Doctor of Philosophy degrees in biomedical engineering. Degree requirements for biomedical engineering are listed under the college offerings.

Advanced course work in chemical engineering has three objectives: to give students a solid foundation in core concepts at the graduate level, to prepare students for independent research in a field of specialization, and to expose students to a broad range of knowledge in chemical engineering and allied disciplines. The M.S. and Ph.D. programs emphasize independent research leading to the submission of a thesis or dissertation and publication of results in peer-reviewed technical journals. Students in the M.E. program may, at their option, propose a program of independent study, supervised by a faculty member, that may replace up to six hours of lecture courses.

In all cases, students should prepare and receive approval of a formal program of study that lists the specific courses to be used for their degree. In addition, proposals for independent study as a part of the M.E. degree program must be reviewed and approved by the faculty of the department before the work is initiated. Programs of study and plans for

independent study and research should be developed in collaboration with the graduate director or the student's research advisor.

Graduates from the Department of Chemical Engineering readily find entry-level employment in engineering research, development, management, marketing, sales, production, and design. Recent graduates have assumed positions in industry, government service, and academe.

## Fields of Specialization

The research interests of the faculty span all of the traditional core areas of chemical engineering and extend into many frontiers. Ongoing research may be found in fluid mechanics, heat and mass transfer, separations, kinetics and reactor design, process control, and process design. Building upon this traditional core, the department has developed more specialized research strengths in electrochemical and corrosion engineering, advanced materials, environmentally conscious manufacturing, and molecular simulations. A complete description of the current research interests of the faculty may be found in the department's brochure or on its Web page, located at <http://www.che.sc.edu>.

## Accelerated B.S.E./Master's Education Plans

The accelerated B.S.E./master's plans in chemical engineering allows students to complete both the B.S.E. degree and a master's degree in chemical engineering in as few as five years. The use of dual credit—courses that can be used toward both degrees—enables acceleration of the program, reducing the total enrollment of the student by one semester.

Chemical engineering students may apply for approval of an accelerated education plan in the semester in which they will complete 90 hours of undergraduate course work. In addition, students must have a sufficient foundation in chemical engineering course work to enable them to take graduate-level courses. University and department regulations stipulate that applicants must have a minimum GPA of 3.40, both overall and in chemical engineering courses. Students may apply by submitting an accelerated education plan, an application for senior privilege, and a copy of a Graduate School application to the graduate director in chemical engineering. The dean of The Graduate School has final authority for approving accelerated education plans.

Only graduate-level courses (numbered 500 and above) may be used for dual credit. No more than nine credit hours may be used as dual credit. The graduate courses used for dual credit must be taken during the student's final undergraduate year. The student graduates with the B.S.E. degree after completing the B.S.E. degree requirements. At that time, the student is admitted to the graduate program with up to nine hours of graduate credit.

## Admission Requirements

Requirements for admission to graduate degree programs in chemical engineering (M.E., M.S., Ph.D.) conform to the general regulations of The Graduate School, as well as more stringent departmental requirements as described below. In general, the admissions process is highly competitive. Admissions decisions are based on the quality of the applicant's previous university-level academic work (as reflected by grade point average), letters of recommendation, GRE scores, and other evidence of past accomplishments.

For admission to the M.E., M.S., and Ph.D. programs in chemical engineering, applicants normally hold the B.S. degree in chemical

engineering from an accredited engineering program. Students holding B.S. degrees may apply for direct admission to the doctoral program; it is not necessary to complete a master's degree first. Applicants with degrees (B.S. or higher) in other engineering disciplines or chemistry may be admitted with additional remedial course requirements in chemical engineering at the undergraduate level. The required remedial courses will typically include the prerequisites to required graduate courses and may include additional undergraduate courses in chemical engineering, mathematics, and chemistry. The detailed specification of course requirements and substitutions of courses from other universities will be considered on a case-by-case basis.

For all applicants: GRE scores must be submitted by all applicants seeking financial aid, and are normally expected from all applicants. International applicants must also submit TOEFL or the IELTS Intl. Academic Course Type 2 exam scores. All applicants should submit a statement of purpose (or similar essay) that describes the applicant's background, research interests, and whether or not financial aid is required. Students admitted to the Ph.D. degree program usually receive financial aid. However, the department does not normally provide financial aid to students in the M.E. or M.S. degree programs.

## Programs

- Chemical Engineering, M.E. (p. 288)
- Chemical Engineering, M.S. (p. 288)
- Chemical Engineering, Ph.D. (p. 289)

## Courses

### ECHE 520 - Chemical Engineering Fluid Mechanics (3 Credits)

Multi-phase pressure drop, phase contacting, flow through porous media, fluidization, mixing, and turbulence.

**Prerequisites:** ECHE 320 or ENCP 360.

### ECHE 521 - Computational Fluid Dynamics for Engineering Applications (3 Credits)

Introduction to the use of computational fluid dynamics codes to analyze flow, heat, and mass transfer problems of practical engineering applications.

**Prerequisites:** ECHE 320 or EMCH 360 or ECIV 360 or ENCP 360 or AESP 265.

### ECHE 530 - Intermediate Chemical Engineering Kinetics (3 Credits)

Intermediate concepts of chemical kinetics, batch and flow reactors, catalysts and reactor design, including non-ideal systems.

**Prerequisites:** C or better in ECHE 311.

**Prerequisite or Corequisite:** D or better in ECHE 321.

### ECHE 540 - Intermediate Separation Process Design (3 Credits)

Intermediate level design of stagewise chemical separation cascades; analysis of binary and ternary systems; multicomponent separations, plate and column specification procedures; distillation, crystallization, extraction, and leaching.

**Prerequisites:** C or better in ECHE 300.

**Prerequisite or Corequisite:** D or better in ECHE 311.

**ECHE 550 - Chemical-Process Dynamics and Control (3 Credits)**

Fundamental physical and chemical principles in mathematically modeling the dynamic response of chemical processes; feedforward and feedback control systems; design of control schemes for selected chemical processes.

**Prerequisites:** C or better in ECHE 300 and MATH 242; D or better in ECHE 456.

**ECHE 567 - Process Safety, Health and Loss Prevention (3 Credits)**

Reliability, availability, and fault-tree analyses, risk indices, hazard evaluation, vapor cloud modeling, toxicology, material safety classification and regulations, individual/corporate ethical responsibilities.

**Prerequisite or Corequisite:** ECHE 466.

**ECHE 571 - Corrosion Engineering (3 Credits)**

Basic principles of corrosion engineering developed from a chemical engineering approach to thermodynamics, kinetics, mass transfer, and potential theory.

**Prerequisites:** ECHE 311.

**ECHE 572 - Polymer Processing (3 Credits)**

Industrial polymers with emphasis on their characterization and on the modeling of the major polymer fabrication processes.

**ECHE 573 - Next Energy (3 Credits)**

An examination of energy technologies that will enable society to move from an economy based on fossil fuels to one based on sustainable energy.

**ECHE 574 - Combustion (3 Credits)**

Fundamental process and applications related to the broad field of combustion and energy generation including emissions control technologies.

**Prerequisites:** ECHE 430.

**ECHE 589 - Special Advanced Topics in Chemical Engineering (3 Credits)**

Course content varies and will be announced in the schedule of classes by title. May be repeated as topic varies.

**ECHE 700 - Chemical Process Analysis (3 Credits)**

Quantitative analysis of industrial chemical operations. Equilibrium relations, material and energy balances, and reaction kinetics principles are used to analyze a variety of chemical processes and systems.

**ECHE 709 - Selected Topics in Industrial Stoichiometry (3 Credits)**

Special topics in industrial stoichiometry with emphasis on current research.

**ECHE 710 - Advanced Chemical Engineering Thermodynamics (3 Credits)**

Mass, energy, and entropy balance analysis of complex systems; evaluation of thermodynamic property changes of pure materials; solution thermodynamics of single-phase multicomponent systems; phase and chemical reaction equilibrium.

**Prerequisites:** ECHE 311.

**ECHE 719 - Selected Topics in Chemical Engineering Thermodynamics (3 Credits)**

Special topics in chemical engineering thermodynamics with emphasis on current research.

**ECHE 720 - Advanced Fluid Flow Analysis (3 Credits)**

Theory and application of fluid flow phenomena; momentum equations, conformal mapping, empirical methods, boundary layers, dimensional analysis.

**Prerequisites:** ENCP 360 and MATH 242.

**ECHE 721 - Advanced Heat Flow Analysis (3 Credits)**

Theory and application of heat flow phenomena; classical techniques and finite-difference numerical methods; conduction, convection, radiation, boiling.

**Prerequisites:** ECHE 321 and ECHE 720.

**ECHE 722 - Advanced Mass Transfer (3 Credits)**

Diffusive and convective mass transfer. Applications of the Stefan-Maxwell equations, prediction of diffusion coefficients, convective mass transport, correlations for mass transfer coefficients, and combined mass transfer and reaction modeling.

**Prerequisite or Corequisite:** ECHE 720.

**ECHE 725 - Rheology (3 Credits)**

Rheological characteristics of viscous, elastic, viscoelastic, and plastic substances; non-Newtonian fluid flow, viscometry, and rheogoniometry; rheological equations of state; engineering applications.

**ECHE 728 - Selected Topics in Fluid Mechanics (3 Credits)**

Special topics in fluid mechanics with emphasis on current research.

**ECHE 729 - Selected Topics in Heat and Mass Transfer (3 Credits)**

Special topics in heat and mass transfer with emphasis on current research.

**ECHE 730 - Chemical Reactor Design (3 Credits)**

Optimum temperature sequencing. Modeling of non-ideal reactors. Theories of catalysis with emphasis on the rate of diffusion. Interpretation of experimental catalytic data and use of these data in reactor design.

**ECHE 739 - Selected Topics in Kinetics and Reactor Design (3 Credits)**

Special topics in kinetics and reactor design with emphasis on current research.

**ECHE 740 - Distillation (3 Credits)**

Analytical, shortcut, and computer techniques for plate contacting of multicomponent systems. Review of binary separations, V-L-E models, azeotropic and extractive distillation, effects of non-key components, computational schemes, and convergence criteria.

**ECHE 741 - Liquid-Liquid Extraction (3 Credits)**

Principles of modeling liquid-liquid extraction cascades. Evaluation of L-L-E, ternary systems, design applications for hydrometallurgical systems, interlinked cascade structures for multiple solute systems, efficiency of process equipment, and synergism.

**ECHE 742 - Adsorption Fundamentals and Processes (3 Credits)**

Advanced principles of adsorption and adsorption processes including adsorbents, thermodynamics, kinetics, fixed bed adsorption and cyclic adsorption processes.

**ECHE 749 - Selected Topics in Separations (3 Credits)**

Special topics in separations with emphasis on current research.

**ECHE 750 - Process Dynamics and Control (3 Credits)**

Advanced topics in chemical process dynamics and control. Multivariate analysis, system identification, sampling, optimal process control.

**Prerequisites:** ECHE 550.

**ECHE 759 - Selected Topics in Process Control (3 Credits)**

Special topics in process control with emphasis on current research.

**ECHE 769 - Selected Topics in Chemical Engineering Design (3 Credits)**

Special topics in chemical engineering design with emphasis on current research.

**ECHE 770 - Electrochemical Engineering (3 Credits)**

Electrochemical engineering principles developed from thermodynamic, kinetic, mass transfer, and potential theory. Numerical analysis and design of electrochemical systems. Statistical analysis of experimental data and industrial experimental designs.

**ECHE 771 - Corrosion Engineering (3 Credits)**

Corrosion engineering principles developed from thermodynamic, kinetic, mass transfer, and potential theory. Numerical analysis of corroding systems, statistical analysis of experimental data, and industrial experimental designs.

**ECHE 772 - Principles of Polymer Systems (3 Credits)**

Theory and applications of polymer systems. Structure, physical properties, rheological, and mechanical behavior of polymers. Polymerization reactions and industrial polymerization processes. Fabrication techniques.

**ECHE 789 - Selected Topics in Chemical Engineering (3 Credits)**

Approved for special topic offerings.

**ECHE 797 - Research (1-12 Credits)**

Individual research to be arranged with instructor.

**ECHE 798 - Graduate Seminar in Chemical Engineering (1-2 Credits)**

Seminar on current topics in chemical engineering. Includes oral presentations by students on research projects.

**ECHE 799 - Thesis Preparation (1-12 Credits)**

To be arranged by candidates for the master's degree with the thesis advisor.

**ECHE 865 - Chemical Process Safety and Loss Prevention (3 Credits)**

Chemical process quantitative risk analysis, consequence modeling, risk estimation, and hazards assessment; design principles including inherent safety and mitigation techniques; elements of process safety management.

**Prerequisites:** ECHE 720.

**ECHE 899 - Dissertation Preparation (1-12 Credits)**

## Chemical Engineering, M.E.

### Learning Outcomes

- Graduates of the ME program will acquire and demonstrate expertise in the core subject areas of chemical engineering, which are chemical process analysis, thermodynamics, fluid flow analysis and mass transfer.
- Graduates of the ME program will acquire a working knowledge of various areas of chemical science and technology and in allied fields, including other engineering disciplines, business, the sciences, and/or mathematics. They will successfully complete three elective courses - these courses will be approved by their advisors and the Graduate Director.
- Graduates of the ME program will be made aware, through attendance at seminars and conferences, of advances at the frontiers of knowledge in chemical science and technology.
- Graduates of the ME program will acquire the basic skills needed for life-long learning and professional development.

## Degree Requirements (30 Hours)

### Core Courses (12 Hours)

Course	Title	Credits
ECHE 700	Chemical Process Analysis	3
ECHE 710	Advanced Chemical Engineering Thermodynamics	3
ECHE 720	Advanced Fluid Flow Analysis	3
ECHE 722	Advanced Mass Transfer	3

**Total Credit Hours** 12

### Six Additional Lecture Courses (18 Hours)

Two of the six additional courses (6 hours) must be chemical engineering lecture courses, and the remaining four courses (12 hours) may be from business, chemistry, engineering, or mathematics. A program of independent study (ECHE 797, three or six credit hours) may be substituted for one or two of the remaining four lecture courses. At least five of the lecture courses (15 hours) required for the Master of Engineering degree must be numbered 700 and above. Proposals for programs of independent study must be submitted and approved by the faculty of the department before the work is initiated.

### Advisement

The graduate director serves as the academic advisor for M.E. students.

### Comprehensive Examination

Each M.E. candidate must pass a comprehensive examination before graduation. Students should consult the graduate director for information on the format and subjects of the comprehensive examination.

Note: No foreign language is required for any graduate degree in chemical engineering. Additional requirements follow.

## Chemical Engineering, M.S.

### Learning Outcomes

- Graduates of the MS program will acquire and demonstrate expertise in the core subject areas of chemical engineering, which are chemical process analysis, thermodynamics, fluid flow analysis and mass transfer.
- Graduates of the MS program will acquire a working knowledge of various areas of chemical science and technology and in allied fields, including other engineering disciplines, business, the sciences, and/or mathematics. They will successfully complete three elective courses - these courses will be approved by their advisors and the Graduate Director.
- Graduates of the MS program will be made aware, through attendance at seminars and conferences, of advances at the frontiers of knowledge in chemical science and technology.
- Graduates of the MS program will acquire the ability to identify pertinent research problems, to formulate and execute a research plan, to generate and analyze original research results, and to communicate those results through oral presentations and written publications submitted to refereed archival journals.
- Graduates of the MS program will acquire the basic skills needed for life-long learning and professional development.



## Degree Requirements (30 Hours)

### Core Courses (12 Hours)

Course	Title	Credits
ECHE 700	Chemical Process Analysis	3
ECHE 710	Advanced Chemical Engineering Thermodynamics	3
ECHE 720	Advanced Fluid Flow Analysis	3
ECHE 722	Advanced Mass Transfer	3
<b>Total Credit Hours</b>		<b>12</b>

### Four Additional Lecture Courses (12 Hours)

Two of the additional four courses (6 hours) must be from chemical engineering, and the other two (6 hours) may be from chemistry, engineering, or mathematics. The student's research advisor specifies these courses after discussion with the student. Independent study (ECHE 797) cannot be used in place of lecture courses for the M.S. degree.

### Thesis Preparation (6 Hours)

Course	Title	Credits
ECHE 799	Thesis Preparation	6
<b>Total Credit Hours</b>		<b>6</b>

### Additional Requirements

Each M.S. student must select a research advisor during the first semester after admission. In addition, an advisory committee of no less than three members will be selected. The committee, which must include the department chair, conducts the comprehensive examination and reviews the student's thesis. Prior to graduation, each M.S. student must submit at least one paper for publication in a peer-reviewed technical journal. For the comprehensive examination, the M.S. student's research results are presented orally before an audience that includes the advisory committee. Other requirements pertaining to the final submission of the thesis conform to the general regulations of The Graduate School.

Note: No foreign language is required for any graduate degree in chemical engineering. Additional requirements follow.

## Chemical Engineering, Ph.D.

### Learning Outcomes

- Students will acquire and demonstrate expertise in selected core subject areas of chemical engineering: chemical process analysis, thermodynamics, fluid flow analysis, mass transfer and reactor design by earning a grade of B or better.
- Students will acquire a working knowledge of various areas of chemical science and technology and in allied fields, including other engineering disciplines, the sciences, and mathematics. They will successfully complete three elective courses; these courses will be approved by their advisors and the Graduate Director.
- Students will gain exposure to advances at the frontiers of knowledge in chemical science and technology. All PhD students are required to attend periodic departmental seminars by registering for a one-credit seminar class each semester.
- Students will acquire the ability to identify pertinent research problems, to formulate and execute a research plan, to generate and analyze original research results, and to communicate those results

through oral presentations and written publications submitted to refereed archival journals.

- Students will acquire the basic skills needed for life-long learning and professional development. The ability to perform research and apply it to practical use is demonstrated by successful completion of a doctoral research project and related dissertation. Writing an article suitable for publication in peer-reviewed journals is a necessary skill, which students demonstrate by having three such articles accepted for publication prior to the granting of the PhD. A Graduate Symposium is held each year by the Department at which students present their research results to the Department Industrial Advisory Board.

## Degree Requirements (60 Post-Baccalaureate Hours)

For Doctor of Philosophy students, a minimum of 60 credit hours is required beyond the B.S. degree. No more than two courses below the 700 level may be used on the program of study.

For students entering the Ph.D. degree program with a Master of Science or Master of Engineering degree in chemical engineering equivalent to that awarded at USC, the Program of Study must show a minimum of 30 credit hours beyond the Master's degree, including at least 12 credit hours of dissertation preparation (ECHE 899 ([http://bulletin.sc.edu/preview\\_program.php?catoid=94&pooid=6180&returnto=2725#tt9959](http://bulletin.sc.edu/preview_program.php?catoid=94&pooid=6180&returnto=2725#tt9959))) and six credit hours of independent research (ECHE 797 ([http://bulletin.sc.edu/preview\\_program.php?catoid=94&pooid=6180&returnto=2725#tt9959](http://bulletin.sc.edu/preview_program.php?catoid=94&pooid=6180&returnto=2725#tt9959))). Elective courses are not required of students entering the Ph.D. program with a Master's degree. The Department requires that these students also provide evidence that courses similar to the core graduate courses have been successfully completed in the Master's program or these courses must be successfully completed at USC.

Each Ph.D. student must select a research advisor during the first semester after admission to the doctoral program. After a Ph.D. student passes the admission to candidacy examination, an advisory committee of no less than four members will be selected. The committee must include the department chair and one outside member. Doctoral students must pass the comprehensive examination before the start of the student's fifth semester in the program (not including summer terms). Students should consult the graduate director for information on the format and subjects of the admission to candidacy and comprehensive examinations. Prior to graduation, each Ph.D. student must submit at least three papers for publication in peer-reviewed technical journals. Other requirements pertaining to the comprehensive examination, dissertation examination, and final submission of the dissertation conform to the general regulations of The Graduate School.

Under extenuating circumstances, students may seek relief from departmental degree regulations by written petition to the graduate director.

### Coursework (24 Hours)

#### Core Courses (12 Hours)

Course	Title	Credits
ECHE 700	Chemical Process Analysis	3
ECHE 710	Advanced Chemical Engineering Thermodynamics	3
ECHE 720	Advanced Fluid Flow Analysis	3

ECHE 722	Advanced Mass Transfer	3
<b>Total Credit Hours</b>		<b>12</b>

### Elective Courses (12 Hours)

The remaining four courses may be from many disciplines including chemistry, engineering, mathematics, statistics, physics, biology, medicine, etc. upon approval of the Ph.D. Committee and Graduate Director and shall be selected to acquire expertise in the area of the student's dissertation research.

### Research (6 Hours)

Course	Title	Credits
ECHE 797	Research	6
<b>Total Credit Hours</b>		<b>6</b>

### Dissertation Preparation (12-30 Hours)

Course	Title	Credits
ECHE 899	Dissertation Preparation	12
<b>Total Credit Hours</b>		<b>12</b>

## Civil and Environmental Engineering

Department Website ([https://www.sc.edu/study/colleges\\_schools/engineering\\_and\\_computing/departments/civil\\_and\\_environmental\\_engineering/](https://www.sc.edu/study/colleges_schools/engineering_and_computing/departments/civil_and_environmental_engineering/))

Dr. Juan Caicedo, Chair

Civil and environmental engineers are involved with the systems that are essential to our modern way of life. For example, civil and environmental engineers plan, design, and construct roads, bridges and airports, buildings, water supply and wastewater treatment plants, waterways, ports, and dams. They also work to protect the environment by developing and applying remedial technologies to contaminated groundwater and soil. Civil and environmental engineers are well qualified to participate in public and private decision-making processes regarding infrastructure systems, and, as such, serve as technical and policy advisors or elected officials.

The Department of Civil and Environmental Engineering offers programs leading to the Master of Science, Master of Engineering, and Doctor of Philosophy degrees. Students in the M.S. and Ph.D. degree programs specialize in at least one of the following program areas: environmental engineering, geotechnical engineering, structural engineering, transportation engineering, water resources engineering and railway engineering. Students in the M.E. program may opt to specialize in one area of study or obtain a broad range of experience across the civil and environmental engineering discipline.

## Areas of Specialization

**Environmental Engineering** focuses on sustainability and environmental applications and implications of nanotechnology, including water and wastewater reclamation, bioreactor landfills, waste conversion processes, treatment technologies for developing countries, application of nanomaterials for developing innovative remediation technologies, quantum modeling of nanomaterials, and understanding fate, transport, and toxicity of nanomaterials in the environment.

**Geotechnical Engineering** focuses on soil, rock and engineered geomaterials with specific concentrations on field and laboratory investigations using standard and novel testing technologies, design

and performance of foundations and earth structures, slope stability analyses, soil dynamics and liquefaction, pavement design and performance, landfill design and instrumentation, and geoenvironmental studies.

**Structural Engineering** focuses on structural design, and analysis for buildings, bridges and other civil structures, materials characterization and modeling including concrete, steel and fiber reinforced polymers, multi-scale structural testing, advanced numerical simulations, structural health monitoring and prognosis, life-cycle and environmental performance analysis, and seismic engineering and design.

**Transportation Engineering** focuses on modeling transportation system operations, traffic sensing technologies and traffic data analyses, including intelligent transportation systems, modeling and simulation of large-scale transportation networks, weigh-in-motion systems, traffic studies, traffic signal simulation and pavement management systems and performance modeling.

**Water Resources Engineering** focuses on the study and computer modeling of natural and industrial flow and transport processes, both in the laboratory and in the field, including fluid mechanics, hydraulic transients, cardiovascular flow, river mechanics and marine sediment transport, scour, hydrology of landfills, storm water modeling and best management practices, and watershed scale hydrology.

## Accelerated B.S.E./Master's Plans

A combined B.S./M.S. or B.S./M.E. degree program is available to undergraduate civil and environmental engineering students with GPAs of 3.40 or above and 90 or more hours earned toward their B.S. degree. Up to six (6) credit hours at or above the 500-level may be applied toward a student's B.S./M.E. program of study. Up to a total of six (6) credit hours of ECIV 797 and graduate course work at or above the 500-level toward a B.S. degree may be applied toward a student's B.S./M.S. program of study. The approval of the student's advisor and the Department's graduate director are required. Questions about this program may be directed to the Department's graduate director.

## Programs

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- Civil Engineering, M.S. (p. 295)
- Civil Engineering, Ph.D. (p. 297)
- Railway Engineering, Certificate (p. 298)

## Courses

### ECIV 502 - Life Cycle Assessment of Civil and Environmental Engineering Systems (3 Credits)

The steps of conducting and interpreting an environmental life cycle assessment on civil and environmental engineering systems. Fundamentals associated with conducting a life cycle assessment, including goal and scope, inventory analysis, impact assessment, and interpretation.

**Prerequisites:** D or better in ECIV 350 and D or better in either ECIV 303, ECIV 325, ECIV 327, ECIV 330, ECIV 340 or ECIV 362.

### ECIV 503 - Structural Modeling and Experimental Methods (3 Credits)

Introduction of structural modeling; strain gauge instrumentation; force, displacement, acceleration, pressure, temperature measurements; concrete and steel modeling; size effects; analysis of experimental data.

**Prerequisites:** ECIV 327.

**ECIV 520 - Structural Analysis II (3 Credits)**

Advanced methods of structural analysis with emphasis on matrix methods. Development of the generalized matrix force and matrix displacement methods of static analysis, with applications to trusses and frames.

**Prerequisites:** ECIV 320.

**ECIV 521 - Numerical Methods in Mechanics (3 Credits)**

Numerical modeling of typical engineering problems. Numerical solution of linear and nonlinear, boundary and initial value problems. Introduction to optimization.

**Prerequisites:** D or better in ECIV 201 or ENCP 201.

**ECIV 524 - Structural Vibrations (3 Credits)**

Response of single- and multiple-degree of freedom structurally dynamic systems to impact, harmonic, wind, and seismic excitations.

**Prerequisites:** ECIV 320.

**ECIV 526 - Timber and Masonry Design (3 Credits)**

Basic engineering properties of timber and masonry materials, design methods and philosophies for timber and masonry structures. Particular attention is paid to current codes, specifications and analysis.

**Prerequisites:** C or better in ECIV 320.

**ECIV 530 - Foundation Analysis and Design (3 Credits)**

Subsurface investigation procedures. Theoretical and practical aspects of the design of earth retaining structures, spread footings, and pile foundations.

**Prerequisites:** ECIV 330.

**ECIV 531 - Design of Earth Structures (3 Credits)**

Geotechnical engineering problems associated with the behavior of earth masses. Soil shear strength, lateral earth pressure, design of retaining structures, slope stability, water flow through soils.

**Prerequisites:** ECIV 330.

**ECIV 533 - Geosynthetics and Geotechnical Design of Landfills (3 Credits)**

Principles for the design, construction, and performance of waste containment systems. Characterization of barrier materials; geosynthetics; design of liner and leachate collection systems; stability and deformation analyses of landfills.

**Prerequisites:** ECIV 330.

**ECIV 535 - Geotechnical Engineering in Transportation (3 Credits)**

Remote sensing and engineering geology. Field and laboratory testing. Design and maintenance methods for flexible and rigid pavements. Topics in tunnel design and buried conduit.

**Prerequisites:** ECIV 330.

**ECIV 539 - Experimental Methods in Geotechnical Engineering (3 Credits)**

Overview of transducers, signal conditioning and data acquisition; test control methods, data analysis and measurement errors; testing systems to measure soil strength, stiffness, and hydraulic conductivity; laboratory projects and examinations.

**Prerequisites:** ECIV 330, ECIV 330L.

**ECIV 540 - Transportation Systems Planning (3 Credits)**

Fundamental interactions between supply and demand in transportation systems. Modeling transportation demand and trip-making behavior. Evaluation of alternatives for decision making.

**Prerequisites:** ECIV 340.

**ECIV 541 - Highway Design (3 Credits)**

Design of transportation facilities using relevant tools and guidelines with emphasis on physical and operational aspects of arterials, freeways, intersections, and interchanges, including geometry, capacity, control, and safety.

**Prerequisites:** D or better in ECIV 111 or ENCP 102 and D or better in ECIV 340.

**ECIV 542 - Traffic Engineering (3 Credits)**

Capacity analysis of freeways and arterials. Traffic flow characteristics and basic relationships among traffic flow parameters. Signalized and unsignalized intersection control and signal timing design.

**Prerequisites:** ECIV 340.

**ECIV 543 - Traffic Safety Analysis (3 Credits)**

Research concepts and methodologies to enable students to identify the underlying reasons and factors that contribute to traffic crashes and determine appropriate countermeasures.

**Prerequisites:** D or better in ECIV 340.

**ECIV 551 - Elements of Water and Wastewater Treatment (3 Credits)**

Unit operations and processes employed in the physical, chemical, and biological treatment of water and wastewater. Design of water and wastewater treatment systems.

**Prerequisites:** ECIV 350.

**ECIV 555 - Principles of Municipal Solid Waste Engineering (3 Credits)**

Fundamentals and engineering principles of solid waste generation, characterization, collection and transport, source reduction and recycling, and physical, chemical, and biological treatment strategies.

**Prerequisites:** ECIV 350.

**ECIV 556 - Air Pollution Control Engineering (3 Credits)**

Introduction to the sources of air pollution and the engineering principles used for control and prevention.

**Prerequisites:** ECIV 350.

**ECIV 557 - Sustainable Construction for Engineers (3 Credits)**

Instruction to sustainable engineering design alternatives and principles for construction and site development from preconstruction through design and the construction phase.

**Prerequisites:** ECIV 350 and ECIV 570.

**ECIV 558 - Environmental Engineering Process Modeling (3 Credits)**

Modeling fate and transport phenomena in environmental processes with applications in engineered unit operators and natural systems.

**Prerequisites:** ECIV 350 and MATH 242.

**ECIV 560 - Open Channel Hydraulics (3 Credits)**

Steady and unsteady flows in single or multiple-channel systems.

**Prerequisites:** ECIV 360.

**ECIV 562 - Engineering Hydrology (3 Credits)**

Applications of hydrologic techniques to design problems; stormwater simulation models; urban stormwater.

**Prerequisites:** ECIV 360.

**ECIV 563 - Subsurface Hydrology (3 Credits)**

Hydrologic cycle, subsurface physical properties, equations of groundwater flow, well flow, well design, groundwater resource development, design of dewatering systems, groundwater contamination.

**Prerequisites:** ECIV 201, ECIV 360.

**ECIV 570 - Land Development for Engineers (3 Credits)**

Fundamentals of designing and permitting the conversion of land to new or altered states, including environmental issues, traffic and parking, utility resources, site engineering, ADA, safety, planning, and zoning requirements.

**Prerequisites:** Three from ECIV 320, ECIV 330, ECIV 340, ECIV 350, and ECIV 362.

**ECIV 580 - Railway Engineering I (3 Credits)**

Introduction to the analysis and design of the railway infrastructure for freight and passenger systems to include track and track support systems, grade crossings, special trackwork, construction, inspection, assessment and compliance.

**Prerequisites:** ECIV 303, ECIV 320, ECIV 330, ECIV 340.

**Corequisite:** ECIV 303.

**ECIV 582 - Operation and Logistics of Railway Systems (3 Credits)**

Principles of rail operations; Network management; Best practices for train planning, performance management and delivery of service; technical elements of a railway from an operations perspective (train controls, signaling, communications, yards, tractive power etc).

**Prerequisites:** ECIV 340.

**ECIV 588 - Design of Railway Bridges and Structures (3 Credits)**

Introduction to railway infrastructure; Structural design considerations and criteria of railway structures; Bridge types and components; Planning and preliminary design of modern railway bridges; Loads and forces; Structural analysis and design of steel railway bridges and components.

**Prerequisite or Corequisite:** ECIV 330; ECIV 325 or ECIV 327.

**ECIV 705 - Deterministic Civil and Environmental Systems Engineering (3 Credits)**

Planning, design, and operation of large-scale, integrated civil and environmental engineering systems, with applications of mathematical programming and other search models.

**Prerequisites:** ECIV 405.

**ECIV 706 - Probabilistic Civil and Environmental Systems Engineering (3 Credits)**

Civil and environmental systems engineering under uncertainty, including decision rules, decision theory, uncertainty propagation, stochastic programming, and conservative design.

**Prerequisites:** STAT 509.

**ECIV 707 - Management of Engineering Projects (3 Credits)**

This course focuses in studying the life-cycle of a project using a systems engineering approach. Industry standards for engineering companies as well as practical considerations are studied through the semester.

**ECIV 708 - Engineering Risk and Reliability (3 Credits)**

Risk analysis is presented in the context of reliability in design including applications to mechanical and electrical systems with discussion of failure modes and life cycle costs.

**ECIV 712 - Boundary Element Methods in Engineering (3 Credits)**

Introduction to boundary element methods and their computer implementation. Steady-state and transient solutions of two- and three-dimensional problems of elasticity and potential flow.

**Prerequisites:** ENCP 260, MATH 242.

**ECIV 720 - Advanced Structural Mechanics and Analysis (3 Credits)**

Development of concepts and practical applications of the finite element method of structural analysis with emphasis on the displacement method approach. Initial strains, specified displacements, numerical integration, and isoparametric elements are included.

**Prerequisites:** ECIV 520.

**ECIV 722 - Theory and Design of Plates and Shells (3 Credits)**

Development of the fundamental differential equations for plates. Miscellaneous classic plate solutions. Membrane and bending solutions for shells of revolution, circular cylindrical shells, hyperbolic paraboloid shells and circular cylindrical barrel shells.

**Prerequisites:** MATH 242.

**ECIV 724 - Dynamics of Structures (3 Credits)**

Lumped and continuous multidegree of freedom mechanical systems and structural assemblies. Steady-state, shock, and random excitation. Modal analysis, numerical methods. Introduction to wave propagation, earthquake engineering, and nonlinear vibrations.

**Prerequisites:** ENCP 260, MATH 242.

**ECIV 725 - Advanced Analysis and Design in Structural Metals (3 Credits)**

Analysis and behavior of metal structural components under general loading combinations. Buckling phenomena of thin-walled open sections in the elastic and inelastic regions, and correlation with design code criteria. Behavior and design of plate girders.

**Prerequisites:** ECIV 425.

**ECIV 726 - Repair and Retrofit of Structures (3 Credits)**

Analysis and modeling existing and repaired structures. Selection, modeling, and design of repair and/or retrofit measures.

**Prerequisites:** ECIV 520.

**ECIV 727 - Advanced Analysis and Design of Reinforced Concrete (3 Credits)**

Design of multistory structures, two-way slabs, joints in buildings, pavement design, and miscellaneous topics.

**Prerequisites:** ECIV 427.

**ECIV 728 - Prestressed Concrete Analysis and Design (3 Credits)**

Pre-stressing methods and materials; flexural analysis, shear and torsion, design of simple, composite and continuous beams. Deflections, slab design, and study of axially loaded members.

**Prerequisites:** ECIV 327.

**ECIV 730 - Advanced Soil Mechanics (3 Credits)**

Course covers the mechanical properties of soil; analysis of the field and laboratory tests to determine soil properties required for foundation analysis and design; consolidation theory; and settlement analysis.

**Prerequisites:** ECIV 530.

**ECIV 731 - Slope Stability, Retaining Systems and Lateral Earth Pressure (3 Credits)**

Shear strength of soil and rock under effective stress. Slope stability analysis, tieback and reinforced earth systems. Computation of earth pressures for excavations and tunnels. Dewatering for construction.

**Prerequisites:** ECIV 530.

**ECIV 732 - Theoretical and Numerical Methods in Geomechanics (3 Credits)**

Constitutive models and their numerical implementation. Elastic and plastic approaches to analysis. Finite element applications to geomechanics problems. Layer analysis, arching, and stability case studies.

**Prerequisites:** ECIV 530.

**ECIV 733 - Physico-chemical Properties of Soils (3 Credits)**

Soil mineralogy, chemistry, and clay-water systems. Impact of soil fabric and microstructure on engineering behavior. Soil-contaminant interaction. Barriers and liners for containment.

**Prerequisites:** ECIV 530.

**ECIV 734 - Dynamics of Soils and Foundations (3 Credits)**

Properties of soils under dynamic loading. Harmonic and periodic motion. Free and forced vibrations. Vibrations of footings on an elastic half-space. Cyclic loadings and liquefaction, earthquake response of soils.

**Prerequisites:** ECIV 330.

**ECIV 736 - Ground Improvement Techniques (3 Credits)**

Application of soil mechanics principles to improving the engineering characteristics of soil and rock. Topics include mechanisms of soil densification, preconsolidation, grouting, ground freezing, reinforced earth, and soil nailing.

**Prerequisites:** ECIV 530.

**ECIV 737 - Advanced Foundation Design (3 Credits)**

Application of soil mechanics to design and analysis of foundations. Shallow foundations, bearing capacity, settlement. Deep foundations, axial and lateral loading, wave equation analysis, drilled shafts. Design and construction issues.

**Prerequisites:** ECIV 530.

**ECIV 742 - Intermodal Freight Transport (3 Credits)**

Marine container terminal design and operations, rail-yard design and operations, cross-dock terminal design and operations, drayage routing and scheduling, and network design. Application of operations research techniques to intermodal transportation.

**Prerequisites:** D or better in ECIV 705.

**ECIV 744 - Discrete Choice Analysis of Travel Demand (3 Credits)**

Individual choice theory; binary choice models; unordered multinomial and multi-dimensional choice models; sampling theory and sample design; ordered multinomial models, aggregate prediction with choice models; joint stated preference and revealed preference modeling, and longitudinal choice analysis; review of state-of-the-art and future directions.

**Prerequisites:** D or better in STAT 509.

**ECIV 746 - Flows in Transportation Networks (3 Credits)**

Design, operation, and management of traffic flows over complex transportation networks. Covers two major topics: traffic flow modeling and traffic flow operations. Includes deterministic and probabilistic models, elements of queueing theory, and traffic assignment. Concepts and methods are illustrated through various applications and examples.

**Prerequisites:** D or better in ECIV 706.

**ECIV 748 - Traffic Flow Theory (3 Credits)**

Survey of statistical techniques useful in traffic engineering. Deterministic and stochastic models of traffic flow. Operations research techniques. Simulation by digital computer. Applications to highway problems.

**Prerequisites:** ECIV 541, STAT 509.

**ECIV 750 - Principles of Environmental Engineering Process (3 Credits)**

Basic physical, chemical, and biological processes applied to aqueous systems.

**Prerequisites:** CHEM 112 and MATH 142.

**ECIV 751 - Water and Wastewater Treatment Theory I (3 Credits)**

Physical and chemical water and wastewater treatment processes. Topics include mixing, coagulation, sedimentation, filtration, oxidation, absorption, and ion exchange.

**Prerequisites:** ECIV 750.

**ECIV 752 - Water and Wastewater Treatment Theory II (3 Credits)**

Biological water and wastewater treatment process. Topics include activated sludge, biofilms, nutrient removal, lagoons, and sludge treatment and disposal.

**Prerequisites:** ECIV 750.

**ECIV 753 - Unit Operations Laboratory for Water and Wastewater Treatment (3 Credits)**

Laboratory experiments in selected processes for water and wastewater treatment.

**Prerequisites:** ECIV 350L.

**ECIV 755 - Industrial Wastewater Treatment (3 Credits)**

Industrial sources, characteristics, and treatment plant design.

**Prerequisites:** ECIV 751 or ECIV 752.

**ECIV 760 - Computational Hydraulics (3 Credits)**

Unsteady flow in open channels and pipes: theory, governing equations, and methods for their solution.

**Prerequisites:** ECIV 560.

**ECIV 761 - Numerical Methods in Subsurface Hydrology (3 Credits)**

Formation of groundwater flow and solute transport problems: theory and practice, numerical methods, solution techniques.

**Cross-listed course:** GEOL 775

**ECIV 762 - Advanced Hydrology (3 Credits)**

Advanced theories and techniques used in stormwater modeling; kinematic hydrology; soil physics infiltration; deterministic and parametric stormwater models; stochastic methods.

**Prerequisites:** ECIV 562.

**ECIV 763 - Unsaturated Flow Theory (3 Credits)**

Moisture content-matric suction relationships, theory of flow in unsaturated soils, governing equations, measurement techniques, computer modeling of flow and transport.

**Prerequisites:** ECIV 563.

**ECIV 764 - Contaminant Transport (3 Credits)**

Quantitative study of conservative and non-conservative pollutant transport in groundwater. Special topics include: transport processes, field techniques to determine aquifer transport parameters, and computer modeling of flow and transport.

**Prerequisites:** ECIV 563.

**ECIV 765 - Erosion and Sediment Control (3 Credits)**

Erosion, sediment transport, methods for control, pond hydraulics and performance, nonpoint source pollution, stream water quality.

**Prerequisites:** ECIV 562.

**ECIV 766 - Fluid Transients (3 Credits)**

Definitions; derivation of governing equations; methods of solution; method of characteristics; transients caused by turbomachinery, and methods for controlling transients.

**Prerequisites:** ENCP 360.

**ECIV 767 - Sediment Transport and River Mechanics (3 Credits)**

Sediment properties, review of fluid mechanics of sediment transport as bedload and suspended load, stability analysis of bedforms, alternate bars, growth and migration of meander bends.

**Prerequisites:** ECIV 560.

**ECIV 784 - Dynamic Analysis of Railway Systems (3 Credits)**

Dynamic characteristics of railway systems and their components; Modeling and simulations of railway systems including trains, track and ballast; Dynamic interaction of components including wheel-rail and train-bridge interaction; Study of environmental vibrations; Advanced topics on infrastructure assessment, infrastructure upgrade and vibration mitigation.

**Prerequisites:** ECIV 524.

**Prerequisite or Corequisite:** ECIV 520.

**ECIV 789 - Design Project in Railway Engineering (4 Credits)**

Application of engineering design principles in railway projects; project management; project scheduling; cost estimation; ethics; environmental and social impact; design drawings; report documents.

**Prerequisites:** ECIV 580 or ECIV 582.

**ECIV 790 - Selected Topics in Civil Engineering (3-9 Credits)**

Individual studies and/or investigations of special topics in the field of civil engineering.

**ECIV 797 - Research in Civil Engineering (1-12 Credits)**

Credits to be designated upon registration.

**ECIV 798 - Seminar in Civil and Environmental Engineering (0 Credits)**

Seminar on current topics in civil and environmental engineering. Includes oral presentations by students on their research projects. Recommended by the department that all graduate students participate each semester the seminar series is offered.

**ECIV 799 - Thesis Preparation in Civil Engineering (1-12 Credits)**

To be arranged by candidates for the master's degree with the instructor under whose direction the master's thesis is being written.

**ECIV 899 - Dissertation Preparation in Civil Engineering (1-12 Credits)**

## Civil Engineering, M.E.

All programs of study must be approved by the student's academic advisor and the Department of Civil and Environmental Engineering graduate director.

### Learning Outcomes

- Graduates will be able to demonstrate expertise in a core subject area of civil and environmental engineering. Core subject areas of study include Environmental Engineering, Geotechnical Engineering, Structural Engineering, Transportation Engineering, and Water Resources Engineering.

- Graduates will demonstrate a working knowledge of various areas of civil and environmental engineering (including Environmental Engineering, Geotechnical Engineering, Structural Engineering, Transportation Engineering, and Water Resource Engineering) and related fields, including other engineering disciplines, the sciences, and mathematics.
- Graduates will be able to describe and discuss advances of knowledge in civil and environmental engineering.
- Graduates will demonstrate the basic skills (e.g., leadership, presentation, time managements, problem solving, study, and organizing) required for life-long learning and professional development.

### Admissions

Students with Bachelor of Science (B.S.) degrees in civil or environmental engineering are eligible to enter the M.E. degree program. The M.E. degree is only available to students with B.S. degrees in engineering. Students with engineering degrees in areas other than civil engineering may be required to complete deficiency/prerequisite undergraduate courses. As a minimum, the following deficiency/prerequisite courses or equivalent will be required: MATH 141, MATH 142 and MATH 242; CHEM 111; PHYS 211 and PHYS 212; ECIV 200; ECIV 201; STAT 509. Students will also be required to take all undergraduate courses that are listed as prerequisites for courses taken for graduate credit. In general, deficiency/prerequisite courses must be completed with a **B** average. Specific Program Areas (Environmental Engineering, Geotechnical Engineering, Structural Engineering, Transportation Engineering and Water Resources Engineering) may require additional course work.

An undergraduate grade point average (GPA) of 2.8 on a 4.0 scale, and 3.0 on a 4.0 scale on any graduate course work is required for students wishing to enter the M.E. degree programs with B.S. degrees in engineering. Exceptions to the minimum undergraduate GPA requirements for admission to the M.E. degree program may be made for students with special qualifications.

The general Graduate Record Examination (GRE) is not required for students entering the M.E. degree program providing the student has a GPA > 2.8 and a B.S. degree in civil or environmental engineering from an ABET accredited school. The GRE is required for applicants not meeting these requirements. Typically, successful applicants have combined scores of at least 301 (1100 in the old scale) on the Verbal and Quantitative (V + Q) sections, and 3.5 on the Analytical Writing section.

### Degree Requirements (30 Hours)

For the M.E. degree, a minimum of 30 credit hours is required. Students may take either 30 credit hours of course work or 24 hours of course work and 6 hours of ECIV 797 (as a master of engineering project). At least 18 hours of course work must be 700-level or higher. Up to 12 credit hours of course work may be taken outside of the department for degree credit with the approval of the student's advisor and the graduate director. Prescribed core courses are required for each area of study (see "Core Courses" below).

Prior to graduation, each M.E. candidate must pass a comprehensive assessment based on program learning objectives by demonstrating the ability to integrate graduate level coursework into engineering practice in one of two ways:

1. a written career planning document; or
2. a written summary of the engineering project performed as part of ECIV 797.

Students should consult the graduate director for additional information.

## Core Courses

Each area of study has a minimum core requirement for the M.S., M.E., and Ph.D. degrees. The core requirements in the different areas of study are as follows:

### Environmental Engineering

Course	Title	Credits
ECIV 750	Principles of Environmental Engineering Process	3
Select two of the following: 6		
ECIV 555	Principles of Municipal Solid Waste Engineering	
ECIV 556	Air Pollution Control Engineering	
ECIV 558	Environmental Engineering Process Modeling	
ECIV 751	Water and Wastewater Treatment Theory I	
ECIV 752	Water and Wastewater Treatment Theory II	
ECIV 753	Unit Operations Laboratory for Water and Wastewater Treatment	
ECIV 755	Industrial Wastewater Treatment	
<b>Total Credit Hours</b>		<b>9</b>

### Geotechnical Engineering

Course	Title	Credits
ECIV 730	Advanced Soil Mechanics	3
Select three of the following: 9		
ECIV 731	Slope Stability, Retaining Systems and Lateral Earth Pressure	
ECIV 732	Theoretical and Numerical Methods in Geomechanics	
ECIV 733	Physico-chemical Properties of Soils	
ECIV 734	Dynamics of Soils and Foundations	
ECIV 736	Ground Improvement Techniques	
ECIV 737	Advanced Foundation Design	
<b>Total Credit Hours</b>		<b>12</b>

### Structural Engineering

Course	Title	Credits
ECIV 720	Advanced Structural Mechanics and Analysis	3
Select three of the following: 9		
ECIV 722	Theory and Design of Plates and Shells	
ECIV 724	Dynamics of Structures	
ECIV 725	Advanced Analysis and Design in Structural Metals	
ECIV 726	Repair and Retrofit of Structures	
ECIV 727	Advanced Analysis and Design of Reinforced Concrete	
ECIV 728	Prestressed Concrete Analysis and Design	
ECIV 737	Advanced Foundation Design	
<b>Total Credit Hours</b>		<b>12</b>

### Transportation Engineering

Course	Title	Credits
Select one from each group: 9		
<b>Group One</b>		
ECIV 535	Geotechnical Engineering in Transportation	
ECIV 540	Transportation Systems Planning	
ECIV 541	Highway Design	
<b>Group Two</b>		
ECIV 542	Traffic Engineering	
ECIV 748	Traffic Flow Theory	
<b>Group Three</b>		
ECIV 705	Deterministic Civil and Environmental Systems Engineering	
ECIV 706	Probabilistic Civil and Environmental Systems Engineering	
<b>Total Credit Hours</b>		<b>9</b>

### Water Resources Engineering

Course	Title	Credits
Select one of the following options: 9		
<b>Option One</b>		
Select two of the following:		
ECIV 760	Computational Hydraulics	
ECIV 761	Numerical Methods in Subsurface Hydrology	
ECIV 762	Advanced Hydrology	
ECIV 763	Unsaturated Flow Theory	
ECIV 764	Contaminant Transport	
ECIV 765	Erosion and Sediment Control	
ECIV 766	Fluid Transients	
ECIV 767	Sediment Transport and River Mechanics	
Select one of the following:		
ECIV 560	Open Channel Hydraulics	
ECIV 562	Engineering Hydrology	
ECIV 563	Subsurface Hydrology	
<b>Option Two</b>		
Select three of the following:		
ECIV 760	Computational Hydraulics	
ECIV 761	Numerical Methods in Subsurface Hydrology	
ECIV 762	Advanced Hydrology	
ECIV 763	Unsaturated Flow Theory	
ECIV 764	Contaminant Transport	
ECIV 765	Erosion and Sediment Control	
ECIV 766	Fluid Transients	
ECIV 767	Sediment Transport and River Mechanics	
<b>Total Credit Hours</b>		<b>9</b>

## Civil Engineering, M.S.

All programs of study must be approved by the student's academic advisor and the Department of Civil and Environmental Engineering graduate director.

## Learning Outcomes

- Graduates will be able to demonstrate expertise in a core subject area of civil and environmental engineering.
- Graduates will demonstrate a working knowledge of various areas of civil and environmental engineering and in related fields, including other engineering disciplines, the sciences, and mathematics.
- Graduates will be able to describe and discuss advances of knowledge in civil and environmental engineering.
- Students will be able to apply knowledge of mathematics, science and engineering.
- Graduates will demonstrate the basic skills (e.g., leadership, presentation, time managements, problem solving, study, and organizing) required for life-long learning and professional development.

## Admissions

Students with Bachelor of Science (B.S.) degrees in civil or environmental engineering are eligible to enter the M.S. degree program. Students with engineering degrees in areas other than civil engineering may be required to complete deficiency/prerequisite undergraduate courses. As a minimum, the following deficiency/prerequisite courses or equivalent will be required: MATH 141, MATH 142 and MATH 242; CHEM 111; PHYS 211 and PHYS 212; ECIV 200; ECIV 201; STAT 509. Students will also be required to take all undergraduate courses that are listed as prerequisites for courses taken for graduate credit. In general, deficiency/prerequisite courses must be completed with a **B** average. Specific Program Areas may require additional course work.

An undergraduate grade point average (GPA) of 2.8 on a 4.0 scale, and 3.0 on a 4.0 scale on any graduate course work is required for students wishing to enter the M.S. degree programs with B.S. degrees in engineering. Exceptions to the minimum undergraduate GPA requirements for admission to the M.S. degree program may be made for students with special qualifications.

For students with non-engineering baccalaureate degrees, or engineering degrees from programs not accredited by ABET, the minimum grade requirement is a GPA of 3.0 on a 4.0 scale on their undergraduate coursework, and 3.0 on a 4.0 scale on any graduate course work.

The general Graduate Record Examination (GRE) is required for all students entering the M.S. degree program. Typically, successful applicants have combined scores of at least 301 (1100 in the old scale) on the Verbal and Quantitative (V + Q) sections, and 3.5 on the Analytical Writing section.

## Degree Requirements (30 Hours)

For the M.S. degree, 30 credit hours, of which 6 credit hours must be ECIV 799, are required. At least 15 hours of course work must be 700-level or higher. Up to 9 credit hours of course work may be taken outside of the department for degree credit with the approval of the student's advisor and the graduate director. Prescribed core courses are required for each area of study (see "Core Courses" below). A maximum of 6 credits of ECIV 797 may be used toward the student's program of study.

Credits earned in ECIV 798 do not count toward a student's program of study.

## Core Courses

Each area of study has a minimum core requirement for the M.S., M.E., and Ph.D. degrees. The core requirements in the different areas of study are as follows:

### Environmental Engineering

Course	Title	Credits
ECIV 750	Principles of Environmental Engineering Process	3
Select two of the following:		
ECIV 555	Principles of Municipal Solid Waste Engineering	6
ECIV 556	Air Pollution Control Engineering	
ECIV 558	Environmental Engineering Process Modeling	
ECIV 751	Water and Wastewater Treatment Theory I	
ECIV 752	Water and Wastewater Treatment Theory II	
ECIV 753	Unit Operations Laboratory for Water and Wastewater Treatment	
ECIV 755	Industrial Wastewater Treatment	
<b>Total Credit Hours</b>		<b>9</b>

### Geotechnical Engineering

Course	Title	Credits
ECIV 730	Advanced Soil Mechanics	3
Select three of the following:		
ECIV 731	Slope Stability, Retaining Systems and Lateral Earth Pressure	9
ECIV 732	Theoretical and Numerical Methods in Geomechanics	
ECIV 733	Physico-chemical Properties of Soils	
ECIV 734	Dynamics of Soils and Foundations	
ECIV 736	Ground Improvement Techniques	
ECIV 737	Advanced Foundation Design	
<b>Total Credit Hours</b>		<b>12</b>

### Structural Engineering

Course	Title	Credits
ECIV 720	Advanced Structural Mechanics and Analysis	3
Select three of the following:		
ECIV 722	Theory and Design of Plates and Shells	9
ECIV 724	Dynamics of Structures	
ECIV 725	Advanced Analysis and Design in Structural Metals	
ECIV 726	Repair and Retrofit of Structures	
ECIV 727	Advanced Analysis and Design of Reinforced Concrete	
ECIV 728	Prestressed Concrete Analysis and Design	
ECIV 737	Advanced Foundation Design	
<b>Total Credit Hours</b>		<b>12</b>

### Transportation Engineering

Course	Title	Credits
Select one from each group:		
<b>Group One</b>		
ECIV 535	Geotechnical Engineering in Transportation	
ECIV 540	Transportation Systems Planning	
ECIV 541	Highway Design	
<b>Group Two</b>		



ECIV 542	Traffic Engineering	
ECIV 748	Traffic Flow Theory	
<b>Group Three</b>		
ECIV 705	Deterministic Civil and Environmental Systems Engineering	
ECIV 706	Probabilistic Civil and Environmental Systems Engineering	
<b>Total Credit Hours</b>		<b>9</b>

### Water Resources Engineering

Course	Title	Credits
Select one of the following options:		
<b>Option One</b>		
Select two of the following:		
ECIV 760	Computational Hydraulics	
ECIV 761	Numerical Methods in Subsurface Hydrology	
ECIV 762	Advanced Hydrology	
ECIV 763	Unsaturated Flow Theory	
ECIV 764	Contaminant Transport	
ECIV 765	Erosion and Sediment Control	
ECIV 766	Fluid Transients	
ECIV 767	Sediment Transport and River Mechanics	
Select one of the following:		
ECIV 560	Open Channel Hydraulics	
ECIV 562	Engineering Hydrology	
ECIV 563	Subsurface Hydrology	
<b>Option Two</b>		
Select three of the following:		
ECIV 760	Computational Hydraulics	
ECIV 761	Numerical Methods in Subsurface Hydrology	
ECIV 762	Advanced Hydrology	
ECIV 763	Unsaturated Flow Theory	
ECIV 764	Contaminant Transport	
ECIV 765	Erosion and Sediment Control	
ECIV 766	Fluid Transients	
ECIV 767	Sediment Transport and River Mechanics	
<b>Total Credit Hours</b>		<b>9</b>

## Civil Engineering, Ph.D.

All programs of study must be approved by the student's academic advisor and the Department of Civil and Environmental Engineering graduate director.

### Learning Outcomes

- Graduates will be able to demonstrate expertise in a core subject area of civil and environmental engineering.
- Graduates will be able to demonstrate a working knowledge of various areas of CEE and related fields.
- Students will be able to describe and discuss sound research approaches and knowledge of advances in Civil and Environmental Engineering.
- Students will be able to demonstrate the ability to apply knowledge of mathematics, science and engineering.

- Graduates will be able to identify pertinent research problems, to formulate and execute a research plan.
- Graduates will be able to describe and discuss advances of knowledge in civil and environmental engineering.
- Graduates will be able to generate and analyze original research results, and to communicate these results through oral presentations and written publications submitted to refereed archival journals.
- Graduates will demonstrate the basic skills needed for life-long learning and professional development.

### Admissions

Students should have the equivalent of an M.E. or M.S. degree in civil engineering or closely related engineering field. Exceptional students may be eligible to enter directly the Ph.D. degree program with a B.S. degree in civil engineering or closely related engineering field. Applicants must generally exceed the minimum grade point average and test score requirements listed for the M.S. degree program. Outstanding students with non-engineering baccalaureate degrees may qualify for admission to the Ph.D. degree program, with the understanding that they must complete specified deficiency/prerequisite courses.

### Degree Requirements (60 Post-Baccalaureate Hours)

Completion of the doctoral degree requires a minimum of 60 credits beyond the baccalaureate degree, of which 12 must be ECIV 899. Students having an earned M.S. or M.E. degree must complete a minimum of 30 credit hours beyond the master's degree. At least half of the course work must be completed at the 700 level or higher. Prescribed core courses are required for each area of study (see "Core Courses" below).

For students pursuing a Ph.D. degree in the same program area as their M.S. or M.E. degree, a minimum of 18 credit hours of course work is required. Core courses may be satisfied during the M.S. or M.E. degree. For students pursuing a Ph.D. degree in a different program area from their M.S. or M.E. degree, a minimum of 24 credit hours of course work in the new area is required. "Program area" refers to environmental, geotechnical, structural, transportation or water resources engineering.

Credits earned in ECIV 798 do not count toward a student's program of study.

The residency requirement for the Ph.D. degree ensures that students benefit from and contribute to the complete spectrum of educational and professional opportunities provided by the graduate faculty of a comprehensive university. The granting of a doctoral degree presupposes a minimum of three full years of graduate study following admission to the doctoral program. As such, the residency requirement may be fulfilled by enrollment in at least 18 graduate credit hours within a span of three consecutive semesters (excluding summers). Enrollment in a summer term is not required to maintain continuity, but credits earned during summer terms may be used to count toward residency. Enrollment through the APOGEE program does not satisfy the residency requirement for the Ph.D. degree.

### Core Courses

Each area of study has a minimum core requirement for the M.S., M.E., and Ph.D. degrees. The core requirements in the different areas of study are as follows:

**Environmental Engineering**

Course	Title	Credits
ECIV 750	Principles of Environmental Engineering Process	3
Select two of the following:		6
ECIV 555	Principles of Municipal Solid Waste Engineering	
ECIV 556	Air Pollution Control Engineering	
ECIV 558	Environmental Engineering Process Modeling	
ECIV 751	Water and Wastewater Treatment Theory I	
ECIV 752	Water and Wastewater Treatment Theory II	
ECIV 753	Unit Operations Laboratory for Water and Wastewater Treatment	
ECIV 755	Industrial Wastewater Treatment	

**Total Credit Hours** 9

**Geotechnical Engineering**

Course	Title	Credits
ECIV 730	Advanced Soil Mechanics	3
Select three of the following:		9
ECIV 731	Slope Stability, Retaining Systems and Lateral Earth Pressure	
ECIV 732	Theoretical and Numerical Methods in Geomechanics	
ECIV 733	Physico-chemical Properties of Soils	
ECIV 734	Dynamics of Soils and Foundations	
ECIV 736	Ground Improvement Techniques	
ECIV 737	Advanced Foundation Design	

**Total Credit Hours** 12

**Structural Engineering**

Course	Title	Credits
ECIV 720	Advanced Structural Mechanics and Analysis	3
Select three of the following:		9
ECIV 722	Theory and Design of Plates and Shells	
ECIV 724	Dynamics of Structures	
ECIV 725	Advanced Analysis and Design in Structural Metals	
ECIV 726	Repair and Retrofit of Structures	
ECIV 727	Advanced Analysis and Design of Reinforced Concrete	
ECIV 728	Prestressed Concrete Analysis and Design	
ECIV 737	Advanced Foundation Design	

**Total Credit Hours** 12

**Transportation Engineering**

Course	Title	Credits
Select one from each group:		9
<b>Group One</b>		
ECIV 535	Geotechnical Engineering in Transportation	
ECIV 540	Transportation Systems Planning	
ECIV 541	Highway Design	
<b>Group Two</b>		
ECIV 542	Traffic Engineering	
ECIV 748	Traffic Flow Theory	
<b>Group Three</b>		

ECIV 705	Deterministic Civil and Environmental Systems Engineering
ECIV 706	Probabilistic Civil and Environmental Systems Engineering

**Total Credit Hours** 9

**Water Resources Engineering**

Course	Title	Credits
Select one of the following options:		9

**Option One**

Select two of the following:

ECIV 760	Computational Hydraulics
ECIV 761	Numerical Methods in Subsurface Hydrology
ECIV 762	Advanced Hydrology
ECIV 763	Unsaturated Flow Theory
ECIV 764	Contaminant Transport
ECIV 765	Erosion and Sediment Control
ECIV 766	Fluid Transients
ECIV 767	Sediment Transport and River Mechanics

Select one of the following:

ECIV 560	Open Channel Hydraulics
ECIV 562	Engineering Hydrology
ECIV 563	Subsurface Hydrology

**Option Two**

Select three of the following:

ECIV 760	Computational Hydraulics
ECIV 761	Numerical Methods in Subsurface Hydrology
ECIV 762	Advanced Hydrology
ECIV 763	Unsaturated Flow Theory
ECIV 764	Contaminant Transport
ECIV 765	Erosion and Sediment Control
ECIV 766	Fluid Transients
ECIV 767	Sediment Transport and River Mechanics

**Total Credit Hours** 9

# Railway Engineering, Certificate

All programs of study must be approved by the student's academic advisor and the director of the Graduate Certificate in Railway Engineering.

## Learning Outcomes

- Students will identify and describe the technical elements of a railway system including (but not limited to):
  - a. Track alignment, crossings, bridges,
  - b. Train controls, signaling, communications,
  - c. Traction power, freight, transit and passenger systems, and
  - d. methods of ensuring safe operation.
- Students will demonstrate the necessary skills to organize and present rail related project results in written and oral form.
- Students will apply appropriate engineering principles, solution methods and knowledge gained from engineering curriculum to accomplish a design at standards consistent with the railway industry practice.

- Students will describe the over-arching principles of rail operations including (but not limited to):
  - a. the movement and control of trains,
  - b. the management of terminals,
  - c. passenger and freight network management,
  - d. the proper and optimal use of rail assets,
  - e. the business and operating environment of a railway,
  - f. leadership, skill building and developing core competencies,
  - g. the role and importance of safety and human factors in operating a railway and managing organizational performance and
  - h. emergency planning, management and investigation.

## Certificate Requirements (12 Hours)

The Graduate Certificate in Railway Engineering consists of a minimum of twelve (12) credit hours of core and elective courses. Students shall take three (3) credit hours from a list of core courses, six (6) credit hours from a list of Railway Engineering technical elective courses, and three (3) credit hours from a list of other elective courses. Students can take up to three ECIV 790 courses with a Railway Engineering focus for a maximum of nine (9) credit hours, and up to two ECIV 797 courses with a Railway Engineering focus for a maximum of six (6) credit hours.

### Core Course (3 Hours)

Course	Title	Credits
ECIV 580	Railway Engineering I	3
or ECIV 582	Operation and Logistics of Railway Systems	
<b>Total Credit Hours</b>		<b>3</b>

### Railway Engineering Technical Elective Courses (6 Hours)

Students shall take six (6) credit hours of Railway Engineering technical elective courses. Elective courses are: (i) any core course not applied as a core course; and (ii) any course from the following list:

Course	Title	Credits
ECIV 588	Design of Railway Bridges and Structures	3
ECIV 784	Dynamic Analysis of Railway Systems	3
ECIV 789	Design Project in Railway Engineering	4
ECIV 790	Selected Topics in Civil Engineering	3
ECIV 797	Research in Civil Engineering	3

### Other Elective Courses (3 Hours)

Students shall take three (3) credit hours of other elective courses. Other elective courses are: (i) any Railway Engineering elective course not applied as a Railway Engineering elective course; and (ii) any course from the following list:

Course	Title	Credits
ECIV 705	Deterministic Civil and Environmental Systems Engineering	3
ECIV 707	Management of Engineering Projects	3
ECIV 708	Engineering Risk and Reliability	3
MGMT 718	Management of Human Resources	3

## Computer Science and Engineering

Department Website ([https://www.sc.edu/study/colleges\\_schools/engineering\\_and\\_computing/departments/computer\\_science\\_and\\_engineering/](https://www.sc.edu/study/colleges_schools/engineering_and_computing/departments/computer_science_and_engineering/))

Manton M. Matthews, *Chair*

The Department of Computer Science and Engineering offers master's and doctoral-level degrees in computer science and engineering. In addition, a graduate certificate program in information assurance and security is offered. These programs emphasize student involvement in research programs and projects, many of which are supported by government agencies or are collaborative efforts with local industries. Current research emphasizes work in agent-based computing and artificial intelligence, bioinformatics, computer security and information assurance, computer vision and image processing, embedded and reconfigurable computing, quantum computing, robotics, software quality assurance, and wireless networks.

The M.S. and M.E. degrees are designed to provide a strong foundation for pursuing careers in the computer and information systems industry. The Ph.D. degree prepares graduates for careers in industrial research and university-level teaching and research. The graduate certificate program in information assurance and security is designed to provide information professionals with the background and knowledge needed for management of computer security and information assurance. Additional information on current research projects, detailed course outlines, and other aspects of the graduate program may be found on the departmental Web site, <http://www.cse.sc.edu>.

## Academic Standards

All students are expected to meet the academic standards of The Graduate School.

## Admissions

Requirements for admission to all graduate degree programs in computer science and engineering include the general admission requirements of The Graduate School as well as more stringent departmental requirements, as described below. In general, the admission process is highly competitive. Admissions decisions are based on the quality of the applicant's previous university-level academic work, letters of recommendation, GRE scores, and other evidence of past accomplishments.

*For admission to the M.E., M.S., or Ph.D. program*, applicants normally hold the B.S. degree in computer science and engineering from an ABET-accredited program. Applicants should have completed courses in algorithmic design, data structures, computer organization, analysis of algorithms, operating systems, discrete mathematics, and calculus. Applicants not having courses in all of these subjects may be admitted conditionally while they take the remaining ones. Any required prerequisite courses are an integral part of the student's degree program and must be completed before any graduate degree will be awarded.

*For admission to the Certificate of Graduate Study in Information Assurance and Security program*, applicants normally hold the B.S. degree in computer science, computer engineering, or a related field. In addition, they must have completed courses in data structures and algorithms, operating systems, database management systems, discrete mathematics, linear algebra, and probability and statistics. Students enrolled in other graduate degree programs at USC are

automatically eligible to pursue the certificate as long as they have taken the prerequisite courses.

*For admission to the Master of Software Engineering program, applicants normally hold the B.S. degree in computer science, computer engineering, computer information systems, management information systems, or a closely related field. Applicants should also have at least one year of experience in software development or maintenance. Students not having adequate experience in software development or maintenance will be required to take CSCE 793 Internship in Software Engineering must be completed before the degree will be awarded.*

All applicants must submit GRE scores. International applicants must also submit TOEFL (IBT) or IELTS Intl. Academic Course Type 2 exam scores. The average GRE scores of the accepted applicants for fall 2008 were: verbal 545, quantitative 768, and analytical writing 4.3 (on a 1 to 6 scale).

In addition, all applicants should submit an official transcript from each school or college previously attended, and at least two letters of recommendation.

The admission committee will evaluate all aspects of each application and will make a recommendation on admission to The Graduate School. All application materials must be received by February 1 for fall and summer admission and by October 1 for spring admission.

## Programs

- Artificial Intelligence, Certificate (<https://academicbulletins.sc.edu/graduate/engineering-computing/computer-science-engineering/artificial-intelligence-certificate/>)
- Computer Engineering, M.S. (p. 304)
- Computer Engineering, Ph.D. (p. 305)
- Computer Science, M.S. (p. 306)
- Computer Science, Ph.D. (p. 307)
- Cyber Security Studies, Certificate (p. 307)

## Courses

### CSCE 500 - Computer Programming and Applications (3 Credits)

Concepts and properties of algorithms; programming exercises with emphasis on good programming habits. Credit may not be received for both CSCE 500 and CSCE 145. Open to all majors. May not be used for major credit by computer science and engineering majors.

### CSCE 510 - System Programming (3 Credits)

System software such as command language interpreters, client-server applications, debuggers; mail systems, browsers, macroprocessors, and revision control systems; file systems, processes, threads, and interprocess communication.

**Prerequisites:** CSCE 215, CSCE 240.

### CSCE 512 - System Performance Evaluation (3 Credits)

Measuring, modeling, analyzing, and predicting performance of computer systems and networks; bottleneck analysis; Markovian queuing systems and networks; use of operational and probabilistic models.

**Prerequisites:** CSCE 311, STAT 509 or STAT 515.

### CSCE 513 - Computer Architecture (3 Credits)

Design methodology; processor design; computer arithmetic: algorithms for addition, multiplication, floating point arithmetic; microprogrammed control; memory organization; introduction to parallel architectures.

**Prerequisites:** CSCE 211, CSCE 212.

### CSCE 515 - Computer Network Programming (3 Credits)

Computer networks and communication protocols; socket programming; interprocess communication; development of network software; case studies.

**Prerequisites:** CSCE 311.

### CSCE 516 - Computer Networks (3 Credits)

Structure, design, and analysis of computer networks; ISO/OSI network architecture.

**Prerequisites:** STAT 509 or STAT 515.

### CSCE 517 - Computer Crime and Forensics (3 Credits)

Structure, design, and analysis of computer networks; ISO/OSI network architecture.

**Prerequisites:** CSCE 215.

### CSCE 518 - Ethical Hacking (3 Credits)

Fundamental principles and techniques of ethical hacking, including penetration testing life cycle, planning and scoping, identifying targets and goals, active and passive reconnaissance, enumeration and scanning, exploitation, post-exploitation, and results reporting.

**Prerequisites:** CSCE 215 or previous Linux/UNIX experience.

### CSCE 520 - Database System Design (3 Credits)

Database management systems; database design and implementation; security, integrity, and privacy.

**Prerequisites:** CSCE 240 or GEOG 563.

### CSCE 522 - Information Security Principles (3 Credits)

Threats to information resources and appropriate countermeasures. Cryptography, identification and authentication, access control models and mechanisms, multilevel database security, steganography, Internet security, and intrusion detection and prevention.

**Prerequisites:** CSCE 146; MATH 374 or MATH 174.

### CSCE 526 - Service Oriented Computing (3 Credits)

Cooperative information systems and service-oriented computing. Techniques for achieving coordinated behavior among a decentralized group of information system components. Distributed databases, multiagent systems, conceptual modeling, Web services, and applications.

**Prerequisites:** CSCE 311.

### CSCE 531 - Compiler Construction (3 Credits)

Techniques for design and implementation of compilers, including lexical analysis, parsing, syntax-directed translation, and symbol table management.

**Prerequisites:** CSCE 240.

### CSCE 546 - Mobile Application Development (3 Credits)

Development of mobile applications, including user interface design for mobile, local and cloud data storage techniques, and application architectures.

**Prerequisites:** CSCE 240 or previous programming experience with one of the following programming languages (C/C++, Java, Swift, Python, Matlab, Javascript).

**CSCE 547 - Windows Programming (3 Credits)**

Object-oriented methods and tools for application programming with graphically interactive operating systems.

**Prerequisites:** CSCE 240.

**CSCE 548 - Building Secure Software (3 Credits)**

Construction of software systems resistant to vulnerabilities and attacks. Cryptographic tools. Language, operating system, and network security. Case studies. Development of best practices through programming assignments.

**Prerequisites:** CSCE 240.

**CSCE 551 - Theory of Computation (3 Credits)**

Basic theoretical principles of computing as modeled by formal languages and automata; computability and computational complexity

**Prerequisites:** C or better in CSCE 350 or MATH 300.

**Cross-listed course:** MATH 562

**CSCE 552 - Computer Game Development (3 Credits)**

Design and development of computer games, with emphasis on the technologies used. Hands-on development of computer games.

**Prerequisites:** CSCE 240, CSCE 350.

**CSCE 555 - Algorithms in Bioinformatics (3 Credits)**

Concepts, algorithms and tools for important problems in Bioinformatics, including nucleotide and amino acid sequence alignment, DNA fragment assembly, phylogenetic reconstruction, and protein structure visualization and assessment.

**Prerequisites:** CSCE 350.

**CSCE 557 - Introduction to Cryptography (3 Credits)**

Design of secret codes for secure communication, including encryption and integrity verification: ciphers, cryptographic hashing, and public key cryptosystems such as RSA. Mathematical principles underlying encryption. Code-breaking techniques. Cryptographic protocols.

**Prerequisites:** C or better in CSCE 145 or MATH 241, and at least one of CSCE 355, MATH 300 or MATH 374.

**Cross-listed course:** MATH 587

**CSCE 561 - Numerical Analysis (3 Credits)**

Interpolation and approximation of functions; solution of algebraic equations; numerical differentiation and integration; numerical solutions of ordinary differential equations and boundary value problems; computer implementation of algorithms.

**Prerequisites:** C or better MATH 520 or in both MATH 242 and MATH 344.

**Cross-listed course:** MATH 527

**CSCE 563 - Systems Simulation (3 Credits)**

Computer simulation of real systems; principles of system organization; random number generation; programming exercises in a simulation language.

**Prerequisites:** CSCE 240, STAT 509 or STAT 515.

**CSCE 564 - Computational Science (3 Credits)**

Parallel algorithms; scientific visualization; techniques for solving scientific problems.

**Prerequisites:** MATH 526, CSCE 146 or CSCE 207 or CSCE 500.

**CSCE 565 - Introduction to Computer Graphics (3 Credits)**

Graphics hardware; graphics primitives; two-dimensional and three-dimensional viewing; basic modeling.

**Prerequisites:** CSCE 240, MATH 526 or MATH 544.

**CSCE 567 - Visualization Tools (3 Credits)**

Scientific visualization tools as applied to sampled and generated data; methods for data manipulation and representation; investigation of visualization techniques.

**Prerequisites:** CSCE 145 or CSCE 206 or CSCE 207.

**CSCE 569 - Parallel Computing (3 Credits)**

Architecture and interconnection of parallel computers; parallel programming models and applications; issues in high-performance computing; programming of parallel computers.

**Prerequisites:** knowledge of programming in a high-level language; MATH 526 or MATH 544.

**CSCE 571 - Critical Interactives (3 Credits)**

Foundational techniques in multidisciplinary software development, specifically of applications designed to present sensitive, sometimes controversial, materials in ways to engender empathic awareness of the interactor.

**Cross-listed course:** FAMS 581

**CSCE 572 - Human-Computer Interaction (3 Credits)**

Interdisciplinary approach to interaction design, user-centered design, human abilities, survey development, experimental study methodology, heuristic evaluations, usability testing, universal design, and accessibility.

**Prerequisites:** Undergraduate or graduate standing in CSE or permission of the instructor.

**CSCE 574 - Robotics (3 Credits)**

Design and application of robotic systems; emphasis on mobile robots and intelligent machines.

**Prerequisites:** CSCE 211, CSCE 212, CSCE 240.

**CSCE 578 - Text Processing (3 Credits)**

Text and natural language processing; formal models and data structures appropriate for text processing; selected topics in computational linguistics, stylistics, and content analysis.

**Prerequisites:** CSCE 330, CSCE 355.

**CSCE 580 - Artificial Intelligence (3 Credits)**

Heuristic problem solving, theorem proving, and knowledge representation, including the use of appropriate programming languages and tools.

**Prerequisites:** CSCE 350.

**CSCE 582 - Bayesian Networks and Decision Graphs (3 Credits)**

Normative approaches to uncertainty in artificial intelligence. Probabilistic and causal modeling with Bayesian networks and influence diagrams. Applications in decision analysis and support. Algorithms for probability update in graphical models.

**Prerequisites:** CSCE 350; STAT 509 or STAT 515.

**Cross-listed course:** STAT 582

**CSCE 585 - Machine Learning Systems (3 Credits)**

Design and implementation of machine learning systems, Deep learning systems stack, machine learning platforms, scalable and distributed machine learning.

**Prerequisites:** C or better in CSCE 240 or CSCE 206.

**CSCE 587 - Big Data Analytics (3 Credits)**

Foundational techniques and tools required for data science and big data analytics. Concepts, principles, and techniques applicable to any technology and industry for establishing a baseline that can be enhanced by future study.

**Prerequisites:** STAT 509, STAT 513, or STAT 515.

**Cross-listed course:** STAT 587

**CSCE 590 - Topics in Information Technology (3 Credits)**

Reading and research on selected topics in information technology. Course content varies and will be announced in the schedule of courses by title. May be repeated for credit as topics vary.

**CSCE 594 - Strategic Management of Information Systems (3 Credits)**

Strategic management and use of information systems in organizations.

**Cross-listed course:** MGSC 594

**CSCE 611 - Advanced Digital Design (3 Credits)**

Design techniques for logic systems; emphasis on higher-level CAD tools such as hardware description languages and functional modeling.

**Prerequisites:** CSCE 212.

**CSCE 612 - VLSI System Design (3 Credits)**

VLSI design process models, introduction to EDA tools, HDL modeling and simulation, logic synthesis and simulation, benchmark design projects.

**Prerequisites:** CSCE 211.

**CSCE 613 - Fundamentals of VLSI Chip Design (3 Credits)**

Design of VLSI circuits, including standard processes, circuit design, layout, and CAD tools. Lecture and guided design projects.

**Prerequisites:** ELEC 371.

**CSCE 711 - Advanced Operating Systems (3 Credits)**

Operating system organization and interactive processing systems, multiprogramming systems, process management, task scheduling, resource control, deadlocks.

**Prerequisites:** CSCE 311.

**CSCE 713 - Advanced Computer Architecture (3 Credits)**

Architecture of high-performance computers, including array processors, multiprocessor systems, data flow computers, and distributed processing systems.

**Prerequisites:** CSCE 311 and CSCE 513.

**CSCE 715 - Network Systems Security (3 Credits)**

Analysis of security threats in TCP/IP networks. Design of safeguards. Coverage of security threats at each of the OSI layers. Application of cryptographic protocols for secure communication across a network.

**Prerequisites:** CSCE 515 or CSCE 516.

**CSCE 716 - Design for Reliability (3 Credits)**

Design of more reliable systems through the application of reliability theory and models; reliability modeling; design techniques; testing; and requirement specifications.

**Prerequisites:** STAT 509 or STAT 511, or MATH 511.

**CSCE 717 - Computer System Performance and Reliability Analysis (3 Credits)**

Evaluation of computer system performance and reliability using reliability block diagrams, fault trees, reliability graphics, queuing networks, Markov models, and Markov reward models.

**Prerequisites:** STAT 509 or STAT 511.

**CSCE 718 - Real-Time Computer Applications (3 Credits)**

Problems of real-time computer applications in process control or similar areas; task scheduling; real-time operating systems; advanced interrupt structures; memory management techniques.

**Prerequisites:** CSCE 245, CSCE 311.

**CSCE 719 - Security and Privacy for Wireless Networks (3 Credits)**

This course focuses on the security and privacy issues associated with wireless networks. Various attacks against wireless networks and their defense strategies will be analyzed. Students are able to embark in research of wireless network security.

**Prerequisites:** CSCE 416.

**CSCE 721 - Physical Database Design (3 Credits)**

Components of a database management system; implementation issues; query optimization; file organization; file organizations' transaction management; fault recovery; security; system performance.

**Prerequisites:** CSCE 520.

**CSCE 723 - Advanced Database Design (3 Credits)**

Database design methodologies and tools; data models; implementation languages; user interfaces.

**Prerequisites:** CSCE 520.

**CSCE 725 - Information Retrieval: Algorithms and Models (3 Credits)**

Structure, design, evaluation, and use of information retrieval systems; algorithms and mathematical models for information retrieval; storage and retrieval of textual data in information systems.

**CSCE 727 - Information Warfare (3 Credits)**

Current trends and challenges in information warfare. High-level analysis of information warfare threats, like cyber terrorism, espionage, Internet fraud, intelligence activities, cyber ethics, and law enforcement.

**Prerequisites:** CSCE 522.

**CSCE 730 - Programming Language Semantics (3 Credits)**

Approaches for specifying programming language semantics, including operational, axiomatic, and denotational specification.

**Prerequisites:** CSCE 531.

**CSCE 740 - Software Engineering (3 Credits)**

Current practices and research in software development, requirements definition, design, program testing and reliability, maintenance, and management.

**Prerequisites:** CSCE 240.

**CSCE 741 - Software Process (3 Credits)**

Personal, team, and organizational software processes; personal and organizational maturity; application of software process and management concepts during software development, primarily at the individual level.

**CSCE 742 - Software Architectures (3 Credits)**

Structural organizations for software systems as collections of interconnected components: formal models and languages; design tools and guidelines.

**CSCE 743 - Software Requirements (3 Credits)**

Elicitation, analysis, and validation of software requirements, specification of software systems including formal specification methods; CASE tools.

**Prerequisite or Corequisite:** CSCE 740.

**CSCE 744 - Object-Oriented Analysis and Design (3 Credits)**

Fundamentals of object-oriented technology; object modeling of structure, function, and time-dependent behavior; system analysis and design.

**Prerequisites:** CSCE 350.

**CSCE 745 - Object-Oriented Programming Methods (3 Credits)**

Object-oriented programming paradigm, including encapsulation, inheritance, reusable classes, object classification, specialization, and message passing; case studies and applications.

**Prerequisites:** CSCE 245.

**CSCE 747 - Software Testing and Quality Assurance (3 Credits)**

Structural and functional techniques for testing software; code inspection, peer review, test verification and validation; statistical testing methods; preventing and detecting errors; testing metrics; test plans; formal methods of testing.

**Prerequisites:** CSCE 740.

**CSCE 750 - Analysis of Algorithms (3 Credits)**

Algorithm design techniques; algorithms and data structures for sets and graphs; time and space complexity; sorting and searching; NP-complete problems.

**Prerequisites:** CSCE 350.

**CSCE 755 - Computability, Automata, and Formal Languages (3 Credits)**

Formal models of computation, including finite state automata, Turing machines, recursive functions, formal grammars, and abstract complexity theory.

**Prerequisites:** CSCE 355 or CSCE 551.

**CSCE 758 - Probabilistic System Analysis (3 Credits)**

Application of probability theory and stochastic processes to analyze the dynamic behavior of engineering systems.

**Prerequisites:** STAT 509 or STAT 511.

**CSCE 760 - Numerical Analysis I (3 Credits)**

Numerical solution of equations and systems of linear equations, polynomial approximation, difference calculus, solution of ordinary and partial differential equations, least squares and sets of orthogonal polynomials, Gaussian quadrature.

**Prerequisites:** MATH 526 or MATH 544.

**CSCE 761 - Numerical Analysis II (3 Credits)**

Continuation of CSCE 760.

**Prerequisites:** CSCE 760.

**CSCE 763 - Digital Image Processing (3 Credits)**

Concepts and techniques for digital image processing; emphasis on low-level processes that analyze discrete images at the pixel level.

**CSCE 765 - Computer Graphics System Design (3 Credits)**

Graphics data structures, graphics languages, modeling, raster displays, 3-D shading, hidden surface algorithms.

**Prerequisites:** CSCE 565.

**CSCE 766 - Scientific Visualization (3 Credits)**

Visualization techniques for scientific computing; interactive steering of calculations; animation and rendering techniques for multivariate data analysis.

**Prerequisites:** CSCE 565.

**CSCE 767 - Interactive Computer Systems (3 Credits)**

Principles for the design of systems supporting effective human-computer interaction; interaction styles; displays and interactive devices; user assistance; system design and evaluation.

**CSCE 768 - Pattern Recognition and Classification (3 Credits)**

Bayesian classifiers; optimal risk schemes; error rates; numerical methods; implementation; architectures.

**Prerequisites:** STAT 509 or STAT 510 or STAT 511.

**CSCE 769 - Computational Structural Biology (3 Credits)**

Theoretical concepts and algorithmic tools currently utilized in the field of protein folding such as Xplor-NIH and ROSETTA are presented. Participants are enabled to embark in research of protein folding.

**Prerequisites:** linear algebra.

**CSCE 771 - Computer Processing of Natural Language (3 Credits)**

Computational models for the analysis and synthesis of natural language; representations for syntax and semantics; applications to text-to-speech conversion, speech recognition, and language understanding.

**Prerequisites:** CSCE 580.

**CSCE 772 - Computer Speech Processing (3 Credits)**

A/D conversion, digital filters, discrete Fourier transform and FFT, acoustics of speech, and synthesis and recognition of speech.

**Prerequisites:** CSCE 580.

**CSCE 774 - Robotics Systems (3 Credits)**

Design and operation of robot systems; dynamics, control, and motion trajectories of manipulators; visual, auditory, and tactile sensing systems; planning and learning.

**Prerequisites:** CSCE 574.

**CSCE 780 - Knowledge Representation (3 Credits)**

Representation techniques and languages for symbolic knowledge, including predicate calculus, frame-based systems, and terminological systems; computer reasoning using these systems.

**Prerequisites:** CSCE 580.

**CSCE 781 - Knowledge Systems (3 Credits)**

Expert system domains, knowledge representation techniques, inference engines, and knowledge acquisition methods.

**Prerequisites:** CSCE 580.

**CSCE 782 - Multiagent Systems (3 Credits)**

Coordinated problem solving by multiple knowledge systems.

**Prerequisites:** CSCE 580.

**CSCE 784 - Neural Information Processing (3 Credits)**

Mathematical foundations of biological and artificial neural networks, supervised and unsupervised systems, applications.

**Prerequisites:** MATH 526 or MATH 544.

**CSCE 787 - Introduction to Fuzzy Logic (3 Credits)**

Principles of fuzzy set theory, fuzzy relations, and fuzzy logic; fuzzy "if-then" rules.

**Prerequisites:** MATH 174.

**CSCE 790 - Topics in Information Technology (1-3 Credits)**

Reading and research on selected topics in information technology. Course content varies and will be announced in the schedule of courses by title. May be repeated for credit as topics vary.

**CSCE 791 - Seminar in Advances in Computing (1 Credit)**

Technical writing and presentations in major computing research areas; ethics in research and writing.

**CSCE 793 - Internship in Software Engineering (1 Credit)**

Work. Written report required. Not auditable.

**CSCE 797 - Individual Study and Research (1-12 Credits)**

Individual research to be arranged with the instructor.

**CSCE 798 - Directed Study and Research (1-12 Credits)**

Individual research to be arranged with the instructor.

**CSCE 799 - Thesis Preparation (1-12 Credits)****CSCE 813 - Internet Security (3 Credits)**

Study security threats and prevention/detection/response techniques on the Internet, including hackers, masqueraders, information spoofing, sniffing, and distribution of damaging software. Security analysis of Web applications.

**Prerequisites:** CSCE 522 and CSCE 715.

**CSCE 814 - Distributed Systems Security (3 Credits)**

Security mechanisms of distributed software systems, including cryptographic applications. Secure multiparty computation, group-based cryptography, and security mechanisms for emerging distributed architectures.

**Prerequisites:** CSCE 522.

**CSCE 815 - Computer Communications (3 Credits)**

Contemporary computer communication protocols and network architectures.

**Prerequisites:** CSCE 515 or CSCE 516.

**CSCE 818 - Top-Down VLSI Design (3 Credits)**

VLSI system design automation, hardware description language-based design, multi-methodology design, and introduction to HDL support tools.

**Prerequisites:** CSCE 611 or CSCE 612.

**CSCE 819 - Custom VLSI Design (3 Credits)**

Custom design methodology design rules, stick notation, logic synthesis, and circuit layout; symbolic layout languages; introduction to CAD tools.

**Prerequisites:** CSCE 611 or CSCE 612.

**CSCE 821 - Distributed Database Design (3 Credits)**

Architecture, design, and implementation of distributed database managements systems; data fragmentation, replication, and allocation; query processing and transaction management; distributed object database management systems.

**Prerequisites:** CSCE 520.

**CSCE 822 - Data Mining and Warehousing (3 Credits)**

Information processing techniques and mathematical tools to assemble, access, and analyze data for decision support and knowledge discovery.

**Prerequisites:** CSCE 520.

**CSCE 824 - Secure Database Systems (3 Credits)**

Security threats to database systems. Access control models, multilevel security, integrity, Web-based databases, and data inference problem. Formal models of multilevel security, confidentiality versus availability and integrity.

**Prerequisites:** CSCE 522.

**CSCE 826 - Cooperative Information Systems (3 Credits)**

Strategies for achieving coordinated behavior among a heterogeneous group of information system components; world-wide information networks and applications in health care, logistics, telecommunications, and manufacturing automation.

**Prerequisites:** CSCE 520, CSCE 580.

**CSCE 846 - Software Reliability and Safety (3 Credits)**

Reliability and safety of computer-intensive systems; software reliability models and analysis; operational profiles; hazard analysis using fault trees and event trees; formal verification of safety-critical systems.

**Prerequisites:** STAT 509 or STAT 510 or STAT 511.

**CSCE 850 - Advanced Analysis of Algorithms (3 Credits)**

Definitions of algorithms and formal models of computation; concepts of space and time; synthesis and analysis of algorithms for sorting, search graphs, set manipulation and pattern matching; NP-complete, and intractable problem.

**Prerequisites:** CSCE 750.

**CSCE 853 - Formal Methods in Computer Security (3 Credits)**

Formal techniques applied to computer security, including formal specification language for security properties, security analysis utilities, domain-specific security concerns, and case studies of formally verified secure systems.

**Prerequisites:** CSCE 522 and CSCE 715.

**CSCE 865 - Advanced Computer Graphics (3 Credits)**

Input and display devices, data structures, architectures, primitives, and geometrical transformations appropriate to computer graphics, parametric surfaces.

**Prerequisites:** CSCE 765.

**CSCE 867 - Computer Vision (3 Credits)**

Scene segmentation using texture, color, motion; representation of 2-D or 3-D structures; knowledge-based vision systems.

**Prerequisites:** CSCE 763.

**CSCE 868 - Advanced Pattern Recognition (3 Credits)**

Feature nomination, selection, extraction, and evaluation; deterministic, stochastic, and fuzzy models for classifier design; parameter estimation; error rate estimation; clustering and sequential learning.

**Prerequisites:** CSCE 768.

**CSCE 883 - Machine Learning (3 Credits)**

Fundamentals of machine learning including rote learning, learning from examples, learning from observations, and learning by analogy; knowledge acquisition for expert systems.

**Prerequisites:** CSCE 580.

**CSCE 895 - Ph.D. Seminar (1-3 Credits)****CSCE 899 - Dissertation Preparation (1-12 Credits)**

## Computer Engineering, M.S.

### Learning Outcomes

- Graduates should demonstrate the skills to develop and implement information security and information assurance policies and procedures.
- Graduates should demonstrate the ability to identify technical solutions to meet information security requirements.



- At the time of graduation a Master of Science/Engineering student should be able to describe the techniques and principles for the development of high performance computer systems, describe the details of extant computer architectures, and quantitatively analyze aspects of computer architecture and draw conclusions about performance.
- At the time of graduation a Master of Science/Engineering student should be able to use models of languages, such as regular expressions and context-free grammars, to develop parsers for specific languages and construct intermediate representations such as abstract syntax trees.
- At the time of graduation a Master of Science/Engineering student should be able to work with basic aspects of discrete math related to the analysis of algorithms and data structures, e.g., sums, probability, basic properties of trees and graphs, asymptotic analysis and amortized analysis.
- At the time of graduation a Master of Science/Engineering student should be able to integrate components to form coherent well designed system.

## Degree Requirements (30 Hours)

The Master of Science in Computer Engineering (MSCE) degree requires 30 credit hours beyond the BS. Students in the MSCE program may elect either the thesis or the non-thesis option.

### Coursework

#### Core (10 Hours)

Course	Title	Credits
CSCE 513	Computer Architecture	3
CSCE 611	Advanced Digital Design	3
CSCE 750	Analysis of Algorithms	3
CSCE 791	Seminar in Advances in Computing	1
<b>Total Credit Hours</b>		<b>10</b>

#### Electives (20 Hours)

- A maximum of six hours in non-CSCE courses approved by the Graduate Director and at most three hours of CSCE 798 may be applied toward the degree. CSCE 797 may not be applied toward the degree.

Students who choose the non-thesis option must complete 6 hours from the following list:

Course	Title	Credits
CSCE 512	System Performance Evaluation	3
CSCE 516	Computer Networks	3
CSCE 569	Parallel Computing	3
CSCE 574	Robotics	3
CSCE 613	Fundamentals of VLSI Chip Design	3

#### Thesis Option

Students who choose the thesis option must substitute 6 hours of thesis preparation (CSCE 799) for electives and defend the thesis in a public presentation. The electives must also include at least 8 hours in CSCE courses numbered 700 and above.

#### Non-Thesis Option

Students who choose the non-thesis option must complete at least 11 of the 20 hours of electives in CSCE courses numbered 700 and above,

and pass a written comprehensive examination administered at the end of Fall or Spring semester.

## Computer Engineering, Ph.D.

### Learning Outcomes

- Students will demonstrate knowledge of computer architecture.
- Students will demonstrate knowledge of compiler construction.
- Students will demonstrate knowledge of the theory of computation.
- Students will demonstrate knowledge of the analysis of algorithms.
- At the time of graduation a Doctor of Philosophy student should be able to perform research involving computer systems for the solution of problems.
- At the time of graduation a Doctor of Philosophy student should be able to formulate problems in their research area that are challenging and of wide interest in the area.
- At the time of graduation a Doctor of Philosophy student should be able to actively contribute to the research in their area.
- At the time of graduation a Doctor of Philosophy student should be able to communicate effectively about their research in computer science and engineering.

## Degree Requirements (60 Post-Baccalaureate Hours)

Requirements for the Ph.D. degree in Computer Engineering fall into four categories: course requirements, the qualifying examination, the comprehensive examination, and the dissertation.

### Core (10 Hours)

The coursework must include the following core courses.

Course	Title	Credits
CSCE 513	Computer Architecture	3
CSCE 611	Advanced Digital Design	3
CSCE 750	Analysis of Algorithms	3
CSCE 791	Seminar in Advances in Computing	1
<b>Total Credit Hours</b>		<b>10</b>

### Computer Engineering Elective (3 Hours)

Course	Title	Credits
Select one of the following:		3
CSCE 512	System Performance Evaluation	3
CSCE 516	Computer Networks	3
CSCE 569	Parallel Computing	3
CSCE 574	Robotics	3
CSCE 613	Fundamentals of VLSI Chip Design	3
<b>Total Credit Hours</b>		<b>3</b>

### Dissertation Preparation (12 Hours)

Course	Title	Credits
CSCE 899	Dissertation Preparation	12
<b>Total Credit Hours</b>		<b>12</b>

## Advanced CSCE Electives (20 Hours)

In addition to the above requirements, students must complete 20 hours in CSCE courses numbered 700 or above.

## Other Electives (15 Hours)

- In addition to the above requirements, students must complete 15 hours of CSCE courses numbered above 500.
- Graduate level courses from other departments, with approval from Graduate Director, can satisfy this requirement.
- Students who enter the program with a Master's degree in Computer Engineering are exempt from this requirement.

Note: Students entering the program without a Masters degree are encouraged to enroll concurrently in and earn an MS in Computer Engineering.

At most 9 hours of CSCE 798 and not more than 12 hours of CSCE 899 may be applied toward the degree. Neither CSCE 797 nor CSCE 799 may be applied toward the degree.

The student's dissertation committee must approve the program of study, so this committee should be formed as early in a student's course of study as possible. Prior to admission to candidacy, the student is required to pass a written qualifying examination. This examination is designed to test fundamental knowledge and conceptual understanding of the mainstream areas of computer engineering. The Ph.D. comprehensive examination combines a written and an oral examination and seeks to discover whether the student has a sufficiently deep understanding of topics in the area of interest to carry out the proposed research. The dissertation committee, which also will make the final decision on whether the student has passed, constructs the research component. The oral examination is an in-depth test on the subject matter related to the student's dissertation topic and written exam. The committee may also examine the student on any other material it deems relevant. After completing the research and writing the dissertation, the student must defend the work in a public presentation.

# Computer Science, M.S.

## Learning Outcomes

- At the time of graduation a Master of Science/Engineering student should be able to describe the techniques and principles for the development of high performance computer systems.
- At the time of graduation a Master of Science/Engineering student should be able to describe the details of extant computer architectures.
- At the time of graduation a Master of Science/Engineering student should be able to quantitatively analyze aspects of computer architecture and draw conclusions about performance.
- At the time of graduation a Master of Science/Engineering student should be able to use models of languages, such as regular expressions and context-free grammars, to develop parsers for specific languages and construct intermediate representations such as abstract syntax trees.
- At the time of graduation a Master of Science/Engineering student should be able to decorate abstract syntax trees according to the scope and type rules of a language, and use the decorated tree to generate intermediate code.
- At the time of graduation a Master of Science/Engineering student should be able to recognize optimizations that compilers apply to transform intermediate code into more efficient code.
- At the time of graduation a Master of Science/Engineering student should be able to work with basic aspects of discrete math related to the analysis of algorithms and data structures, e.g., sums, probability, basic properties of trees and graphs, asymptotic analysis and amortized analysis.
- At the time of graduation a Master of Science/Engineering student should be able to analyze the time and space resources used by complex algorithms.
- At the time of graduation a Master of Science/Engineering student should be able to analyze the time and space resources used by complex algorithms.
- At the time of graduation a Master of Science/Engineering student should be able to use high-order principles of algorithm construction, e.g., divide-and-conquer, dynamic programming, greedy algorithms, graph algorithms.
- At the time of graduation a Master of Science/Engineering student should be able to understand the concept of NP-completeness and be able to find simply polynomial reductions between decision problems.
- At the time of graduation a Master of Science/Engineering student should be able to integrate components to form coherent well designed system.
- At the time of graduation a Master of Science student should be able to independently explore a research topic.

## Degree Requirements (30 Hours)

The Master of Science in Computer Science (MSCS) degree requires 30 credit hours beyond the BS. Students in the MSCS program may elect either the thesis or the non-thesis option. The course work must include:

### Core (10 hours)

Course	Title	Credits
CSCE 513	Computer Architecture	3
CSCE 531	Compiler Construction	3
CSCE 750	Analysis of Algorithms	3
CSCE 791	Seminar in Advances in Computing	1
<b>Total Credit Hours</b>		<b>10</b>

### Electives (20 hours)

A maximum of six hours in non-CSCE courses and at most three hours of CSCE 798 may be applied toward the degree. CSCE 797 may not be applied toward the degree.

Course	Title	Credits
CSCE 799	Thesis Preparation	1-12
<b>Total Credit Hours</b>		<b>1-12</b>

### Thesis Option

Students who choose the thesis option may substitute 6 hours of thesis preparation (CSCE 799) for electives. In addition, students must complete at least 12 hours in CSCE courses numbered 700 and above, and defend the thesis in a public presentation.

### Non-Thesis Option

Students who choose the non-thesis option must complete at least 15 hours in CSCE courses numbered 700 and above, and pass a written

comprehensive examination offered at the end of Fall and Spring semesters.

## Computer Science, Ph.D.

### Learning Outcomes

- Students will demonstrate knowledge of computer architecture.
- Students will demonstrate knowledge of compiler construction.
- Students will demonstrate knowledge of the theory of computation.
- Students will demonstrate knowledge of the analysis of algorithms.
- At the time of graduation a Doctor of Philosophy student should be able to perform research involving computer systems for the solution of problems.
- At the time of graduation a Doctor of Philosophy student should be able to formulate problems in their research area that are challenging and of wide interest in the area.
- At the time of graduation a Doctor of Philosophy student should be able to actively contribute to the research in their area.
- At the time of graduation a Doctor of Philosophy student should be able to communicate effectively about their research in computer science and engineering.

### Degree Requirements (60 Post Baccalaureate Hours)

Requirements for the Ph.D. degree in computer science fall into four categories: course requirements, the qualifying examination, the comprehensive examination, and the dissertation.

#### Core (13 hours)

The coursework must include the following core courses

Course	Title	Credits
CSCE 513	Computer Architecture	3
CSCE 531	Compiler Construction	3
CSCE 551	Theory of Computation	3
CSCE 750	Analysis of Algorithms	3
CSCE 791	Seminar in Advances in Computing	1
<b>Total Credit Hours</b>		<b>13</b>

#### Dissertation Preparation (12 hours)

Course	Title	Credits
CSCE 899	Dissertation Preparation	12
<b>Total Credit Hours</b>		<b>12</b>

#### Advanced CSCE Electives (20 hours)

- In addition to the above requirements, students must complete 20 hours in CSCE courses numbered 700 or above.

#### Other Electives (15 hours)

- In addition to the above requirements, students must complete 15 hours of CSCE courses numbered above 500.
- Graduate level courses from other departments, with approval from Graduate Director, can satisfy this requirement.
- Students who enter the program with a Master's degree in Computer Science are exempt from this requirement.

Note: Students entering the program without a Masters degree are encouraged to concurrently enroll in and earn an MS in Computer Science.

At most 9 hours of CSCE 798 and not more than 12 hours of CSCE 899 may be applied toward the degree. Neither CSCE 797 nor CSCE 799 may be applied toward the degree.

The student's dissertation committee must approve the program of study, so this committee should be formed as early in a student's course of study as possible. The dissertation committee must consist of not fewer than 5 members, including one external member outside the Department of Computer Science and Engineering,

Prior to admission to candidacy, the student is required to pass a written qualifying examination. This examination is designed to test fundamental knowledge and conceptual understanding of the mainstream areas of computer science and engineering.

The Ph.D. comprehensive examination combines a written and an oral examination and seeks to discover whether the student has a sufficiently deep understanding of topics in the area of interest to carry out the proposed research. The written examination consists of two portions: the core, including architecture, algorithms, theory and compiler construction; and the research area of the student. The core portion is constructed and graded by the faculty as a whole. The dissertation committee, which will also make the final decision on whether the student has passed, constructs the research component. The oral examination is an in-depth test on the subject matter related to the student's dissertation topic and written exam. The committee may also examine the student on any other material it deems relevant. After completing the research and writing the dissertation, the student must defend the work in a public presentation.

## Cyber Security Studies, Certificate

### Learning Outcomes

- At the time of graduation a Certificate of Graduate Studies in Cyber Security Studies student should be able to understand individual's privacy rights, related laws and regulations, and the use of information assurance technology to support the enforcement of these rights.
- At the time of graduation a Certificate of Graduate Studies in Cyber Security Studies student should be able to describe national and international aspects of information assurance activities, related laws and policies, and develop information security measures that satisfy national and international restrictions and regulations.
- At the time of graduation a Certificate of Graduate Studies in Cyber Security Studies student should be able to apply fundamental information assurance principles to perform information security risk analysis.
- At the time of graduation a Certificate of Graduate Studies in Cyber Security Studies student should be able to analyze, design, and use cryptography algorithms.
- At the time of graduation a Certificate of Graduate Studies in Cyber Security Studies student should be able to: analyze and verify security properties of network security designs.
- At the time of graduation a Certificate of Graduate Studies in Cyber Security Studies student should be able to communicate with and provide support to investigate personnel in incident handling activities.

- At the time of graduation a Certificate of Graduate Studies in Cyber Security Studies student should be able to describe national and international aspects of information assurance activities, related laws and policies, and develop information security measures that satisfy national and international restrictions and regulations.
- At the time of graduation a Certificate of Graduate Studies in Cyber Security Studies student should be able to investigate and master new security tools, techniques and protocols.
- At the time of graduation a Certificate of Graduate Studies in Cyber Security Studies student should be able to: evaluate system vulnerabilities, develop incident prevention and detection policies and procedures, and appropriate incident response capabilities according to national standards and regulations.
- At the time of graduation a Certificate of Graduate Studies in Cyber Security Studies student should be able to: design, implement, evaluate, and maintain information assurance policies and mechanisms, perform audit procedures, and educate end users about information assurance.
- At the time of graduation a Certificate of Graduate Studies in Cyber Security Studies student should be able to: communicate with and provide support to investigative personnel in incident handling activities.

## Certificate Requirements (12 Hours)

The graduate certificate program in Cyber Security Studies requires at least 12 hours of graduate study, at least half of which must be courses at the 700-level or above with the CSCE designator, completed within a period of six years before the award of the certificate.

### Core Courses (6 Hours)

Course	Title	Credits
CSCE 522	Information Security Principles	3
CSCE 715	Network Systems Security	3
<b>Total Credit Hours</b>		<b>6</b>

### Additional Courses (6 Hours)

At least 6 hours of additional courses must be selected with the approval of the director of graduate studies. Up to 6 hours of appropriate courses may be taken from other departments and/or by transfer credit.

## Electrical Engineering

Department Website ([https://www.sc.edu/study/colleges\\_schools/engineering\\_and\\_computing/departments/electrical\\_engineering/](https://www.sc.edu/study/colleges_schools/engineering_and_computing/departments/electrical_engineering/))

Roger Dougal, *Chair*

Graduate programs of the Department of Electrical Engineering emphasize research-oriented graduate study through the Doctor of Philosophy (Ph.D.) and Master of Science (M.S.) programs, and professional development through the Master of Engineering (M.E.) program. Financial assistance is available for the EE graduate students pursuing Ph.D. and M.S. degrees, but applicants should be aware that both financial assistance and the availability of faculty to supervise research are decided on a highly competitive basis.

APOGEE (A Program of Graduate Engineering Education) provides a mechanism for qualified engineers to earn a graduate-level degree while maintaining full-time employment. The program delivers graduate

courses through a media-based system incorporating television, videotapes, the Internet, digital video, and periodic visits to campus.

The electrical engineering department is currently highly ranked in both program quality and faculty research productivity in the South (as per National Research Council), and strives to prepare the graduate students for highly successful careers in academia, industry, and government laboratories.

## Research Focus Areas

The EE Department's core research expertise is in the following areas:

- Power and Energy Systems
- Communication and Electromagnets
- Electronic Materials and Devices
- Decision and Control

## Admission Requirements

Requirements for admission to graduate degree programs in electrical engineering (M.E., M.S., Ph.D.) include the general admission requirements of The Graduate School as well as more stringent departmental requirements, as described below. In general, the admissions process is highly competitive. Admissions decisions are based on the quality of the applicant's previous university-level academic work (as reflected by grade point average, or GPA), letters of recommendation (at least two letters are required for evaluation), GRE scores, and other evidence of past accomplishments.

*For admission to the M.E., M.S., and Ph.D. degree programs in electrical engineering, applicants normally hold the B.S. degree in electrical engineering from an ABET-accredited engineering program. Students holding B.S. degrees may apply for direct admission to the doctoral program; it is not necessary to complete a master's degree first. Applicants with degrees (B.S. or higher) in other engineering disciplines or physics may be admitted with additional remedial course requirements in electrical engineering at the undergraduate level. Remedial courses will typically include the prerequisites for required graduate courses, and may include additional courses in mathematics. The detailed specification of course requirements and substitutions of courses from other universities will be considered on a case-by-case basis.*

M.S. and Ph.D. applicants are strongly encouraged to distinguish their area of specialization when applying to the Graduate Program in order to identify a Research Advisor. The M.S. and Ph.D. applicants must secure an advisor who is willing to supervise him or her before being admitted into the program

GRE scores must be submitted by all applicants to Electrical Engineering graduate programs. Students who have obtained a BS degree from the University of South Carolina and are applying for the ME program are exempt from the GRE requirement. International applicants must also submit TOEFL or IELTS Intl. Academic Course Type 2 exam scores. All applicants should submit a statement of purpose (or similar essay) that describes the applicant's background, research interests, and whether or not financial aid is required. For students seeking a research-oriented degree (M.S. or Ph.D.), a preliminary contact with a research advisor is strongly suggested.

Typical successful students have GRE scores of at least 153 (verbal), 155 (quantitative), and 3.0 (analytical). A TOEFL score greater than 80 (internet-based) or 570 (paper-based) is also required by the Graduate

School. The typical overall band score on the IELTS Intl. Academic Course Type 2 exam is 6.5.

## Programs

- Electrical Engineering, M.E. (p. 311)
- Electrical Engineering, M.S. (p. 311)
- Electrical Engineering, Ph.D. (p. 311)

## Courses

### ELCT 510 - Photovoltaic Materials and Devices (3 Credits)

Fundamentals of photovoltaic solar cell technologies. Design and operation of solar cells, including efficiency analysis and cost benefit. Applications to green and sustainable energy systems.

**Prerequisites:** C or better in ELCT 363.

### ELCT 521 - Introduction to Microwaves (3 Credits)

Introduction to plane electromagnetic wave propagation, transmission lines, transmission line equations, input impedance, waveguides and cavities, antennas and antenna arrays, microwave modeling.

**Prerequisites:** ELCT 361 or PHYS 504.

### ELCT 530 - Industrial Controls (3 Credits)

The embedded electronics and software used in data acquisition, and process and instrument control in an industrial or manufacturing environment.

**Prerequisites:** ELCT 331.

### ELCT 531 - Digital Control Systems (3 Credits)

Analysis and design of discrete-time control systems, implementation of control systems using digital electronic systems. Applications to electrical systems.

**Prerequisites:** ELCT 331.

### ELCT 533 - System Health Management (3 Credits)

Sensing, data acquisition, and data processing for evaluation of performance and system health. Integration and implementation of health management systems.

**Prerequisites:** ELCT 321 or equivalent.

### ELCT 541 - Sensors for Biomedicine (3 Credits)

Operating principles and design of bioelectric sensors and sensor systems for medical applications.

**Prerequisites:** C or better in ELCT 361, ELCT 363 and ELCT 371.

### ELCT 551 - Power Systems Design and Analysis (3 Credits)

Transmission line design, load flow, and short circuit analysis of power systems.

**Prerequisites:** ELCT 331.

### ELCT 553 - Electromechanical Energy Conversion (3 Credits)

Analysis and design of electromechanical energy conversion systems, including electrical machines and electronic drives.

**Prerequisites:** ELCT 331, ELCT 361.

### ELCT 554 - Integration of Photovoltaics in Modern Power Systems (3 Credits)

Analysis and design of power systems in presence of photovoltaic generation with focus on protection systems, control, power quality.

**Prerequisites:** ELCT 551.

### ELCT 559 - Special Topics in Distributed Energy Resources for Electric Energy Systems (3 Credits)

Special topics in distributed energy resources for modern electrical energy systems. Course content varies and will be announced in the schedule of classes by title. May be repeated as topics vary.

**Prerequisite or Corequisite:** ELCT 551.

### ELCT 562 - Wireless Communications (3 Credits)

Fourier techniques and stochastic processes review, multiple access & cellular techniques, signal space representations for signals and noise, baseband modulations and optimal receivers in additive white Gaussian noise, bandpass and higher-order modulations, mobile & wireless propagation channel characteristics, effects of bandlimiting & distortion mitigation, diversity techniques.

**Prerequisites:** ELCT 332, ELCT 361.

### ELCT 563 - Semiconductor Electronic Devices (3 Credits)

Basic semiconductor material properties. Principles and characteristics of semiconductor p-n junction and Schottky diodes, field-effect transistors (JFETs, MESFETs, and MOSFETs), and bipolar junction transistors.

**Prerequisites:** ELCT 363 or equivalent.

### ELCT 564 - RF Circuit Design for Wireless Communications (3 Credits)

RF design fundamentals, lumped elements, transmission line theory, transmission lines and waveguides, S-parameters, impedance matching, microwave resonators.

**Prerequisites:** ELCT 361.

### ELCT 566 - Semiconductor Optoelectronics (3 Credits)

Basic semiconductor material optical properties. Principles and structures of semiconductor lasers, Light Emitting Diodes, and photodetectors.

**Prerequisites:** ELCT 363 or equivalent.

### ELCT 572 - Power Electronics (3 Credits)

Basic analysis and design of solid-state power electronic devices and circuitry.

**Prerequisites:** ELCT 371, ELCT 331.

### ELCT 574 - Semiconductor Materials and Device Characterization (3 Credits)

Semiconductor material and device characterization; resistivity, carrier and doping density, contact resistance, Schottky barriers, series resistance, defects, trapped charges, and carrier lifetime.

**Prerequisites:** ELCT 363 or equivalent.

### ELCT 582 - Semiconductor Laboratory (3 Credits)

**Prerequisite:** ELCT 363.

### ELCT 732 - Radio Propagation & Wireless Channel Modeling (3 Credits)

Plane wave propagation and effects of various media. Distinct propagation mechanism descriptions. Mathematics for computing field strengths and powers for different propagation mechanisms. Antenna/noise principles. Wireless channel effects on signaling. Channel modeling as linear, time-varying filter. Delay/Doppler spreads. Empirical & statistical wireless channel models. Multi-antenna channel characteristics.

**Prerequisites:** ELCT 562 or successful completion of undergraduate courses in electromagnetics, probability/statistics, and linear system theory.

**ELCT 751 - Advanced Power Systems Analysis (3 Credits)**

Network analysis methods suitable for computer implementation. System studies, including load-flow analysis, short-circuit analysis, and state estimation.

**Prerequisites:** ELCT 551.

**ELCT 753 - Electrical Drives (3 Credits)**

Dynamics of electrical machine and space phasor theory. Analysis and design of control architecture for electrical motors.

**Prerequisites:** ELCT 553.

**ELCT 761 - Fundamental Electromagnetics (3 Credits)**

Theorems and principles of EM theory, Maxwell's equations, vector and scalar potentials. Solution to Maxwell's equation in one-, two-, and three-dimensions. Green's functions and theorems with applications to radiation and guided-wave propagation.

**Prerequisites:** ELCT 361.

**ELCT 762 - Signal Integrity for High Speed Circuits (3 Credits)**

The concept of signal integrity for high speed circuits, signal parameters, transmission lines, I/O buffer models, clock schemes, serial data, package/die/connector modeling, I/O power delivery, and measurement.

**Prerequisites:** ELCT 561 or equivalent.

**ELCT 763 - Semiconductor Device Modeling and Simulation (3 Credits)**

Computer-aided semiconductor device modeling and simulation; Technology Computer-Aided Design (TCAD) tools for modern semiconductor devices.

**ELCT 766 - Solid-State Lighting (3 Credits)**

Solid-state light sources converting electricity directly into light and their societal impacts. Includes principles, fabrication, and applications of solid-state lamps and lighting systems.

**Prerequisites:** ELCT 566.

**ELCT 771 - Optical Communications: Devices and Systems (3 Credits)**

Principles of optical communications, optical signal modulation, optoelectronic devices for optical communications.

**Prerequisites:** ELCT 361, ELCT 363, and ELCT 581.

**ELCT 772 - Advanced Power Electronics (3 Credits)**

Advanced topics in power electronics to include rectifiers, inverters, resonant and soft switching converters, power converter system stability issues.

**Prerequisites:** ELCT 572.

**ELCT 774 - Advanced Semiconductor Characterization (3 Credits)**

Advanced semiconductor material characterization; Hall effect and mobility measurements, optical characterization, scanning probe microscopy, electron microscopy, X-Ray diffraction techniques; nanoscale characterization techniques.

**Prerequisites:** ELCT 574.

**ELCT 782 - Power Semiconductor Devices (3 Credits)**

The function and theory of operation of power semiconductor devices.

**Prerequisites:** ELCT 363.

**ELCT 797 - Research (1-12 Credits)**

Individual research to be arranged with the instructor.

**ELCT 799 - Thesis Preparation (1-12 Credits)****ELCT 837 - Modern Control Theory (3 Credits)**

The analysis and synthesis of linear, nonlinear, and discrete control systems employing the state space approach.

**Prerequisites:** ELCT 331.

**ELCT 838 - Optimal Control and Estimation (3 Credits)**

Optimal filtering, prediction, and smoothing in the presence of uncertainty.

**Prerequisites:** ELCT 331.

**ELCT 839 - Robust Adaptive Control (3 Credits)**

Theory and rigorous mathematical foundation for synthesis and analysis of robust adaptive controls for systems with uncertain dynamics.

Lyapunov stability theory, robust control analysis, methods for model reference adaptive control with emphasis on L1 adaptive control.

**Prerequisites:** ELCT 331.

**ELCT 861 - Advances in Electromagnetics (3 Credits)**

Designate as special topics course.

**ELCT 862 - Antennas and Radiation (3 Credits)**

Radiation mechanism and fundamental parameters. Dipoles, monopoles, and loop antennas. Antenna arrays. Microstrip, helical, biconical, sleeve, spiral, and log-periodic dipole antennas. Horn and reflector antennas. Antenna measurement and modeling.

**Prerequisites:** ELCT 561.

**ELCT 863 - Computational Electromagnetics (3 Credits)**

Electric and magnetic field integral equations, the moment method (MM). Finite element method (FEM), discretization and interpolation, system of equations. Finite difference time domain (FDTD) method, stability, dispersion, incident wave, absorbing boundary conditions (ABCs).

**Prerequisites:** ELCT 761 or PHYS 703.

**ELCT 864 - Microwave Devices and Circuits (3 Credits)**

Microwave semiconductor diodes and transistors; active and passive microwave circuits.

**Prerequisites:** ELCT 521 and ELCT 581.

**ELCT 870 - Computing Methods for System Simulation (3 Credits)**

Use and development of computer software applications for modeling and simulation of energy systems.

**Prerequisites:** ELCT 761, ELCT 766, ELCT 771, ELCT 775.

**ELCT 871 - Advances in Semiconductor Devices (3 Credits)**

Current topics in semiconductor devices.

**Prerequisites:** ELCT 771.

**ELCT 874 - Advanced Semiconductor Materials (3 Credits)**

Principles and technology involved in the growth of both bulk and thin films of advanced semiconductor materials used in the fabrication of next generation electronic devices. Topics include principles of crystal growth, types of defects, and defect generation mechanisms.

**Prerequisites:** ELCT 563.

**ELCT 881 - Advances in Pulsed Power (3 Credits)**

Current topics in pulsed power.

**Prerequisites:** ELCT 781

**ELCT 882 - High-Speed Semiconductor Devices (3 Credits)**

Physics of Negative Differential Resistance devices, 2D-electron gas and quantum wells; principles and characteristics of heterostructure field-effect transistors and bipolar transistors, heterostructure light-emitting diodes, lasers, and photodetectors.

**Prerequisites:** ELCT 581 or PHYS 512.

**ELCT 883 - Power Systems Stability and Control (3 Credits)**

Power system transient and dynamic stability analysis. Power system control, including excitation systems, automatic generation control and boiler-turbine-generator models.

**Prerequisites:** ELCT 751.

**ELCT 891 - Selected Topics in Electrical Engineering (3 Credits)****ELCT 897 - Directed Individual Study (1-3 Credits)**

Approved plan of study must be filed.

**ELCT 899 - Dissertation Preparation (1-12 Credits)**

## Electrical Engineering, M.E.

This degree is intended to enhance professional career opportunities by building depth of knowledge within selected electrical engineering specialties. The degree requires 30 hours of course work beyond the B.S.

### Learning Outcomes

- Become a specialist in a subdiscipline by successfully planning and executing a program of study in an area of interest.
- Ability to execute research or development in a specific area of interest.
- Ability to solve sophisticated engineering problems that require integration of knowledge and skills gained in multiple graduate courses.

### Degree Requirements (30 Hours)

30 hours of graduate coursework tailored to the students professional interests and selected with approval from the student's academic advisor so as to build depth of knowledge in at least one area, with not less than 15 hours being taken from ELCT courses at the 700-level or above.

#### Restrictions

- Not fewer than 15 hours taken from ELCT courses at the 700-level or above
- Not more than 6 hours of ELCT 897
- Not more than 6 hours of non-ELCT courses
- ELCT 797 - Research cannot be counted toward degree requirements
- Any changes to an approved program of study require approval of the graduate director and must be made at least one semester before graduation.

#### Additional Degree Requirements

The Comprehensive Exam, administered by the student's academic advisor and one other faculty member from the student's specialty area, must be passed at least 60 days prior to graduation.

## Electrical Engineering, M.S.

This degree is intended to prepare students to perform advanced projects in a specific area of interest within the scope of research in the electrical engineering department. The degree requires 24 hours of course work

beyond the BS and 6 hours of thesis preparation. Thesis preparation hours represent time spent by the student working closely with their advisor on a mutually-agreeable topic.

### Learning Outcomes

- Become a specialist in a subdiscipline by successfully planning and executing a program of study in an area of interest.
- Ability to execute research or development in a specific area of interest.
- Ability to solve sophisticated engineering problems that require integration of knowledge and skills gained in multiple graduate courses.

### Degree Requirements (30 Hours)

24 hours of graduate coursework (excluding thesis preparation hours) tailored to the student's research interests and selected with approval from the student's thesis advisor so as to build depth of knowledge in a focus area.

Course	Title	Credits
ELCT 799	Thesis Preparation	6

#### Restrictions

- Minimum of 12 hours taken from ELCT courses at the 700-level or above, exclusive of thesis preparation hours
- Not more than 6 hours of ELCT 897
- Not more than 6 hours of non-ELCT courses
- ELCT 797 - Research cannot be counted toward degree requirements

Any changes to an approved program of study require approval of the graduate director and must be made at least one semester before graduation.

#### Additional Degree Requirements

The Comprehensive Exam consists of a public presentation of the thesis topic followed by a private oral exam administered by the student's Thesis Advisor and Second Reader.

## Electrical Engineering, Ph.D.

The general requirements for the Ph.D. degree in Electrical Engineering are equivalent to those of The Graduate School.

### Learning Outcomes

- An expertise in their specialty area that is requisite for conducting research in that area.
- An understanding of fundamental concepts and an ability to solve problems in their major area of research.
- An ability to solve basic problems in related areas of research other than their major area.
- Demonstrate an ability to perform research in one of the major areas of the department.
- Demonstrate an understanding of the discovery and innovation process as it relates to electrical engineering.
- Demonstrate the ability to describe complex ideas to others.

## Degree Requirements

Students entering the Ph.D. program with a B.S. degree are required to complete a minimum of 48 hours of course work and 12 hours of dissertation preparation. At least 24 hours of coursework must be in the major and the level of 700 or above.

Students entering into the Ph.D. program with an approved M.S. or M.E. degree are required to complete 18 hours of course work and 12 hours of dissertation preparation. At least nine hours of coursework must be at the level of 700 or above.

The Program of Study (POS) must be defined in consultation with the student's advisor and approved by the graduate director. Changes in the POS require permission of the student's advisor and approval of the Graduate Director. Any such changes must be approved before the beginning of a student's final semester.

Not more than 12 hours of ELCT 797 and not more than six hours of ELCT 897 may be approved. Ph.D. students conducting research in the area of Signal Integrity are required to complete three credit hours of ELCT 897.

## Additional Requirements

Ph.D. Students must take and pass a Qualifying Examination within three academic semesters of initial enrollment in the program. The exam will be administered by a departmental committee for the purpose of ascertaining that the student has mastered the essentials of electrical engineering. Details of the exam format and contents will be made available to the concerned students well in advance of the exam. Students are allowed to take the qualifying exam not more than twice.

Students must be admitted to Ph.D. Candidacy at least one year before graduation. Admission to candidacy requires passing the qualifying Exam and filing an approved Program of Study. Each Ph.D. student must write and present a dissertation proposal and have it approved by his/her advisory committee, which constitutes the Comprehensive Exam. The dissertation proposal and its presentation must delineate the scope and depth of the original research that the student proposes to undertake.

## Engineering Management, M.S.

### Learning Outcomes

- Graduates will demonstrate the expertise to supervise and lead teams of engineers and other technical personnel, to perform to meet project objectives and to lead the negotiation teams.
- Graduates will demonstrate the expertise to analyze risk in engineering projects .

## Degree Requirements

Students may follow one of the following three tracks: General, Cyber Security, and Energy. For the M.S. degree, 30 credit hours are required. At least 15 course credit hours must be 700-level or higher. A non-thesis option is available for the General track only.

### General Track Program of Study

#### Required Courses (12 Hours)

Course	Title	Credits
ECIV 707	Management of Engineering Projects	3
ECIV 708	Engineering Risk and Reliability	3

LAWS 702		3
JOUR 790	Topics in Mass Communication	1-6
<b>Total Credit Hours</b>		<b>10-15</b>

#### Business Electives (9 Hours)

Course	Title	Credits
Select three of the following:		
ACCT 728	Financial Accounting	
IBUS 734	International Business Negotiations	
MGMT 718	Management of Human Resources	
MGMT 770	Competing Through People	
MKTG 701	Marketing Management	
<b>Total Credit Hours</b>		<b>9</b>

#### Engineering and Computing Elective (3 Hours)

Course	Title	Credits
Select one of the following technical courses or an approved 500-level or above course:		
CSCE 522	Information Security Principles	
CSCE 715	Network Systems Security	
CSCE 727	Information Warfare	
CSCE 790	Topics in Information Technology	
ECHE 573	Next Energy	
ECHE 789	Selected Topics in Chemical Engineering	
ECIV 790	Selected Topics in Civil Engineering	
ELCT 510	Photovoltaic Materials and Devices	
ELCT 891	Selected Topics in Electrical Engineering	
EMCH 529	Sustainable Design and Development	
EMCH 791	Selected Topics in Thermal Systems	
<b>Total Credit Hours</b>		<b>3</b>

#### Thesis Preparation or Non-Thesis Option (6 Hours)

The General track has two options: Thesis and Non-thesis. The Thesis Option includes 6 credit hours of Thesis Preparation. The course number for the thesis will be specific to the department in which the research is conducted (CSCE 799, ECIV 799, ELCT 799, or EMCH 799). The Non-Thesis Option includes 6 additional credit hours of Engineering and Computing Electives, of which a maximum of 3 credit hours may be a special topic/directed studies course for a project.

### Cyber Security Track Program of Study

#### Required Courses (9 Hours)

Course	Title	Credits
ECIV 707	Management of Engineering Projects	3
or ECIV 708	Engineering Risk and Reliability	
LAWS 702		3
JOUR 790	Topics in Mass Communication	3
<b>Total Credit Hours</b>		<b>9</b>

#### Business Electives (9 Hours)

Course	Title	Credits
Select three of the following:		
ACCT 728	Financial Accounting	
IBUS 734	International Business Negotiations	
MGMT 718	Management of Human Resources	



MGMT 770	Competing Through People	
MKTG 701	Marketing Management	
<b>Total Credit Hours</b>		<b>3</b>

### Cyber Security Elective Courses (6 Hours)

Course	Title	Credits
Select two of the following:		
CSCE 522	Information Security Principles	6
CSCE 715	Network Systems Security	
CSCE 727	Information Warfare	
<b>Total Credit Hours</b>		<b>6</b>

### Thesis Preparation (6 Hours)

The Cyber Security Track requires a thesis related to cyber security. The course number for the thesis will be specific to the department in which the research is conducted (CSCE 799, ECIV 799, ELCT 799, or EMCH 799).

### Energy Track Program of Study

#### Required Courses (9 Hours)

Course	Title	Credits
ECIV 707	Management of Engineering Projects	3
or ECIV 708	Engineering Risk and Reliability	
LAWS 702		3
JOUR 790	Topics in Mass Communication	3
<b>Total Credit Hours</b>		<b>9</b>

#### Business Electives (9 Hours)

Course	Title	Credits
Select three of the following:		
ACCT 728	Financial Accounting	9
IBUS 734	International Business Negotiations	
MGMT 718	Management of Human Resources	
MGMT 770	Competing Through People	
MKTG 701	Marketing Management	
<b>Total Credit Hours</b>		<b>9</b>

#### Energy Elective Courses (6 Hours)

Course	Title	Credits
Select two of the following:		
EMCH 791	Selected Topics in Thermal Systems	6
ECHE 573	Next Energy	
ELCT 510	Photovoltaic Materials and Devices	
<b>Total Credit Hours</b>		<b>6</b>

### Thesis Preparation (6 Hours)

The Energy Track requires a thesis related to energy. The course number for the thesis will be specific to the department in which the research is conducted (CSCE 799, ECIV 799, ELCT 799, or EMCH 799).

### Comprehensive Exam

All candidates for a degree in the MS in Engineering Management graduate program must complete a comprehensive assessment that is distinct from program course requirements. A comprehensive assessment requires the student to synthesize and integrate knowledge acquired in coursework and other learning experiences and to apply theory and principles in a situation that approximates some aspect of professional practice or research in the discipline. It must be used as

a means by which faculty judge whether the student has mastered the body of knowledge and can demonstrate proficiency in the required competencies. Students in the MS in Engineering Management graduate program will fulfill the comprehensive assessment requirement by successful completion and defense of the thesis. For students completing the Non-thesis Option, the comprehensive exam will be administered by the student's advisor.

### International Concentration

For the International concentration, the student will have preliminary knowledge of a foreign language. Students will complete three credit hours for language instruction and six credit hours for professional experience in an internship program in a foreign country. The internship program must be approved by the College of Engineering and Computing prior to the student's departure to the foreign site.

## Integrated Information Technology

Department Website ([https://sc.edu/study/colleges\\_schools/engineering\\_and\\_computing/study/integrated\\_information\\_technology/](https://sc.edu/study/colleges_schools/engineering_and_computing/study/integrated_information_technology/))

Elizabeth A. Ragan, *Chair*

The Integrated Information Technology Department offers the Master in Health Information Technology degree.

## Programs

- Health Information Technology, M.H.I.T. (p. 313)

## Health Information Technology, M.H.I.T.

Robert G. Brookshire, Ph.D., *Director of Graduate Studies in Health Information Technology*

Ronnie D. Horner, Ph.D., *Department Chair, Health Services Policy and Management*

Elizabeth A. Regan, Ph.D., *Department Chair, Integrated Information Technology*

The Masters of Health Information Technology (MHIT) is an interdisciplinary program with the Arnold School of Public Health. The program is housed within the Integrated Information Technology (IIT) Department in the College of Engineering and Computing. This professional degree program prepares students with expertise in management of both health care systems and information technology. It is designed to create a workforce of highly skilled IT experts and managers in healthcare, and to provide leadership and know-how as the USA moves toward a more technologically advanced and efficient healthcare system.

## Learning Outcomes

- Students use and apply current technical concepts and practices in the foundational health and information technology domains.
- Students are able to identify and analyze user needs and take them into account in the selection, creation, evaluation and administration of health IT.
- Students are able to integrate health IT based solutions into the user environment effectively.
- Students are able to identify health IT best practices and standards and their application.

- Students are able to assist in the creation of an effective health IT project plan.

## Admission Requirements

Beyond completing the normal application process through the graduate school, applicants to the MHIT program must have an undergraduate grade point average (GPA) of at least a 3.0 and submit GRE or GMAT scores. An admissions scorecard will be used to evaluate applicants, weighing the applicant's GPA, test scores, reference letters, previous professional experience, and career goal statement. This will allow the balancing of test scores, GPA, experience in or motivation for a health IT career, and letters of recommendation. Applicants with prior graduate degrees may be considered for waiver of GRE/GMAT scores on a case-by-case basis.

## Degree Requirements (36 Hours)

Students take a combined 36 credit hours of coursework from both the IIT Department and from the Arnold School of Public Health. Students take a core of six courses (18 credit hours), four from IIT and two from the Arnold School's Department of Health Services Policy and Management. Students then choose four elective courses (12 credit hours), including at least one from Integrated Information Technology and one from the Arnold School of Public Health, and complete an internship of six credit hours.

The required internship (6 credit hours) consists of a minimum of 250 hours of approved health information technology work experience to be completed during the summer. It also requires a research paper, which will be evaluated as the student's comprehensive assessment of program learning outcomes. The integration of work experience with academic research is designed to provide a structured format for students to reflect on their work experience and relate it to content and theory learned across the program.

Courses are conducted online or in a traditional classroom setting offered in the evenings and weekends to fit the schedules of working professionals. Depending on their professional experience and interest, students can tailor their program to gain breadth and depth in either the health or information technology components. Students with undergraduate degrees or extensive professional experience in healthcare would take most of their electives in information technology, while students with undergraduate degrees or experience in information technology would take their electives from the health component.

### Core Courses (18 Hours)

Course	Title	Credits
ITEC 747	Management of Health Information Systems	3
ITEC 752	Systems Analysis & Design for Health Applications	3
ITEC 764	Project Management for Health Information	3
ITEC 770	Health IT Database Systems	3
HSPM 700	Approaches and Concepts for Health Administration	3
HSPM 768	Health Services Administration II	3
<b>Total Credit Hours</b>		<b>18</b>

### Health Electives (3 to 12 Hours)

*Any combination of minimum of three to maximum of 12 credit hours.*

Course	Title	Credits
Select 3-12 hours of the following:		
BIOS 710	Effective Data Management for Public Health	
HSPM 711	Health Politics	
HSPM 712	Health Economics	
HSPM 726	Applied Public Health Law for Administrators	
HSPM 730	Financing of Health Care	
HSPM 769	Organizational Behavior	
HSPM 777	Healthcare Policy and Principles of Health Insurance	
HSPM 791	Selected Topics	
NURS 717	Application of Basic Statistics for Nursing Practice & Service Management	
NURS 734	Conceptual Basis of Health Systems	
NURS 738	Financing of Health Care	
<b>Total Credit Hours</b>		<b>3-12</b>

### Information Technology Electives (3 to 12 Hours)

*Any combination of minimum of three to maximum of 12 credit hours.*

Course	Title	Credits
Select 3-12 hours of the following:		
ITEC 590	Special Topics in Integrated Information Technology	
ITEC 743	Health Information Privacy and Security	
ITEC 745	Telecommunications for Health Information Technology	
ITEC 762	Health Information Technology Usability and Interface Design	
ITEC 775	Large-Scale Health and Information Systems	
ITEC 776	Health Information Technology and Clinical Transformation	
ITEC 790	Special Topics in Informatics	
ITEC 795	Independent Study in Health Information Technology	
<b>Total Credit Hours</b>		<b>3-12</b>

### Internship (6 Hours)

Course	Title	Credits
ITEC 748	Internship in Health Information Technology	6
<b>Total Credit Hours</b>		<b>6</b>

## Mechanical Engineering

Department Website ([https://sc.edu/study/colleges\\_schools/engineering\\_and\\_computing/departments/mechanical\\_engineering/](https://sc.edu/study/colleges_schools/engineering_and_computing/departments/mechanical_engineering/))

Jamil A. Khan, *Chair*

The Department of Mechanical Engineering offers programs leading to the Master of Science, Master of Engineering, and Doctor of Philosophy degrees in both mechanical engineering and nuclear engineering. The department, jointly with the Department of Chemical Engineering, offers the Master of Science and Doctor of Philosophy degrees in biomedical engineering. Degree requirements for biomedical engineering are listed under the college offerings at Biomedical Engineering| .

Faculty fields of specialization include mechanics and materials, thermal and fluid sciences, dynamics and controls, design and manufacturing, sustainable systems, biomedical engineering, and nuclear engineering. Current research areas include manufacturing (cutting, joining, simulation), fracture mechanics, experimental mechanics (computer vision methods, impact/fracture/creep testing), computational mechanics, biomechanics, MEMS, nanosystems, smart materials and active sensing, structural damage detection and health monitoring, mechatronics, combustion, solidification, sustainable design, production and medical applications of radioisotopes, microstructure-property-processing relationships in high performance/high temperature ceramics and nuclear fuels, advanced reactor design, nuclear space power, and propulsion.

## Bachelor's/Master's Degrees Accelerated Program

The Bachelor's/Master's Degrees Accelerated Program in Mechanical Engineering allows undergraduate students to complete both the B.S.E. degree and M.E. or M.S. degree in as few as five years. The use of dual credit—courses that can be used toward both degrees—enables acceleration of the program, reducing the total enrollment of the student by one semester.

Mechanical engineering undergraduate students may apply for approval of an accelerated education plan in the semester in which they will complete 90 hours of undergraduate course work. In addition, students must have a sufficient foundation in mechanical engineering course work to enable them to take graduate-level courses. University and department regulations stipulate that applicants must have a minimum GPA of 3.40, both overall and in mechanical engineering courses. Students in the accelerated program must maintain a GPA of 3.40 while pursuing the B.S.E. degree.

Students applying to this program must submit to The Graduate School a completed "Accelerated Bachelor/Graduate Study Plan Authorization (G-ABGSP)" with endorsements of the undergraduate advisor, the department graduate director, and the department chair. The dean of The Graduate School has final authority for approving accelerated education plans. A "Senior Privilege Course Work Authorization" must be submitted for each semester in which one or more of these courses are taken.

Participation in the accelerated program does not require acceptance into The Graduate School. After completing the B.S.E. degree, students wishing to continue toward a master's degree in mechanical engineering at USC must apply formally to The Graduate School by submitting the appropriate form and required supporting documents. Students in the accelerated program will be eligible for graduate assistantships upon admission to The Graduate School.

Only graduate-level courses (numbered 500 and above, including up to three credit hours of project/research work leading to a master's thesis) satisfying both B.S.E. and master's degree requirements may be used for dual credit. No more than 12 credit hours may be used as dual credit.

## Admissions

The Department of Mechanical Engineering offers six graduate degree programs: the Master of Science (M.S.) in mechanical engineering and in nuclear engineering, Master of Engineering (M.E.) in mechanical engineering and in nuclear engineering, and Doctor of Philosophy (Ph.D.) in mechanical engineering and in nuclear engineering. The Graduate School, based on recommendations from the department,

grants admissions to these degree programs. All applications to the degree programs must be processed through the Graduate School office on the Columbia campus. Application information and forms can be obtained from the Graduate School's "Future Students" website at <http://www.gradschool.sc.edu/futurestudents/index.html> (<http://www.gradschool.sc.edu/futurestudents/>). Applications can be made online at the above website or by submitting the application forms to:

The Graduate School  
University of South Carolina  
Columbia, SC 29208, U.S.A.

USC admission standards are described in the Graduate Studies Bulletin. Specific admission requirements for graduate degree programs offered by DME are described below.

## Admission Requirements

In general, the admission processes for the M.E., M.S., and Ph.D. programs in Mechanical Engineering and in Nuclear Engineering are highly competitive. Admission decisions are based on the quality of the applicant's previous university-level academic work (as reflected by grade point average or GPA), letters of recommendation, GRE scores, and other evidence of past accomplishments. GRE General Test scores must be submitted by all applicants seeking assistantships and/or tuition support and all applicants applying for a research based degree program (PhD or MS). A typical successful applicant has a GRE-Verbal score of at least 150 (450 prior scale) and GRE-Quantitative score of at least 155 (700 prior scale). Applicants applying for the Masters of Engineering program who graduate with a 3.0 or higher from an ABET accredited engineering program are not required to submit GRE scores.

International applicants must also submit internet based TOEFL (IBT) or IELTS International Academic Course Type 2 exam scores. An IBT minimum score of 80 or an IELTS score of 6.5 or better is required by the graduate school.

## Programs

- Aerospace Engineering, M.E. (p. 319)
- Aerospace Engineering, M.S. (p. 320)
- Mechanical Engineering, M.E. (p. 322)
- Mechanical Engineering, M.S. (p. 322)
- Mechanical Engineering, Ph.D. (p. 323)
- Nuclear Engineering, M.E. (p. 323)
- Nuclear Engineering, M.S. (p. 324)
- Nuclear Engineering, Ph.D. (p. 325)

## Courses

### EMCH 501 - Engineering Analysis I (3 Credits)

Engineering applications of solution techniques for ordinary and partial differential equations, including Sturm-Liouville theory, special functions, transform techniques, and numerical methods.

**Prerequisites:** MATH 242.

### EMCH 502 - Engineering Analysis II (3 Credits)

Engineering applications of optimization methods, calculus of variations including approximate methods, and probability concepts.

**Prerequisites:** MATH 242.

**EMCH 507 - Computer-Aided Design (3 Credits)**

Solid modeling using commercial computer-aided design (CAD) applications package to reverse engineer-manufactured parts. Analytical curves and surfaces, transformation matrices, assembly modeling, and computer tools for analyzing parts and mechanisms.

**Prerequisites:** EMCH 201, EMCH 327.

**EMCH 508 - Finite Element Analysis in Mechanical Engineering (3 Credits)**

Development of the fundamental concepts of finite element modeling. Matrix equation assembly and reduction. Mechanical engineering applications in structures, stress analysis, ideal flow, and heat transfer problems.

**Prerequisites:** EMCH 201, EMCH 327.

**EMCH 509 - Computer-Aided Manufacturing (3 Credits)**

Optimizing computer-controlled machining processes, programmable logic controllers (PLCs), motion control of servomechanisms, CNC machining practices and programming, and robotics.

**Prerequisites:** D or better in MATH 241.

**EMCH 516 - Control Theory in Mechanical Engineering (3 Credits)**

An introduction to closed-loop control systems; development of concepts, including transfer function, feedback, frequency response, and system stability by examples taken from mechanical engineering practice; control system design methods.

**Prerequisites:** MATH 242, EMCH 330.

**EMCH 520 - Technology Planning (3 Credits)**

Assessment of technological needs in the organization; coupling research and development to production; selection and evaluation of the technical project/program; technical planning, resource allocation, direction, and control; effective use and development of the engineering staff; the process of and barriers to technological change; technology, values, and policy. Senior or graduate standing.

**EMCH 521 - Concurrent Engineering (3 Credits)**

A systematic approach to the mechanical design of products, requiring the concurrent design of all related processes.

**Prerequisites:** EMCH 327.

**EMCH 522 - Design for Manufacture and Assembly (3 Credits)**

Product design principles for early consideration of issues to shorten product development time and to ensure smooth transition to manufacturing, thus accelerating time-to-market.

**Prerequisites:** EMCH 327 and EMCH 377.

**EMCH 527 - Design of Mechanical Systems (3 Credits)**

Summary of mechanical design, project management, product liability and the law, intellectual property ethics and professionalism.

**Prerequisites:** EMCH 327.

**EMCH 528 - Product Safety Engineering (3 Credits)**

Design considerations and methodologies for products to ensure adequate safeguards for the prevention of accidents, failures, and injuries. Senior standing.

**EMCH 529 - Sustainable Design and Development (3 Credits)**

System design and development accomplished with consideration of environmental/ecological, economic, and social constraints. Students will be introduced to sustainable design and accomplish a design project. Senior standing.

**EMCH 530 - Introduction to Engineering Optimization (3 Credits)**

Mathematical formulation of an optimum design problem, introduction to optimum design concepts and multidisciplinary design optimization. Use of mathematical programming methods for unconstrained and constrained minimization for engineering design optimization.

**Prerequisites:** C or better in MATH 142, Graduate standing.

**EMCH 532 - Intermediate Dynamics (3 Credits)**

Kinematics and dynamics of particles and rigid bodies using Newtonian mechanics. Work/energy, impulse/momentum, 3-D motion.

**Prerequisites:** EMCH 332.

**EMCH 535 - Robotics in Mechanical Engineering (3 Credits)**

Overview of robotics in practice and research: forward and inverse kinematics, statics and dynamics, trajectory generation, control, vision, and motion planning.

**Prerequisites:** EMCH 332.

**EMCH 544 - Compressible Fluid Flow (3 Credits)**

Application of the conservation laws of a compressible fluid to isentropic flows, flow with friction, and flows with heating or cooling. Shock and expansion waves. Nozzle and diffuser design.

**Prerequisites:** EMCH 354.

**EMCH 550 - Introduction to Nuclear Safeguards (3 Credits)**

International nuclear non-proliferation programs and activities, proliferation risk assessment, and nuclear materials management and safeguards, including physical protection systems, material accounting and control, monitoring, and regulatory issues.

**Prerequisites:** CHEM 112, CHEM 112L, PHYS 212, PHYS 212L, MATH 241, MATH 242.

**EMCH 551 - Nuclear Energy in the Hydrogen Economy (3 Credits)**

The current role of nuclear energy in the US and global energy mix will be described and the potential for future growth will be surveyed, particularly in the development of the hydrogen economy.

**Prerequisites:** EMCH 354.

**EMCH 552 - Introduction to Nuclear Engineering (3 Credits)**

Radioactivity and nuclear reactions; steady state and transient nuclear reactor theory.

**EMCH 553 - Nuclear Fuel Cycles (3 Credits)**

Processing of nuclear fuel including fabrication, irradiation, and waste disposal or storage. In-core and out-of-core fuel management. Fuel cycle economics.

**Prerequisites:** EMCH 552.

**EMCH 554 - Intermediate Heat Transfer (3 Credits)**

Radiant heat exchange, combined modes of heat transfer, computer techniques in heat transfer analysis and design, environmental heat transfer.

**Prerequisites:** EMCH 354.

**EMCH 555 - Instrumentation for Nuclear Engineering (3 Credits)**

Basic operational principles of radiation detection and nuclear instrumentation systems. Selection of the proper detector to measure radiation. Statistical analysis of results.

**Prerequisite or Corequisite:** EMCH 552 or PHYS 511.

**EMCH 555L - Nuclear Instrumentation Laboratory (1 Credit)**

Use of nuclear radiation detection and instrumentation systems and computers. Data acquisition and analysis.

**Corequisite:** EMCH 555.

**EMCH 556 - Introduction to Risk Analysis and Reactor Safety (3 Credits)**

An introduction to probabilistic risk assessment (PRA) methods as applied to nuclear power plants but also examples from the chemical industry, aerospace, transportation, and other sectors. Addresses failure and reliability analysis, fault trees, event trees, reactor safety, regulatory practice.

**Prerequisites:** STAT 509.

**EMCH 557 - Introduction to Radiation Shielding and Sources (3 Credits)**

Radiation interactions and transport, design of radiation shields, point kernel, and Monte Carlo methods. Dosimetry, buildup factors, radiation sources, and shield materials.

**EMCH 558 - Introduction to Nuclear Reactor Systems (3 Credits)**

PWR and BWR reactors, reactor system designs for accident prevention and mitigation, protection systems, containment design, emergency cooling requirements, code of federal regulations, and design criteria.

**Corequisite:** EMCH 552.

**EMCH 560 - Intermediate Fluid Mechanics (3 Credits)**

Integral and differential analysis of fluids. Potential flow. Boundary layer analysis. Flow in closed and open channels. Flow dynamics of turbomachinery. Steady and unsteady flows.

**Prerequisites:** EMCH 310, EMCH 360.

**EMCH 561 - Current Topics in Mechanical Engineering (1-3 Credits)**

Special topics related to current issues in mechanical engineering. Course content varies and will be announced in the schedule of classes by title.

**EMCH 562 - Micro/nanofluidics and Lab-on-a-Chip (3 Credits)**

Basic fluid mechanics, capillary, drop and micro/nanoparticle, electrokinetics; Micropump, mixer, preconcentrator, electrophoresis, microactuator and particle manipulator; Sensors for pressure, velocity, concentration, temperature in environmental monitoring/biodefence, clinical diagnostics, drug discovery/delivery. Restricted to: Upper division.

**Prerequisites:** CHEM 112, CHEM 112L, PHYS 212.

**EMCH 567 - Bio Nano/Micro Electro-Mechanical Systems (3 Credits)**

Nano/microfabrication for nano/microstructures, photolithography, self-assembly, etching techniques, physical and chemical vapor deposition, surface and bulk micromachining, MEMS integration and packaging; applications in Biomedical Engineering; microactuators, biomicrosensors, and biomedical devices.

**Prerequisites:** CHEM 112, CHEM 112L, PHYS 212.

**EMCH 571 - Mechanical Behavior of Materials (3 Credits)**

Micromechanisms of the deformation and fracture of structural materials; brittle versus ductile behavior; fatigue and creep; strengthening mechanisms; mechanical testing techniques; methods in analysis of mechanical failures.

**Prerequisites:** EMCH 260, EMCH 371.

**EMCH 572 - Physical Metallurgy (3 Credits)**

Equilibrium and phase relations in metallic systems; kinetics of phase transformations; annealing and precipitation phenomena.

**Prerequisites:** EMCH 371.

**EMCH 573 - Introduction to Nuclear Materials (3 Credits)**

Materials for nuclear applications; materials degradation processes occurring in the nuclear reactor environment. Restricted to Engineering Upper Division and Graduate Students.

**EMCH 575 - Adaptive Materials and Smart Structures (3 Credits)**

A multidisciplinary introductory course addressing the engineering field of adaptive materials and smart structures.

**Prerequisites:** EMCH 260, EMCH 310.

**EMCH 576 - Fundamentals and Applications of Fuel Cells (3 Credits)**

Study of fuel cell principles, fuel cell characterization, characteristics of the major types of fuel cells, fuel cell and stack components, fuel cell stack and system design, fuel cell applications in portable, transportation, and stationary areas, as well as the current status and future research focus of fuel cells. Restricted to: Upper division.

**Prerequisites:** EMCH 290 or ECHE 310 or ENCP 290.

**EMCH 577 - Aerospace Structures I (3 Credits)**

Static analysis of aerospace structural elements such as bars, beams, columns, plates, and shells. Topics include, but not limited to elasticity theory, simple beam theory, boundary value problems, and structural stability. Upper division or graduate status.

**EMCH 578 - Introduction to Aerodynamics (3 Credits)**

Fundamentals of aerodynamics, elements of compressible flow, thin airfoil theory, finite wing theory, flow through nozzles diffusers and wind tunnels, normal and oblique shock waves, elements of the methods of characteristics of finite difference solutions for compressible flows, aspects of hypersonic flow.

**EMCH 580 - Mechanics of Solid Biomaterials (3 Credits)**

Introduction to the mechanical behavior of solid biomaterials. Structure and mechanical properties of tissue including skin, myocardium, and tendon. Mathematical treatment of anisotropic elasticity, nonlinear elasticity, linear and quasi-linear viscoelasticity, muscle activity.

**Prerequisites:** MATH 242.

**EMCH 584 - Advanced Mechanics of Materials (3 Credits)**

Topics in stress analysis, including unsymmetrical bending, three-dimensional stress-strain; torsion; rotational stress; thick-walled pressure vessels; beams on elastic foundations; and stress concentration.

**Prerequisites:** EMCH 260.

**EMCH 585 - Introduction to Composite Materials (3 Credits)**

Introduction to fiber reinforced polymer (FRP) composite materials, manufacturing methods and processes. Micro-Mechanics and properties of orthotropic laminated and woven composites. Analysis of composite structures (Mechanics and Synergistic environmental effects). Structure/property relationships. Characterization of modern composite materials. Design considerations.

**Prerequisites:** EMCH 327, EMCH 371, MATH 242.

**EMCH 586 - Experimental Stress Analysis (3 Credits)**

Stress analysis utilizing experimental techniques including transmission and scattered light photoelasticity, strain gauges, and brittle coatings. Introduction to modern concepts of coherent optics in stress analysis with emphasis on engineering applications.

**Prerequisites:** EMCH 260.

**EMCH 592 - Introduction to Combustion (3 Credits)**

Chemical thermodynamics, reaction kinetics, and combustion phenomena in energy production. Application to the modeling of coal combustion, incineration, and combustion engines.

**Prerequisites:** EMCH 354, EMCH 394.

**EMCH 594 - Solar Heating (3 Credits)**

Solar radiation; review of heat transfer and radiation characteristics of relevant materials; flat plate and focusing collectors; energy storage models for design of solar heating systems; system design by computer simulation; direct conversion by solar cells.

**Prerequisites:** EMCH 290, EMCH 354, or ECHE 321.

**EMCH 597 - Thermal Environmental Engineering (3 Credits)**

Vapor compression and absorption refrigeration systems. Heat pumps. Properties of refrigerants. Cryogenic refrigeration. Heating and cooling of buildings. Solar heating and cooling systems.

**Prerequisites:** EMCH 354, EMCH 394.

**EMCH 701 - Methods of Engineering Analysis (3 Credits)**

Variational methods of approximation are used with the finite element method to simulate the reliability predictions in design of mechanical systems. The functional relationship between geometry, materials, and physical laws of motion and energy are applied to solid, thermal, and fluid systems.

**Prerequisites:** EMCH 201.

**EMCH 708 - Computer-Aided Product Design and Analysis (3 Credits)**

Integration of computer-aided design and computer-aided engineering for shorter design cycles. Application of solid modeling and computer simulation tools to the design process.

**EMCH 717 - Advanced Finite Element Methods (3 Credits)**

Advanced finite element topics, including dynamic and nonlinear analyses. Computer projects will be assigned.

**Prerequisites:** EMCH 508.

**EMCH 721 - Aeroelasticity (3 Credits)**

Study the principles and applications of aircraft aeroelasticity with emphasis on aircraft structural dynamics, vibrations, unsteady aerodynamics, and interaction thereof.

**EMCH 722 - Plasticity (3 Credits)**

Basic experiments and observations of elastic-plastic material behavior; yield criteria; deformation and flow theories; slip line fields; numerical techniques; one and two dimensional applications.

**Prerequisites:** ENCP 707.

**EMCH 727 - Advanced Mechanical Design (3 Credits)**

Analysis of stresses involved in mechanical loading under various environmental conditions including failure criteria, impact and fatigue loading, residual stress, contact stress, and experimental stress analysis.

**Prerequisites:** EMCH 260.

**EMCH 732 - Advanced Dynamics of Machinery (3 Credits)**

Rigid body dynamics of mechanical systems. Dynamics of linkages, gears, and cams. Balancing. Synthesis of mechanisms. Digital computer and computer graphics methods in dynamics.

**Prerequisites:** EMCH 532

**EMCH 741 - Viscous and Turbulent Flow (3 Credits)**

Viscosity. The Navier-Stokes equation, its formulation and its properties. Exact solutions of the flow at low Reynolds number. Flow at high Reynolds number. The momentum theory of boundary layer. Turbulent flows.

**EMCH 742 - Advanced Gas Dynamics (3 Credits)**

Development of the general equations of frictionless flow. Small perturbation theory. Subsonic and supersonic similarity rules. Applications of the method of characteristics to unsteady flow. Low density flow fundamentals.

**EMCH 743 - Aircraft and Rocket Propulsion (3 Credits)**

Introduction to aircraft and rocket engines with emphasis on the performance and characteristics of various types of propulsion systems, including turbojet, turbofan, turboprop, ramjet, scramjet, and liquid and solid propellant rockets.

**Prerequisite or Corequisite:** EMCH 544.

**EMCH 744 - Aerodynamics & Flight Mechanics (3 Credits)**

Aerodynamics of wings and bodies in aircraft and the static and dynamic analysis of airplane flight mechanics. Topics include fundamentals of potential flows, thin airfoil theory, finite wing theory, laminar and turbulent boundary layers, trajectory analysis, and stability and control of an airplane.

**EMCH 751 - Advanced Heat Transfer (3 Credits)**

Development of the energy equation for convection and some exact solutions. Approximate analysis of the boundary layer by integral methods. Analogy between heat and momentum transfer. Experimental results.

**EMCH 752 - Thermal Radiation Heat Transfer (3 Credits)**

Radiation heat transfer between surfaces of enclosures; diffuse-gray and nondiffuse-gray surfaces. Radiative properties of real materials; metals, opaque nonmetals, transmitting solids. Gas radiation in enclosures.

**Prerequisites:** EMCH 751.

**EMCH 753 - Chemical Thermodynamic Calculations and Modeling with Applications (3 Credits)**

Principles of chemical thermodynamics; reactions, transformations, phase equilibria, and applications to engineering processes.

**EMCH 754 - Thermal Hydraulic Design of Nuclear Reactors (3 Credits)**

Power plant thermodynamics, reactor heat generation and removal (single-phase as well as two-phase coolant flow and heat transfer), and engineering considerations in reactor design.

**Prerequisites:** EMCH 552.

**EMCH 755 - Advanced Nuclear Engineering (3 Credits)**

Reactor physics including heterogeneous effects, multi-group calculations, reactor kinetics, stability and control, fuel depletion, and burnable poisons.

**Prerequisites:** EMCH 552.

**EMCH 756 - Safety Analysis for Energy Systems (3 Credits)**

Analysis of the safety of nuclear energy facilities focusing on reliability and probabilistic risk analysis.

**Prerequisites:** EMCH 552.

**EMCH 757 - Radiation Shielding (3 Credits)**

Radiation interactions and transport, design of radiation shields, point kernel, removal-diffusion, discrete ordinates, and Monte Carlo methods. Dosimetry, buildup factors, radiation sources, and shield materials.

**Prerequisites:** EMCH 552.

**EMCH 758 - Nuclear Reactor Systems (3 Credits)**

PWR and BWR reactors, reactor system designs for accident prevention and mitigation, protection systems, containment design, emergency cooling requirements, and atmospheric dispersion of radioactive material.

**Prerequisites:** EMCH 552.

**EMCH 759 - Waste Management in the Nuclear Industry (3 Credits)**

Management of low- and high-level radioactive, hazardous, and mixed waste; transportation, treatment, storage, and disposal techniques. Political and social issues involved with nuclear waste.

**Prerequisites:** EMCH 552.

**EMCH 764 - Mechanical Engineering Projects (3 Credits)**

Guided independent work on current research or design projects, culminating either in a written report or in the construction of a prototype device.

**EMCH 767 - Microelectromechanical Systems (MEMS) (3 Credits)**

Fundamentals of micromachining and microfabrication technologies, microsystem design, MEMS integration and packaging issues, design and analysis of microsensors and microactuators, microfluidics and bioMEMS, and CAD for MEMS. Design project required.

**EMCH 770 - Predictive Modeling: Combining Experiments with Computations (3 Credits)**

Experimental and computational uncertainties; combining experiments with computations to obtain "best - estimate" results with reduced uncertainties; predictive modeling.

**EMCH 771 - Design Properties of Plastics (3 Credits)**

Physical properties of various commercial thermoset and thermoplastic resins. Linear viscoelastic theory and its relationship to measurable mechanical properties of plastics.

**EMCH 772 - Nuclear Materials (3 Credits)**

This course focuses on behavior and performance of materials in nuclear irradiation fields. Materials used in the core for reactivity control and materials used for structural support will be studied.

**EMCH 774 - Radiation Damage (3 Credits)**

Structural materials for nuclear application; Radiation interaction with matter; Microstructure evolution under irradiation; Material properties degradation under irradiation.

**Prerequisites:** EMCH 573.

**EMCH 777 - Aerospace Structures II (3 Credits)**

Principles and applications of aerospace structures with emphasis on the construction and analysis of thin-wall monocoque and semi-monocoque wings and fuselages.

**Prerequisite or Corequisite:** EMCH 577.

**EMCH 778 - Nanomaterials: Synthesis, Characterization, and Applications (3 Credits)**

Advances in nanomaterials; synthesis of nanomaterials; nanoparticles, nanotubes/wires, nanometer thick thin films, nanostructured bulk materials; assembly of nanostructures; biologically inspired structures; structure-property-correlations in nanomaterials and nanostructures; advanced characterization techniques; applications, especially those related to nanotechnology, information technology, MEMS/NEMS, and biotechnology.

**Prerequisites:** EMCH 371.

**EMCH 780 - Energy Storage (3 Credits)**

This course is aimed to provide graduate students with a comprehensive introduction to the various energy storage mechanisms and technologies that are currently being utilized. The content of the course includes methods and mechanisms of common energy storage (thermal, mechanical, chemical and electrochemical).

**EMCH 785 - Design of Composite Materials for Aerospace Structures (3 Credits)**

Property and performance requirements for aerospace structures. Design for stiffness, strength, durability, damage tolerance, and life at the lamina, laminate, and structural level (materials and analysis).

**EMCH 790 - Mechanical Engineering for Teachers I (3 Credits)**

Introduction to concepts of modeling, dimensional analysis, lift, and drag. For preservice teachers enrolled in a professional program (M.A.T. and M.T. students) and in-service teachers (M.Ed. and Ed.S. students) only.

**EMCH 791 - Selected Topics in Thermal Systems (1-3 Credits)**

Special topics related to current research in thermal systems.

**EMCH 792 - Selected Topics in Mechanical Systems (1-3 Credits)**

Special topics related to current research in mechanical systems.

**EMCH 793 - Combustion Processes in Industry (3 Credits)**

Development of the physics of turbulent flow, turbulent combustion, atomization, and vaporization of liquid sprays. Design and analysis of industrial combustion processes including incinerators and furnaces.

**Prerequisites:** EMCH 592.

**EMCH 794 - Thermodynamics (3 Credits)**

An advanced treatment of thermodynamics stressing fundamentals. Application of first and second laws; study of properties and criteria for reactive, non-reactive, and coupled systems.

**Prerequisites:** EMCH 354 and EMCH 394.

**EMCH 797 - Research (1-12 Credits)**

CL: 2020.

**EMCH 799 - Thesis Preparation (1-12 Credits)****EMCH 847 - Fluid Systems Design (3 Credits)**

Hydrodynamics of one and two-phase flow in ducts. Pressure surges and flow stability. Flow induced vibrations. Numerical techniques. Fluid power systems design.

**Prerequisites:** EMCH 741.

**EMCH 857 - Advanced Heat Transfer II (3 Credits)**

Solution of radiation problems through non-absorbing, non-emitting media. Heat exchanger design.

**EMCH 881 - Fatigue of Materials (3 Credits)**

Fatigue of materials presented from mechanics and microstructural points of view. Stress-life, strain life, and Linear Elastic Fracture Mechanics (LEFM) approaches will be covered.

**EMCH 882 - Fracture Mechanics (3 Credits)**

Linear elastic and elastoplastic description of stress fields around cracks. Discussion of stress intensity factor, strain energy density. Dynamic crack propagation and arrest. Fatigue crack propagation. Fracture toughness testing. Applications of concepts.

**Prerequisites:** EMCH 584.

**EMCH 883 - Wave Propagation in Solids (3 Credits)**

Formulation and solution of the wave propagation problem in an unbounded isotropic medium. Study of the reflection-refraction problem at a plane interface. Discussion of Rayleigh, Love, and general surface waves. Wave propagation in a bounded isotropic medium.

**Prerequisites:** ENCP 707.

**EMCH 899 - Dissertation Preparation (1-12 Credits)**

## Aerospace Engineering, M.E.

The Graduate School has general requirements for M.E. students that must be met by all degree candidates (including earning at least 30 credit hours beyond the bachelor's degree for master's degrees). The Aerospace Engineering Program has added requirements (which are listed below) that must be met before students can complete their degrees.

## Degree Requirements

An M.E. student must take a minimum of 30 hours of graded graduate courses. For M.E. degree, the student must take five required courses. All remaining course work must be taken from an approved list of courses,

which includes engineering and mathematics courses numbered 500 or above. Other courses must be approved by the student's advisor and the graduate studies committee. All candidates for the M.E. degree must complete comprehensive assessment that is distinct from program course requirements.

## Program of Study for the Masters Program in Aerospace Engineering: Proposed Curriculum

### Required Courses

All M.S. and M.E. candidates in Aerospace Engineering will be required to take the five (5) core courses listed below:

Course	Title	Credits
EMCH 508	Finite Element Analysis in Mechanical Engineering	3
EMCH 577	Aerospace Structures I	3
EMCH 744	Aerodynamics & Flight Mechanics	3
EMCH 585	Introduction to Composite Materials	3
EMCH 721	Aeroelasticity	3
<b>Total Credit Hours</b>		<b>15</b>

### Elective Aerospace Courses

All students in Aerospace Engineering must take a minimum of two (2) courses from the following courses:

Course	Title	Credits
EMCH 743	Aircraft and Rocket Propulsion	3
EMCH 777	Aerospace Structures II	3
EMCH 522	Design for Manufacture and Assembly	3
EMCH 544	Compressible Fluid Flow	3
EMCH 516	Control Theory in Mechanical Engineering	3
EMCH 532	Intermediate Dynamics	3
EMCH 571	Mechanical Behavior of Materials	3
EMCH 701	Methods of Engineering Analysis	3
ENCP 707	Continuum Mechanics	3
EMCH 721	Aeroelasticity	3
EMCH 751	Advanced Heat Transfer	3
EMCH 741	Viscous and Turbulent Flow	3
EMCH 794	Thermodynamics	3
EMCH 785	Design of Composite Materials for Aerospace Structures	3
EMCH 881	Fatigue of Materials	3

### Other Elective Courses

All remaining work must be taken from an approved list of courses which currently includes all engineering courses numbered 500 or above and math courses numbered 700 or above. Business courses numbered 500 or above may be taken with advance approval by the advisor and the Graduate Studies Committee. Other courses will be added to the list as approved by the faculty.

## Additional Program of Study Requirements

### Course and Program Grades

Courses **not** satisfying the requirements for a graduate degree are:

1. Any course with a grade of D+, D or F.
2. More than 12 credits with grade of C+ or below (the 4-C Rule).
3. Any course taken on a non-letter grade basis (except thesis).

4. More than 12 semester hours of credits from a previous graduate degree program.

The student must **maintain a minimum grade point average of 3.0** in:

1. All courses taken as part of the official degree program.
2. All courses numbered 700 or above.
3. All courses taken for graduate credit, including those not included in the official degree program.
4. Pass/Fail — A "fail" grade counts toward the 4-C rule.

### Publication Requirement for M.S. Students

An educational objective for M.S. students is that they have the ability to communicate their research results through oral presentations and written publications. Consistent with this objective, an M.S. student is required to submit, based on research performed while at USC, at least one conference paper (or abstract with presentation) or one journal paper prior to graduation.

### Master's Thesis

A thesis is required of all students seeking the M.S. degree. The student's academic advisor must approve the subject of the thesis. The Graduate School will furnish general thesis regulations upon request. Any student who wishes to use University facilities or to confer with the faculty on thesis work must be officially enrolled for thesis credit.

### Thesis Committee

A student's M.S. Thesis Committee consists of the student's advisor and the second reader of the student's thesis.

### Thesis Presentation and Defense

The thesis presentation is to be open to all members of the University community and guests. During the Fall and Spring semesters, the presentation and defense are to be conducted during normal business hours and on a day that faculty are expected to be on campus. The Graduate Director must approve the date and time of presentations given during the summer sessions.

### Comprehensive Examination

For the M.E. degree, a student passes the comprehensive exam by demonstrating competence in a written exam.

## Aerospace Engineering, M.S.

The Graduate School has general requirements for M.S. students that must be met by all degree candidates (including earning at least 30 credit hours beyond the bachelor's degree for master's degrees). The Aerospace Engineering Program has added requirements (which are listed below) that must be met before students can complete their degrees.

## Learning Outcomes

- Students will demonstrate a sound understanding of the characteristics of low speed aerodynamics, transonic aerodynamics and supersonic aerodynamics.
- Students will demonstrate a sound understanding of the modelling of incompressible inviscid, viscous and compressible flow.
- Students will demonstrate a sound understanding of applied aircraft aerodynamics, airfoil and wing theory and of aerodynamic design.
- Students will demonstrate a sound understanding of typical aerospace materials.
- Students will demonstrate a sound understanding of material failure modes.



- Students will demonstrate a sound understanding of the characteristics of thin walled aerospace structures.
- Students will demonstrate a sound understanding of mechanical and adhesive joints.
- Students will demonstrate a sound understanding of aero-elasticity.
- Students will demonstrate a sound understanding of testing and characterization of materials and structures.
- Students will demonstrate a sound understanding of manufacturing principles and technology used in aerospace industry.
- Students will demonstrate the ability to analyze aerospace structures.
- Students will demonstrate the ability to design aerospace structures.
- Students will demonstrate the ability to analyze steady gliding, horizontal and climbing flight, analyze turning performance (three dimensional equations of motion, coordinate systems, Euler angles, transformation matrices).
- Students will demonstrate the ability to estimate airfield performance (take-off and landing).
- Students will demonstrate the ability to analyze unsteady climb and descent (including minimum time to climb problem);
- Students will demonstrate the ability to analyze cruise flight and transport performance.
- Students will demonstrate the ability to develop equations of motion with a wind gradient present.
- Students will have a basic understanding of how complex aerodynamic problems can be solved with the finite element method.
- Students will demonstrate a sound understanding of how static structural problems can be solved with the finite element method.
- Students will demonstrate a sound understanding of the interaction between aerodynamic loads, structural deformations and structural instability.
- Students will demonstrate an in-depth understanding of compressible flows.
- Students will demonstrate a basic understanding of turbulent flow analysis.
- Students will demonstrate an in-depth understanding of thermodynamics.
- Students will demonstrate an in-depth understanding of fatigue.
- Students will demonstrate a basic understanding of buckling of plates and shells.
- Students will demonstrate an in-depth understanding of composite material design and analysis.
- Students will demonstrate a thorough understanding of manufacturing technology.
- Students will demonstrate a sound understanding of energy sources and power generation in current and future propulsion systems for air and space applications.
- Students will demonstrate a sound understanding of the working concepts of aircraft and rocket engines with emphasis on the performance and characteristics of various types of propulsion systems, including turbojet, turbofan, turboprop, ramjet, scramjet and liquid and solid propellant rockets.
- Students will demonstrate the ability to characterize and analyze propulsion systems based on thermodynamics, chemistry, fluid mechanics and combustion fundamentals.
- Students will demonstrate understanding of longitudinal, lateral and directional aircraft stability.

- Students will demonstrate understanding of longitudinal, lateral and directional control systems.
- Students will demonstrate understanding of control theory applied to aerospace systems.
- Students will demonstrate the ability to derive mathematical models (plant models) that govern flight for various aerospace systems such as airplanes, helicopters and satellites.
- Students will demonstrate the ability to create control laws for stable flight.

## Degree Requirements

An M.S. student must take a minimum of 24 hours of graded graduate courses and 6 hours of thesis credits leading to a thesis. For the M.S. degree, the student must take five required courses. All remaining course work must be taken from an approved list of courses, which includes engineering and mathematics courses numbered 500 or above. Other courses must be approved by the student's advisor and the graduate studies committee. All candidates for the M.S. degree must complete comprehensive assessment that is distinct from program course requirements.

### Program of Study for the Masters Program in Aerospace Engineering: Proposed Curriculum

#### Required Courses

All M.S. and M.E. candidates in Aerospace Engineering will be required to take the five (5) core courses listed below:

Course	Title	Credits
EMCH 508	Finite Element Analysis in Mechanical Engineering	3
EMCH 577	Aerospace Structures I	3
EMCH 744	Aerodynamics & Flight Mechanics	3
EMCH 585	Introduction to Composite Materials	3
EMCH 721	Aeroelasticity	3
<b>Total Credit Hours</b>		<b>15</b>

#### Elective Aerospace Courses

All students in Aerospace Engineering must take a minimum of two (2) courses from the following courses:

Course	Title	Credits
Select at least two of the following:		
EMCH 743	Aircraft and Rocket Propulsion	6
EMCH 777	Aerospace Structures II	
EMCH 522	Design for Manufacture and Assembly	
EMCH 544	Compressible Fluid Flow	
EMCH 516	Control Theory in Mechanical Engineering	
EMCH 532	Intermediate Dynamics	
EMCH 571	Mechanical Behavior of Materials	
EMCH 701	Methods of Engineering Analysis	
ENCP 707	Continuum Mechanics	
ECHE 721	Advanced Heat Flow Analysis	
EMCH 751	Advanced Heat Transfer	
EMCH 741	Viscous and Turbulent Flow	
EMCH 794	Thermodynamics	
EMCH 785	Design of Composite Materials for Aerospace Structures	

**Other Elective Courses**

All remaining work must be taken from an approved list of courses which currently includes all engineering courses numbered 500 or above and math courses numbered 700 or above. Business courses numbered 500 or above may be taken with advance approval by the advisor and the Graduate Studies Committee. Other courses will be added to the list as approved by the faculty.

**Additional Program of Study Requirements****Course and Program Grades**

Courses **not** satisfying the requirements for a graduate degree are:

1. Any course with a grade of D+, D or F.
2. More than 12 credits with grade of C+ or below (the 4-C Rule).
3. Any course taken on a non-letter grade basis (except thesis).
4. More than 12 semester hours of credits from a previous graduate degree program.

The student must **maintain a minimum grade point average of 3.0** in:

1. All courses taken as part of the official degree program.
2. All courses numbered 700 or above.
3. All courses taken for graduate credit, including those not included in the official degree program.
4. Pass/Fail – A “fail” grade counts toward the 4-C rule.

**Publication Requirement for M.S. Students**

An educational objective for M.S. students is that they have the ability to communicate their research results through oral presentations and written publications. Consistent with this objective, an M.S. student is required to submit, based on research performed while at USC, at least one conference paper (or abstract with presentation) or one journal paper prior to graduation.

**Master's Thesis**

A thesis is required of all students seeking the M.S. degree. The student's academic advisor must approve the subject of the thesis. The Graduate School will furnish general thesis regulations upon request. Any student who wishes to use University facilities or to confer with the faculty on thesis work must be officially enrolled for thesis credit.

**Thesis Committee**

A student's M.S. Thesis Committee consists of the student's advisor and the second reader of the student's thesis.

**Thesis Presentation and Defense**

The thesis presentation is to be open to all members of the University community and guests. During the Fall and Spring semesters, the presentation and defense are to be conducted during normal business hours and on a day that faculty are expected to be on campus. The Graduate Director must approve the date and time of presentations given during the summer sessions.

**Comprehensive Examination**

A comprehensive examination covering the major field of study is required of all candidates for the M.S. degree, which is conducted immediately following the thesis defense. The student's thesis committee administers this exam.

## Mechanical Engineering, M.E.

The Graduate School has general requirements for M.E., M.S., and Ph.D. students that must be met by all degree candidates (including earning at least 30 credit hours beyond the bachelor's degree for master's degrees and at least 60 credit hours beyond the bachelor's degree for doctoral degrees). The Department of Mechanical Engineering has added requirements (some of which are described below) that must be met before students can complete their degrees. Consult the department for complete, current requirements.

## Learning Outcomes

The students will demonstrate the ability to:

- Apply energy, momentum, continuity, state and constitutive equations to thermal, fluids and mechanical systems in a logical and discerning manner. The core classes offered in the program address one to several of these areas individually, and the aggregate as a whole. By measuring average aggregate grade performance in the core classes, this goal can be monitored and assessed.
- Identify, formulate, and solve thermal, fluid and mechanical engineering problems by applying first principles, including open-ended problems.
- Use modern modeling and simulation techniques, and computing tools.

## Degree Requirements (30 Hours)

**For master's degrees in mechanical engineering:** An M.S. student must take a minimum of 24 hours of graded graduate courses and 6 hours of thesis credits leading to a thesis. An M.E. student must take a minimum of 30 hours of graded graduate courses. For both the M.S. and M.E. degrees, the student must take four required courses. All remaining course work must be taken from an approved list of courses, which includes engineering and mathematics courses numbered 500 or above. Other courses must be approved by the student's advisor and the graduate studies committee. All candidates for both the M.S. and M.E. degrees must complete a comprehensive assessment that is distinct from program course requirements.

## Mechanical Engineering, M.S.

The Graduate School has general requirements for M.E., M.S., and Ph.D. students that must be met by all degree candidates (including earning at least 30 credit hours beyond the bachelor's degree for master's degrees and at least 60 credit hours beyond the bachelor's degree for doctoral degrees). The Department of Mechanical Engineering has added requirements (some of which are described below) that must be met before students can complete their degrees. Consult the department for complete, current requirements.

## Learning Outcomes

The students will demonstrate the ability to:

- Apply energy, momentum, continuity, state and constitutive equations to thermal, fluids and mechanical systems in a logical and discerning manner. The core classes offered in the program address one to several of these areas individually, and the aggregate as a whole. By measuring average aggregate grade performance in the core classes, this goal can be monitored and assessed.

- Identify, formulate, and solve thermal, fluid and mechanical engineering problems by applying first principles, including open-ended problems.
- Use modern modeling and simulation techniques, and computing tools.

## Degree Requirements (30 Hours)

**For master's degrees in mechanical engineering:** An M.S. student must take a minimum of 24 hours of graded graduate courses and 6 hours of thesis credits leading to a thesis. An M.E. student must take a minimum of 30 hours of graded graduate courses. For both the M.S. and M.E. degrees, the student must take four required courses. All remaining course work must be taken from an approved list of courses, which includes engineering and mathematics courses numbered 500 or above. Other courses must be approved by the student's advisor and the graduate studies committee. All candidates for both the M.S. and M.E. degrees must complete a comprehensive assessment that is distinct from program course requirements.

## Mechanical Engineering, Ph.D.

The Graduate School has general requirements for Ph.D. students that must be met by all degree candidates (including earning at least 60 credit hours beyond the bachelor's degree for doctoral degrees). The Department of Mechanical Engineering has additional requirements (some of which are described below) that must be met before students can complete their degrees. Consult the department for complete, current requirements.

## Learning Outcomes

- The graduates shall demonstrate expertise in a core subject area of mechanical engineering.

## Degree Requirements (60 Post-Baccalaureate Hours)

**For doctoral degrees in mechanical engineering:** A Ph.D. student must complete 12 hours of dissertation credit leading to a dissertation. A student with a master's degree in mechanical engineering or a closely related field must take at least 18 hours of graded graduate courses. A student without a master's degree must take at least 48 hours of graduate courses, of which 42 or more hours must be graded graduate courses. The remaining hours can be in graded graduate courses and must include the core courses required of all master's degree students.

## Nuclear Engineering, M.E.

The Graduate School has general requirements for M.E., M.S., and Ph.D. students that must be met by all degree candidates (including earning at least 30 credit hours beyond the bachelor's degree for master's degrees and at least 60 credit hours beyond the bachelor's degree for doctoral degrees). The Department of Mechanical Engineering has added requirements (some of which are described below) that must be met before students can complete their degrees. Consult the department for complete, current requirements.

## Learning Outcomes

- Students will describe, explain, and compute the magnitude of radioactivity associated with nuclear reactions and reactor operation.

- Students will calculate the critical size of a nuclear reactor based on the specification of materials present in the reactor.
- Students will describe and compute reactivity effects of control materials, temperature changes, and fission product poisoning.
- Students will describe and compute neutron slowing down and thermalization processes for generating neutron cross data needed in modern reactor physics codes for designing and analyzing nuclear reactors.
- Students will evaluate fuel cycles in terms of processing, costs, and relative benefits.
- Students will evaluate fuel cycles for sustainability including resource availability and external costs such as environmental impact.
- Students will evaluate fuel management and refueling options in terms of cost and resource requirements.
- Students will describe the mechanisms involved in and compute quantities related to the interaction of various forms of radiation with matter and the methods of characterizing radiation fields and sources.
- Students will design radiological shielding for radioactive sources, accelerators, and nuclear reactors.
- Students will describe and explain the current PWR and BWR power plants' operating and protection systems.
- Students will describe and explain the new generation of PWR and BWR power plants' enhanced systems' features and capabilities.
- Students will thermodynamically analyze current reactor system, plus future concepts being proposed and developed.
- Students will use one- and two-group diffusion theory to compute the critical size of a nuclear reactor based on the specification of materials present in the reactor.
- Students will describe and compute the time-dependent behavior of a nuclear reactor, including computation and control of reactivity changes.
- Students will describe, explain, and compute the effect of irradiation on materials behavior.
- Students will describe, explain, and compute quantities related to the in-reactor material degradation.
- Students will describe, explain, and compute how neutronics and thermal-hydraulics are coupled through heat generation rate and its distribution for both full power and shutdown conditions.
- Students will describe, explain, and compute the individual thermal-hydraulic behavior of key reactor system components (e.g., core, steam generator, containment, condenser, etc.) and their interaction with neighboring components within a power cycle.
- Students will compute pressure drops and heat transfer coefficients within single to two-phase flow channels under forced convection conditions.
- Students will compute fuel element temperatures (e.g., fuel centerline) and thermal transition criteria (e.f., critical heat flux) within reactor core "Hot" Channels.
- Students will analyze of the safety of nuclear energy facilities focusing on reliability and probabilistic risk analysis.
- Students will assess the reliability of an energy system from its basic elements.
- Students will describe the major features of nuclear reactors. Describe, explain, and compute fundamental materials behavior including phase equilibria, crystal structure, mechanical properties, and chemical thermodynamics.

- Students will calculate quantities related to heat transfer in a fuel pin, mass diffusion within cladding, radiation damage, uranium enrichment, and thermomechanical behavior in oxide fuels.
- Students will describe, explain, and compute the behaviour of irradiated nuclear fuel.
- Students will identify and explain the design criteria for materials selection in nuclear reactor systems.
- Students will describe, explain, and compute atomic and nuclear physics concepts such as nuclear structure and radioactive decay, and radiation sources in general.
- Students will describe, explain, and compute irradiation effects on materials at the microscopic level.
- Students will describe, explain, and compute radiation effects on materials at the macroscopic level.
- Students will describe, explain, and compute materials degradation mechanisms due to irradiation in nuclear cladding and structural materials
- Students will combine experiments and computations, including associated uncertainties to predict best-estimate results with reduced uncertainties.
- Students will apply the adjoint method for computing sensitivities of model results to model parameters, initial and boundary conditions.
- Students will describe, explain, and compute radiation interaction with matter.
- Students will describe, explain, and compute quantities related to radiation detection and measurement, and nuclear instruments and detectors.
- Students will describe and explain an aspect of nuclear fuel properties and behavior.
- Students will explain the underlying principles of thermodynamics and the concepts of energy, enthalpy, entropy, and heat capacity.
- Students will use equilibrium calculations to predict behavior and be able to draw and interpret phase diagrams from free energy curves.
- Students will use a chemical equilibrium software package, FactSage, and apply it to practical problems.
- Students will compute uncertainties (variances, covariances) in model parameters and propagate these to compute uncertainties in model responses (results).
- Students will have the ability to execute a research plan, to generate and analyze original research results, and to communicate those results through oral presentations and written publications.
- The graduates shall have the basic skills needed for life-long learning and professional development.

## Degree Requirements (30 Hours)

**For master's degrees in nuclear engineering:** An M.S. student must complete 24 hours of graded graduate courses and 6 hours of thesis credit leading to a thesis. An M.E. student must complete 30 hours of graded graduate courses. All master's degree students will have the core of three required common nuclear engineering courses and one required math course from a given list and will choose the remaining courses from a given list.

## Nuclear Engineering, M.S.

The Graduate School has general requirements for M.E., M.S., and Ph.D. students that must be met by all degree candidates (including earning at least 30 credit hours beyond the bachelor's degree for master's

degrees and at least 60 credit hours beyond the bachelor's degree for doctoral degrees). The Department of Mechanical Engineering has added requirements (some of which are described below) that must be met before students can complete their degrees. Consult the department for complete, current requirements.

## Learning Outcomes

- Students will describe, explain, and compute the magnitude of radioactivity associated with nuclear reactions and reactor operation.
- Students will calculate the critical size of a nuclear reactor based on the specification of materials present in the reactor.
- Students will describe and compute reactivity effects of control materials, temperature changes, and fission product poisoning.
- Students will describe and compute neutron slowing down and thermalization processes for generating neutron cross data needed in modern reactor physics codes for designing and analyzing nuclear reactors.
- Students will evaluate fuel cycles in terms of processing, costs, and relative benefits.
- Students will evaluate fuel cycles for sustainability including resource availability and external costs such as environmental impact.
- Students will evaluate fuel management and refueling options in terms of cost and resource requirements.
- Students will describe the mechanisms involved in and compute quantities related to the interaction of various forms of radiation with matter and the methods of characterizing radiation fields and sources.
- Students will design radiological shielding for radioactive sources, accelerators, and nuclear reactors.
- Students will describe and explain the current PWR and BWR power plants' operating and protection systems.
- Students will describe and explain the new generation of PWR and BWR power plants' enhanced systems' features and capabilities.
- Students will thermodynamically analyze current reactor system, plus future concepts being proposed and developed.
- Students will use one- and two-group diffusion theory to compute the critical size of a nuclear reactor based on the specification of materials present in the reactor.
- Students will describe and compute the time-dependent behavior of a nuclear reactor, including computation and control of reactivity changes.
- Students will describe, explain, and compute the effect of irradiation on materials behavior.
- Students will describe, explain, and compute quantities related to the in-reactor material degradation.
- Students will describe, explain, and compute how neutronics and thermal-hydraulics are coupled through heat generation rate and its distribution for both full power and shutdown conditions.
- Students will describe, explain, and compute the individual thermal-hydraulic behavior of key reactor system components (e.g., core, steam generator, containment, condenser, etc.) and their interaction with neighboring components within a power cycle.
- Students will compute pressure drops and heat transfer coefficients within single to two-phase flow channels under forced convection conditions.

- Students will compute fuel element temperatures (e.g., fuel centerline) and thermal transition criteria (e.f., critical heat flux) within reactor core “Hot” Channels.
- Students will analyze the safety of nuclear energy facilities focusing on reliability and probabilistic risk analysis.
- Students will assess the reliability of an energy system from its basic elements.
- Students will describe the major features of nuclear reactors. Describe, explain, and compute fundamental materials behavior including phase equilibria, crystal structure, mechanical properties, and chemical thermodynamics.
- Students will calculate quantities related to heat transfer in a fuel pin, mass diffusion within cladding, radiation damage, uranium enrichment, and thermomechanical behavior in oxide fuels.
- Students will describe, explain, and compute the behaviour of irradiated nuclear fuel.
- Students will identify and explain the design criteria for materials selection in nuclear reactor systems.
- Students will describe, explain, and compute atomic and nuclear physics concepts such as nuclear structure and radioactive decay, and radiation sources in general.
- Students will describe, explain, and compute irradiation effects on materials at the microscopic level.
- Students will describe, explain, and compute radiation effects on materials at the macroscopic level.
- Students will describe, explain, and compute materials degradation mechanisms due to irradiation in nuclear cladding and structural materials
- Students will combine experiments and computations, including associated uncertainties to predict best-estimate results with reduced uncertainties.
- Students will apply the adjoint method for computing sensitivities of model results to model parameters, initial and boundary conditions.
- Students will describe, explain, and compute radiation interaction with matter.
- Students will describe, explain, and compute quantities related to radiation detection and measurement, and nuclear instruments and detectors.
- Students will describe and explain an aspect of nuclear fuel properties and behavior.
- Students will explain the underlying principles of thermodynamics and the concepts of energy, enthalpy, entropy, and heat capacity.
- Students will use equilibrium calculations to predict behavior and be able to draw and interpret phase diagrams from free energy curves.
- Students will use a chemical equilibrium software package, FactSage, and apply it to practical problems.
- Students will compute uncertainties (variances, covariances) in model parameters and propagate these to compute uncertainties in model responses (results).
- Students will have the ability to execute a research plan, to generate and analyze original research results, and to communicate those results through oral presentations and written publications.
- The graduates shall have the basic skills needed for life-long learning and professional development.

## Degree Requirements (30 Hours)

**For master's degrees in nuclear engineering:** An M.S. student must complete 24 hours of graded graduate courses and 6 hours of thesis credit leading to a thesis. An M.E. student must complete 30 hours of graded graduate courses. All master's degree students will have the core of three required common nuclear engineering courses and one required math course from a given list and will choose the remaining courses from a given list.

## Nuclear Engineering, Ph.D.

The Graduate School has general requirements Ph.D. students that must be met by all degree candidates (including earning at least 60 credit hours beyond the bachelor's degree for doctoral degrees). The nuclear engineering program has additional requirements (some of which are described below) that must be met before students can complete their degrees. Consult the department for complete, current requirements.

## Learning Outcomes

- Students will describe, explain, and compute the magnitude of radioactivity associated with nuclear reactions and reactor operation.
- Students will calculate the critical size of a nuclear reactor based on the specification of materials present in the reactor.
- Students will describe and compute reactivity effects of control materials, temperature changes, and fission product poisoning.
- Students will describe and compute neutron slowing down and thermalization processes for generating neutron cross data needed in modern reactor physics codes for designing and analyzing nuclear reactors.
- Students will evaluate fuel cycles in terms of processing, costs, and relative benefits.
- Students will evaluate fuel cycles for sustainability including resource availability and external costs such as environmental impact.
- Students will evaluate fuel management and refueling options in terms of cost and resource requirements.
- Students will describe the mechanisms involved in and compute quantities related to the interaction of various forms of radiation with matter and the methods of characterizing radiation fields and sources.
- Students will design radiological shielding for radioactive sources, accelerators, and nuclear reactors.
- Students will describe and explain the current PWR and BWR power plants' operating and protection systems.
- Students will describe and explain the new generation of PWR and BWR power plants' enhanced systems' features and capabilities.
- Students will thermodynamically analyze current reactor system, plus future concepts being proposed and developed.
- Students will use one- and two-group diffusion theory to compute the critical size of a nuclear reactor based on the specification of materials present in the reactor.
- Students will describe and compute the time-dependent behavior of a nuclear reactor, including computation and control of reactivity changes.
- Students will describe, explain, and compute the effect of irradiation on materials behavior.
- Students will describe, explain, and compute quantities related to the in-reactor material degradation.

- Students will describe, explain, and compute how neutronics and thermal-hydraulics are coupled through heat generation rate and its distribution for both full power and shutdown conditions.
- Students will describe, explain, and compute the individual thermal-hydraulic behavior of key reactor system components (e.g., core, steam generator, containment, condenser, etc.) and their interaction with neighboring components within a power cycle.
- Students will compute pressure drops and heat transfer coefficients within single to two-phase flow channels under forced convection conditions.
- Students will compute fuel element temperatures (e.g., fuel centerline) and thermal transition criteria (e.f., critical heat flux) within reactor core "Hot" Channels.
- Students will analyze of the safety of nuclear energy facilities focusing on reliability and probabilistic risk analysis.
- Students will assess the reliability of an energy system from its basic elements.
- Students will describe the major features of nuclear reactors. Describe, explain, and compute fundamental materials behavior including phase equilibria, crystal structure, mechanical properties, and chemical thermodynamics.
- Students will calculate quantities related to heat transfer in a fuel pin, mass diffusion within cladding, radiation damage, uranium enrichment, and thermomechanical behavior in oxide fuels.
- Students will describe, explain, and compute the behaviour of irradiated nuclear fuel.
- Students will identify and explain the design criteria for materials selection in nuclear reactor systems.
- Students will describe, explain, and compute atomic and nuclear physics concepts such as nuclear structure and radioactive decay, and radiation sources in general.
- Students will describe, explain, and compute irradiation effects on materials at the microscopic level.
- Students will describe, explain, and compute radiation effects on materials at the macroscopic level.
- Students will describe, explain, and compute materials degradation mechanisms due to irradiation in nuclear cladding and structural materials
- Students will combine experiments and computations, including associated uncertainties to predict best-estimate results with reduced uncertainties.
- Students will apply the adjoint method for computing sensitivities of model results to model parameters, initial and boundary conditions.
- Students will describe, explain, and compute radiation interaction with matter.
- Students will describe, explain, and compute quantities related to radiation detection and measurement, and nuclear instruments and detectors.
- Students will describe and explain an aspect of nuclear fuel properties and behavior.
- Students will explain the underlying principles of thermodynamics and the concepts of energy, enthalpy, entropy, and heat capacity.
- Students will use equilibrium calculations to predict behavior and be able to draw and interpret phase diagrams from free energy curves.
- Students will use a chemical equilibrium software package, FactSage, and apply it to practical problems.

- Students will compute uncertainties (variances, covariances) in model parameters and propagate these to compute uncertainties in model responses (results).
- Students will have the ability to identify pertinent research problems, and formulate a research plan.
- Students will have the ability to execute a research plan, to generate and analyze original results, and to communicate those results through oral presentations and written publications.
- The students will demonstrate the ability to access reliable information sources outside of those made available through the normal coursework channels.

## Degree Requirements (60 Post-Baccalaureate Hours)

**For doctoral degrees in nuclear engineering:** A Ph.D. student must complete 12 hours of dissertation credit leading to a dissertation. A student with a master's degree in mechanical engineering or a closely related field must take at least 18 hours of graded graduate courses. A student without a master's degree must take at least 48 hours of graduate courses, of which 42 or more hours must be graded graduate courses. The remaining hours can be in research (EMCH 797), and the graded graduate courses must include the core courses required of all master's degree students.

## Technology Innovation and Entrepreneurial Engineering, M.S.

The goal of the program is to inspire and nurture the culture of innovation among students of engineering and computing. The program includes an integrated curriculum, new venture creation projects and an innovation immersion module, and is taught by a blend of academic faculty as well as experienced entrepreneurs and investors from private sector. Students learn about innovation theories as well as real-world examples. It is expected that the graduates of this program will demonstrate knowledge in technology ideation, prototyping, business plan development, venture creation, legal protection, corporate innovation strategies and entrepreneurial practices.

## Program Requirements

The admission criteria will generally conform to those currently required by the USC Graduate School. Individuals with the following qualifications will be considered for admission into the program:

- Must hold a B.S. degree from an accredited program (or equivalent if from an international university) in engineering, computing, technology disciplines, or science, and must provide transcripts from the institution where the degree was obtained.
- A minimum undergraduate grade point average (GPA) of 3.0.
- International students are required to submit qualifying TOEFL or equivalent test score.
- Individuals may request a waiver of some of the above requirements (e.g., undergraduate GPA less than 3.0, or undergraduate degree not in engineering) and admission to the program if they provide sufficient evidence to the graduate program director that they have had compensatory industrial experience to warrant an exception.

## Learning Outcomes

- The student learning outcomes for the program is that students demonstrate knowledge in navigating through the entrepreneurial process including ideation feasibility analysis prototyping legal protection business model development and capital raise.
- The student learning outcomes for the program is that students demonstrate knowledge in navigating through the entrepreneurial process including ideation feasibility analysis prototyping legal protection business model development and capital raise.

## Degree Requirements (30 Hours)

Requirements	Credit Hours
Engineering and Computing	18
Business	9
Law	3

## Required Courses (24 Hours)

Course	Title	Credits
ECIV 707	Management of Engineering Projects	3
EMCH 522	Design for Manufacture and Assembly	3
ENCP 730	Cases in Technology Feasibility Analysis	3
ENCP 735	Developing and Launching New Ventures in Science and Technology	3
ENCP 737	Entrepreneurial Laboratory	6
COSM 701	Business and Legal Issues for Science Managers	3
MGMT 777	Innovation and New Venture Analysis	3
<b>Total Credit Hours</b>		<b>24</b>

## Business Electives (6 Hours)

Choose two approved business courses (500-level or above). Students should consult with the program director prior to enrolling in elective courses.

## Comprehensive Assessment

Upon the completion of 24 credit hours of coursework, students are required to complete successfully a comprehensive exam. The exam will include a case study report that synthesizes and integrates knowledge gained from the core courses of the program.

# COLLEGE OF HOSPITALITY, RETAIL, AND SPORT MANAGEMENT

Matt T. Brown, *Interim Dean*

David A. Cárdenas, *Associate Dean of Academic Programs*

Samuel Todd, *Associate Dean of Faculty Affairs, Diversity, and Operations*

Kathy Smiling, *Assistant Dean of Student Services*

Adonis Sporty Jeralds, *Assistant Dean of Diversity and Inclusion*

Marianne C. Bickle, *Director, Interdisciplinary Studies and Online Learning*

Thomas H. Regan, *Interim Chair, Department of Sport and Entertainment Management*

Robin B. DiPietro, *Director, School of Hotel, Restaurant, and Tourism Management*

Jeffery M. Campbell, *Chair, Department of Retailing*

The College of Hospitality, Retail, and Sport Management is authorized to award the Master of International Hospitality and Tourism Management and the Doctorate in Hospitality Management through the School of Hotel, Restaurant, and Tourism Management; the Master of Retailing through the Department of Retailing; and the Doctorate and Master of Sport and Entertainment Management through the Department of Sport and Entertainment Management.

## Departments

- Retailing (p. 328)
- School of Hotel, Restaurant, and Tourism Management (p. 330)
- Sport and Entertainment Management (p. 335)

## Retailing

Department Website (<http://www.hrms.sc.edu/retail/>)

Mark Rosenbaum, *Chair*

## Degree Offered Master of Retailing

The world of retailing is changing every day with companies vying for their share of the increasingly crowded marketplace on a global stage.

The Master of Retailing degree is designed to provide individuals in a variety of retail settings the skills they need to rise above their peers and become leaders in today's dynamic retail industry. Whether you are a corporate industry professional looking to sharpen and upgrade your skill set, an entrepreneur who wants to learn how to set up and run a brick-and-mortar store and/or establish an online retail presence, or you are looking to enter the academic arena with the latest in software applications in an enriched learning environment, the Master of Retailing degree will provide you with career-ready skills coupled with the latest industry software. The Master of Retailing degree will provide individuals with the skills that are in demand across the retail industry in roles from operation and supply chain management to data analytics.

## Admission Requirements

Admission requirements conform to the general regulations of The Graduate School and regional and national accreditation standards. Applicants must submit to The Graduate School an application form, and a nonrefundable application fee, one official transcript from each post-secondary institution attended (mailed to The Graduate School) showing their complete academic record, two letters of recommendation, records of immunization, and reports of examination scores on the GRE or GMAT.

Applicants for admission to the Master of Retailing program will be evaluated using a combination of academic and professional factors. They normally are expected to have an undergraduate GPA of at least 3.00 for all undergraduate coursework and either a combined GRE score of 300 on the verbal and quantitative components or a total of 500 on the GMAT. Applicants may request GRE/GMAT requirement to be waived under certain conditions (see GRE/GMAT Waiver Information).

Admission decisions may also take into consideration other criteria, such as professional experience, in the retailing industry, involvement in professional and/or student organizations, and strength of recommendations from professional and academic sources.

International applicants are required to submit with their application a certified transcript indicating the nature and scope of their academic training. An applicant whose native language is not English is required to submit a minimum TOEFL score of 570 (Paper-based Test, PBT), 230 (Computer-based Test, CBT), or 88 (Internet-based Test, iBT) on the TOEFL or 6.5 on the IELTS. Prior to enrollment in the Master of Retailing program, international students whose native language is not English are required to take an English diagnostic test administered by the English Program for Internationals. Students with deficiencies are provided opportunities for further study in reading, writing, and speaking English.

## GRE/GMAT Waiver Information

### Policy to Request GRE/GMAT Requirement Be Waived

We understand every student is unique and students with different background can bring various experiences and perspectives to our classrooms.

Although our admissions criteria include GRE or GMAT score, the Department of Retailing at the University of South Carolina also values other important factors than the standardized test scores in determining a student's potential to succeed in our Master's program.

A student may petition for a GRE/GMAT requirement waiver when he or she meets at least ONE of the following criteria:

- Four or more years of professional (managerial) experience in a retailing or service-oriented organization.
- A completed baccalaureate degree from The University of South Carolina, or from an \*accredited institution, with a cumulative GPA of 3.40/4.00.
- A completed Master's degree, with a 3.0 (or better) GPA from the University of South Carolina, or from an accredited institution<sup>1</sup>.

<sup>1</sup> To check if your school is accredited, visit <http://ope.ed.gov/accreditation/Search.aspx>

You may submit a GRE/GMAT Waiver Request Form demonstrating that you have satisfied the above criteria prior to submitting your application. It is recommended that applicants requesting to have the test requirement waived submit their Request Form, along with



supporting documentation as soon as possible. This will allow the applicant time to take the exam in the event that the request is denied.

## Programs

- Retailing, M.R. (p. 329)

## Courses

### RETL 525 - Legal Aspects of Entrepreneurship and E-Commerce (3 Credits)

Examination of domestic and international laws affecting retail entrepreneurship and online commerce, such as data privacy and breach response, intellectual property protection, sales tax, advertising and unfair trade practices, consumer protection laws, employment laws, and legal obligations involving physical locations.

**Prerequisites:** SPTE 240 or equivalent.

### RETL 530 - Fashion and the Law (3 Credits)

Examination of domestic and international laws which affect the fashion industry, such as intellectual property protection, licensing agreements, operational and marketing issues, and international trade.

**Prerequisites:** SPTE 240 or equivalent.

### RETL 535 - Retail Logistics (3 Credits)

Examination of the flow of retail inventory from initial production to final purchase. Meets the needs of individuals in retail organizations from entry-level sales floor personnel to buyers. Students must be qualified to enroll in a 500 level course at The University of South Carolina.

### RETL 551 - Retail and Fashion Business Planning (3 Credits)

Essential skills for building a new or expanding an existing retail or fashion business in both brick-and-mortar and online venues by developing a marketing plan and corresponding e-Commerce website for a business or fashion organization.

**Prerequisites:** RETL 351.

### RETL 562 - Advanced Merchandising Management Strategies (3 Credits)

The analysis of assortment planning and inventory management of apparel products utilizing merchandising principles and industry software.

### RETL 569 - Advanced Retail Promotion and Social Media Analytics (3 Credits)

Essential principles and analytical tools used in retail promotion; appraisal of methods and outcomes via field experiences, visuals, and simulations.

### RETL 590 - Special Topics in Retail Management (3 Credits)

Course content varies. May be repeated once under a different title.

### RETL 592 - Retailing/Fashion Merchandising Field Study (3 Credits)

Study of international/domestic fashion manufacturers, retailers, ancillary businesses, and selected resident buying offices. May be repeated once for credit. Must be in good standing with a 2.0 GPA or better; No pending or past judicial council infractions.

### RETL 600 - Fundamentals of Omni-Channel Retailing (3 Credits)

Exploration of the fundamentals of Omni-Channel Retailing.

### RETL 640 - Personnel Development & Relations Management (3 Credits)

Advanced examination of human resource management within retail organizations.

### RETL 662 - Customer Relationship Management for the Retail Industry (3 Credits)

The analysis of customer relationship management for retailers utilizing merchandising principles and industry software.

### RETL 700 - Advanced Omni-Channel Retailing (3 Credits)

Advanced examination of Omni-channel retailing.

### RETL 710 - Retailing E-Commerce (3 Credits)

Examination of e-commerce elements and retailer implications.

### RETL 725 - Customer Experience Optimization in the Retail Environment (3 Credits)

Study of customers' needs, activities, and trends to aid retail strategy formulation for enhancing customer experiences in retail environments.

### RETL 730 - Retail Loss Prevention (3 Credits)

The analysis of current retail loss prevention issues from the perspective of the business and customer. Meets the needs of individuals in retail organizations from entry level sales floor personnel to senior management.

### RETL 740 - Omni-Channel Workforce Management (3 Credits)

Advanced examination of workforce management for Omni-channel retailers.

### RETL 745 - International Retailing (3 Credits)

Broad overview of retail marketing theories, principles, and methods for international operations focusing on the cultural, economic, and regulatory environments.

### RETL 747 - Competitive Strategies in Retailing (3 Credits)

Fundamentals of strategic decision-making and performance measurement within the retail organization.

### RETL 748 - Advanced Retail Space Management (3 Credits)

Advanced examination of retail space allocation and management of merchandise via retail analytics and JDA software.

### RETL 749 - Advanced Category Management (3 Credits)

Advanced examination of category management strategies.

### RETL 750 - Advanced Sales Strategies for Retail (3 Credits)

Advanced strategic decision-making theories, principles, and techniques used in different buyer-seller situations by a retail organization.

### RETL 790 - Special Topics in Marketing Education (3 Credits)

Contemporary topics, trends, and issues in marketing education. Individual topics may be announced by titles.

### RETL 798 - Directed Study in Retailing (3 Credits)

Independent study for advanced students under faculty supervision.

### RETL 799 - Thesis Preparation (1-6 Credits)

CL: 2020.

## Retailing, M.R.

### Learning Outcomes

- Demonstrate a comprehensive knowledge of the retail industry using a multi-operational approach.
- Conduct a comprehensive market research plan within the retailing domain.
- Create and execute a retail business in the omnichannel environment by utilizing best entrepreneurial practices and emerging technologies.
- Analyze consumer and market environments to enhance customer experience and solve real-world business problems applying advanced research and data analytics.

- Analyze and develop applied solutions for retail merchandise categories.
- Apply the advanced knowledge and innovative skills to conduct an applied project or to develop a thesis.

## Degree Requirements (30 Hours)

The Master of Retailing curriculum consists of 30 semester hours of graduate credit in approved courses. Required courses help students attain technological and decision-making skills to help solve real-world problems encountered in today's fast-paced retail environment. Additionally, faculty members use case studies and group projects to build competency in oral, written and applied analysis of complex business situations. There are two options from which a student may choose to earn a Master of Retailing degree. For students planning to continue their education with a higher degree, such as a Ph.D., the Academic (thesis) option is recommended. For students who want a Master of Retailing degree for the content in the courses and/or to benefit them in their career, the Professional (non-thesis) option may be more suitable. If you are unsure as to which option to pursue, the Department of Retailing Graduate Director (hereafter Graduate Director) may be able to help you decide.

According to academic regulations of The Graduate School, at least half of the credit hours in a Program of Study, exclusive of thesis preparation (RETL 799), must be earned in courses numbered 700 and above.

### Academic (Thesis) Option

A graduate student electing the Academic (thesis) option must successfully pass a comprehensive exam upon completion of 21 credits of course work (of which at least 12 credits must be at the 700 level). In addition, the student must enroll in 3 hours of thesis preparation (RETL 799), an approved statistics course, an approved research methods course, and prepare and successfully defend a thesis.

### Courses for Academic (Thesis) Option (30 Hours)

Choose at least four 700-level courses:

Course	Title	Credits
Select 21 hours of the following: <sup>1</sup>		21
RETL 525	Legal Aspects of Entrepreneurship and E-Commerce	
RETL 551	Retail and Fashion Business Planning	
RETL 569	Advanced Retail Promotion and Social Media Analytics	
RETL 600	Fundamentals of Omni-Channel Retailing	
RETL 662	Customer Relationship Management for the Retail Industry	
RETL 710	Retailing E-Commerce	
RETL 725	Customer Experience Optimization in the Retail Environment	
RETL 747	Competitive Strategies in Retailing	
RETL 748	Advanced Retail Space Management	
RETL 749	Advanced Category Management	
STAT 600	Statistics for Applied Management	3
HRSM 788	Business Analytics in Hospitality, Retail, and Sport Management	3
RETL 799	Thesis Preparation	3
<b>Total Credit Hours</b>		<b>30</b>

<sup>1</sup> At least 12 credits must be at the 700 level.

### Professional (Non-Thesis) Option

A graduate student electing the Professional (non-thesis) option must take and successfully pass all courses listed below and pass a comprehensive exam.

### Courses for Non-Thesis Option (30 Hours)

Must take all 10 courses listed below:

Course	Title	Credits
RETL 525	Legal Aspects of Entrepreneurship and E-Commerce	3
RETL 551	Retail and Fashion Business Planning	3
RETL 569	Advanced Retail Promotion and Social Media Analytics	3
RETL 600	Fundamentals of Omni-Channel Retailing	3
RETL 662	Customer Relationship Management for the Retail Industry	3
RETL 710	Retailing E-Commerce	3
RETL 725	Customer Experience Optimization in the Retail Environment	3
RETL 748	Advanced Retail Space Management	3
RETL 749	Advanced Category Management	3
RETL 747	Competitive Strategies in Retailing	3
<b>Total Credit Hours</b>		<b>30</b>

## School of Hotel, Restaurant, and Tourism Management

Department Website (<http://www.hrs.m.sc.edu/hrtm/>)

Drew Martin, *Director*

### Degree Offered (33 Hours)

#### Master of International Hospitality and Tourism Management

The School of Hotel, Restaurant, and Tourism Management offers a program leading to the Master of International Hospitality and Tourism Management (M.I.H.T.M.). The M.I.H.T.M. is a professional program designed to prepare students for advanced careers in the hospitality and tourism field. Students best suited for the program are career-directed individuals with previous management experience who are seeking advancement to upper-level management positions or taking advantage of emerging opportunities in resort and club management, tourism marketing, hospitality education, hospitality tourism and research, and consulting. Selected courses in the International Hospitality and Tourism Management curriculum may be used for teacher recertification in the areas of marketing, hospitality and tourism, or home economics education. Students choose from one of two tracks, either the academic track or the professional track. The associate credit hours are a minimum of 33 hours.

### Degree Offered (60 Hours)

#### The Ph.D. program in Hospitality Management

The School of Hotel, Restaurant and Tourism Management offers a Doctor of Philosophy in Hospitality Management focused on lodging,

foodservice, and travel and tourism management. Graduates will be prepared to conduct both theoretical and applied research within the broad array of domains of hospitality and tourism management. In addition, graduates will be equipped with the skills to be effective teachers and mentors to students, as well as to be valuable resources for industry professionals. The program is based on a four year program of study consisting of 60 credit hours.

## Admission Requirements

Admission requirements conform with the general regulations of The Graduate School and regional and national accreditation standards. Applicants must submit to The Graduate School an application along with a \$50 nonrefundable application fee; official transcripts (mailed to the USC Graduate School) showing their complete academic record; two letters of recommendation; resume; statement of purpose; records of immunization (if born after December 31, 1956); and reports of examination scores on the GRE or GMAT.

The admission process involves evaluation of applicant characteristics in an attempt to determine intellectual ability and willingness to do the work required to complete the curriculum. Realizing that many admission decisions are somewhat subjective, anyone reviewing applications for admission to the Master of International Hospitality and Tourism Management program must consider the overall academic record (GPA; course of study; school[s] attended; degrees earned; GRE or GMAT scores and scores on any other standardized tests; performance in quantitative, hospitality/tourism, or business-related courses; work experience and level of responsibility; extracurricular and community activities; and letters of recommendation). These items may be supplemented by personal or telephone interviews at the discretion of the reviewer or when requested by the graduate director.

International applicants whose native language is not English are also required to submit a satisfactory score on the TOEFL or the IELTS Intl. Academic Course Type 2 exam. The minimum acceptable score on the TOEFL is 80 (internet-based). The minimum acceptable overall band score on the IELTS Intl. Academic Course Type 2 exam is 6.5.

Students wishing to enter the M.I.H.T.M. program should have completed business courses in the areas of personal computers, statistics, finance, marketing, and management principles and hospitality courses in food-service management, hotel operations, and tourism. Certain prerequisites may be waived for students who have demonstrated a high degree of competence in a related area.

## Programs

- Hospitality Management, Ph.D. (p. 333)
- International Hospitality and Tourism Management, M.I.H.T.M. (p. 334)

## Courses

### HRTM 518 - Hospitality Human Capital and Talent Management (3 Credits)

Effective methods for conducting, costing, and evaluating training and development procedures for hospitality supervisors and managers.

### HRTM 521 - Revenue Management in the Hospitality Industry (3 Credits)

Examination of revenue management in the hospitality industry with an emphasis on the theory and dynamics of revenue management, the implementation of capacity management, forecasting and discounting.  
**Prerequisites:** HRTM 450.

**Corequisite:** HTRM 421.

### HRTM 537 - Multi-Cultural Dimensions of the Hospitality Industry (3 Credits)

Multicultural, multiracial, and multiethnic factors within the hospitality and tourism industry.  
**Prerequisites:** MGMT 371 or RETL 344.

### HRTM 550 - Theme Park and Attractions Management (3 Credits)

This course will give students an overview of the theme park and attractions industry. We will explore each of the areas of this industry including: history, venues, resources, ride operations, merchandising, food service and design.

### HRTM 557 - Security Management of Hotels and Restaurants (3 Credits)

Individualized security programs, procedures, legal issues, and review of local, state, and federal laws that apply to the lodging and restaurant industry.

**Prerequisites:** HRTM 357 or equivalent.

### HRTM 560 - Advanced Lodging Management (3 Credits)

Advanced principles of the management of hotels and resorts.

**Prerequisites:** HRTM 260.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

**Experiential Learning:** Experiential Learning Opportunity

### HRTM 564 - Advanced Meeting Management (3 Credits)

Analysis of current issues and problems in the meetings industry with emphasis on planning, organizing, managing, and enhancing meetings.

**Prerequisites:** HRTM 364.

### HRTM 565 - International Lodging Management (3 Credits)

Analysis of the structure of international lodging companies, challenges of marketing U.S. lodging companies abroad, and cultural differences in international management.

**Prerequisites:** HRTM 260.

### HRTM 567 - Timeshare and Vacation Ownership Management (3 Credits)

Management of the timeshare and vacation ownership industry.

### HRTM 570 - Managing Food Service Operations (3 Credits)

An advanced study of the food-service industry and its operations both internally and externally to the physical plant.

**Prerequisites:** HRTM 270.

### HRTM 575 - Advanced Topics in Wine (3 Credits)

A viticultural and enological study of wine and wine regions around the world; from the vineyard to the table including grape varieties, wine regions and wine service. Students must be 21 years old.

**Prerequisites:** HRTM 475.

**HRTM 576 - Franchising within the Hospitality Industry (3 Credits)**

This course will focus on the study of multi-unit and franchise operations within the hospitality and tourism industry.

**Prerequisites:** BADM 371.

**HRTM 580 - Adventure Travel Management (3 Credits)**

Analysis of the adventure travel industry throughout the world, with emphasis on the management, marketing, and operation of an adventure travel business.

**HRTM 584 - Tourism Information Technology Issues (3 Credits)**

Information technologies such as e-commerce, e-marketing, and e-research are examined, critiqued, and applied within a tourism context.

**Prerequisites:** ITEC 264 or equivalent.

**HRTM 585 - Advanced Club Management (3 Credits)**

Advanced topics in hospitality management for the club industry.

**Prerequisites:** HRTM 285.

**HRTM 590 - Special Topics in HRTM (3 Credits)**

Advanced concepts, issues, and trends in the hospitality and tourism industry. May be taken twice for degree credit.

**HRTM 591 - Golf Tourism (3 Credits)**

Effective practices used in the planning, development, and promotion of golf tourism. Experiential learning component for evaluating selected issues, problem solving, and participating in the operational performance of a large golf tournament. Employment with a pre-approved golf tournament or permission of instructor.

**HRTM 592 - Golf Tourism Consumer Services (1 Credit)**

Examines superior customer service in high-quality business operations for a mega golf-tourism event; includes an experiential learning/fieldwork component.

**Prerequisites:** HRTM 591.

**HRTM 593 - Golf Tourism Supervisory Skills (1 Credit)**

Examines basic supervisory skills in high-quality business operations for a mega golf-tourism event; includes an experiential learning/fieldwork component.

**Prerequisites:** HRTM 591, HRTM 592.

**HRTM 594 - Golf Tourism Leadership Skills (1 Credit)**

Examines management and leadership skills in high-quality business operations for a mega golf-tourism event; includes an experiential learning/fieldwork component.

**Prerequisites:** HRTM 591, HRTM 592, HRTM 593.

**HRTM 597 - Global Travel and Tourism (3 Credits)**

Study of the economic, social, cultural, political, and environmental considerations of international tourism management and development.

**Prerequisites:** HRTM 280.

**HRTM 720 - Hospitality Finance Methods (3 Credits)**

The study of financial management related to the hospitality industry.

**HRTM 730 - Strategic Leadership in the Hospitality Industry (3 Credits)**

Strategic decision-making, planning, and leadership relative to the hospitality industry.

**HRTM 740 - Services Management and Customer Experience in the Hospitality Industry (3 Credits)**

Analysis, planning, and control of the service function in hospitality organizations with emphasis on management problems.

**HRTM 750 - Hospitality Marketing and Social Media (3 Credits)**

Strategic marketing process for hospitality organizations.

**Prerequisites:** MKTG 350.

**HRTM 755 - Properties Management (3 Credits)**

Feasibility studies, functional planning and design, equipment and utilities management.

**HRTM 768 - Contemporary Problems in the Lodging Industry (3 Credits)**

Consideration and analysis of relevant contemporary problems and issues presently facing managers in the lodging industry.

**HRTM 776 - Current Issues in Foodservice Management (3 Credits)**

Critical issues impacting the management of food-service organizations.

**HRTM 780 - Seminar in Travel and Tourism (3 Credits)**

Issues in travel and tourism.

**Prerequisites:** HRTM 750.

**HRTM 781 - Seminar on the Olympic Games (3 Credits)**

Examination of the Olympic Games, a mega sport and tourism event, and its impact on the sport, entertainment, hospitality and tourism sectors.

**Cross-listed course:** SPTE 781

**HRTM 785 - Resort Management (3 Credits)**

Management of resort complexes, including master plan development, ecological concerns, and recreational activities development.

**HRTM 795 - Tourism and Hospitality Field Project (3 Credits)**

Work experience and participation in management decision-making in a hospitality and tourism business environment. Positions assigned on an individual basis with emphasis on oral and written communication skills, planning, and problem solving.

**HRTM 798 - Directed Study in HRTM (3 Credits)**

Independent study for advanced students under faculty supervision. May be taken twice for degree credit.

**HRTM 799 - Thesis Preparation (1-6 Credits)**

Thesis preparation in international hospitality and tourism management.

**Prerequisites:** HRSM 788.

**HRTM 850 - Scientific Foundations of Hospitality Management (3 Credits)**

Examination of serious inquiry, philosophical foundations and schools of thought, and the contributions from social and behavioral sciences that heavily influence hospitality management.

**HRTM 888 - Advanced Research Seminar in Hospitality Management (3 Credits)**

Examination of hospitality research issues and research literature, including appropriate methodologies and designs.

**Prerequisites:** HRSM 788 or equivalent, HRTM 850.

**HRTM 890 - Pedagogy in Hospitality and Tourism Management (3 Credits)**

An introduction to college level teaching; major components include related theory, current research, instructional design, and the application of effective strategies in the teaching-learning process. Emphasis is also aligned with Preparing Future Faculty (PFF) for instruction and planning for future implementation in HRSM curriculum.

**HRTM 895 - Ph.D. Graduate Seminar in Hospitality Management (1 Credit)**

Seminar of current topics related to research, teaching and grant writing in hospitality management. As part of the PhD program requirement, the course must be taken twice during the tenure of a student at USC Columbia.

**Prerequisites:** HRTM 888.

**HRTM 899 - Dissertation (1-13 Credits)**

## Hospitality Management, Ph.D.

The Ph.D. program in Hospitality Management is designed to meet the demand by industry and educational institutions for high quality academicians with a hospitality and tourism management background. Students will be given the opportunity to generate significant industry-specific knowledge through exposure to and participation in the highest levels of academic research, and subsequently, as professors and managers, to disseminate such knowledge to all stakeholders and to the public.

The Program is based on a three to four year period of residential study following the completion of a Master's degree with an undergraduate or graduate degree in hospitality and tourism management or related fields. To meet its objectives, the Program will consist of a minimum of 60 credit hours in five components:

1. Hospitality Management Core,
2. Research Core,
3. Concentration in Hotel, Restaurant and Tourism Management (HRTM),
4. Cognates, and
5. Dissertation

The associated credit hours are a minimum of 60 hours.

This program of study provides students with the opportunity to generate significant industry-specific knowledge through exposure to and participation in the highest levels of academic research. The Ph.D. program requires 60 credit hours beyond the master's degree, including a minimum of 15 hours devoted to original dissertation research. To complete the Ph.D. program, a student must successfully complete a comprehensive exam, propose and complete a dissertation study, and successfully pass a final examination on the dissertation administered by the students advisory committee.

The School of Hospitality and Tourism Management is home to world renown professors who have significant publication records in the most prestigious journals in hospitality and tourism. The college hosts several research centers and institutes, and collectively provides excellent opportunities for students to get involved in research projects with organizations like:

- South Carolina's only Center of Economic Excellence in Tourism and Economic Development (CoEE)
- International Institute for Foodservice Research and Education
- International Tourism and Research Institute
- Alfred P. Sloan Foundation Travel & Tourism Industry Center
- Culinary and Wine Institute
- Center for Event Research and Education

## Learning Outcomes

- Students will develop a general understanding of common research designs and methodological tools (quantitative and qualitative) used in the field of tourism and hospitality research, and become familiar with a wide variety of research publication outlets and quality standards.
- Students will be capable of critically evaluating published articles and existing research products in tourism and hospitality.
- Students will be familiar with a wide variety of ethical issues in research, collaboration, and institutional review board standards and practices.

## Admission Requirements

Admission requirements conform with the general regulations of The Graduate School and regional and national accreditation standards. Admission to the Ph.D. program is voted on individually by the School of HRTM's graduate faculty after consideration of a number of factors. These factors include the applicant's academic record (especially work done at a Master's level), promise of ability to adequately pursue advanced study and research, performance on the Graduate Record Examination (GRE) or Graduate Management Admissions Test (GMAT), sufficient preparation to enter graduate study, professional experience, willingness of HRTM faculty to work with the student, recommendations, the applicant's personal statement outlining career objectives, research interests, and career aspirations and expectations, which all may be verified through a personal and/or phone interview. Admitted students must have a HRTM faculty member who is willing to serve as their dissertation committee chair. Therefore, some qualified students may not be admitted if a faculty member does not agree to be chair.

Applicants must submit to The Graduate School an application along with a \$50 nonrefundable application fee; official transcripts (mailed to the USC Graduate School) showing their complete academic record; two letters of recommendation; personal statement of purpose; resume; records of immunization (if born after December 31, 1956); and reports and examination scores on the GRE or GMAT.

International applicants whose native language is not English are also required to submit a satisfactory score on the TOEFL or the IELTS Intl. Academic Course Type 2 exam. The minimum acceptable overall score on the IELTS Intl. Academic Course Type 2 exam is 6.5.

## Degree Requirements (60 Post-Masters Hours)

### Hospitality Core (6 Hours)

Course	Title	Credits
HRTM 850	Scientific Foundations of Hospitality Management	3
HRTM 888	Advanced Research Seminar in Hospitality Management	3

**Total Credit Hours** 6

### Research Core (15 Hours)

These core courses expose students to the critical methodological and topical foundation that is crucial for anyone engaging in top-level hospitality research. The Program will include strong elements of statistics and research design.

Course	Title	Credits
Select three courses in Statistics (two courses have to be in multivariate statistics)		9
Select two Research Methods courses (one qualitative and one quantitative research)		6
<b>Total Credit Hours</b>		<b>15</b>

### Concentration in Hotel, Restaurant, and Tourism Management (HRTM) (12 Hours)

Students will also be required to take 12 credit hours in their area of interest based on the list of graduate courses offered in the School of Hotel Restaurant and Tourism Management.

### Cognates (12 Hours)

Each student will take 12 hours of graduate-level cognates offered by other programs within the College or other academic units within the University of South Carolina. This is intended to encourage interdisciplinary synergy between College and University academic units and will enhance the concentration area of the program.

### Dissertation (15 Hours minimum)

A minimum of fifteen credit hours will constitute the dissertation, which provides students with the opportunity to identify and rigorously analyze a relevant issue within their specialized field, with an aim toward generation of original knowledge.

Course	Title	Credits
HRTM 899	Dissertation	1-13

## International Hospitality and Tourism Management, M.I.H.T.M.

The M.I.H.T.M. program provides a comprehensive study of the many facets of international hospitality and tourism management. Students receive thorough training in the major functional areas of multinational organizations, with an emphasis on professionalism and sophistication in decision making. Flexibility both in curriculum and in degree requirements allows students to design a program of study tailored to their career goals.

### Learning Outcomes

- Students will identify and diagnose business problems accurately and effectively, including management practices, accounting and financial management, operations, marketing, and strategic management.
- Students will utilize theory learned in other courses to solve real-world business problems while applying and developing organizational leadership, communication, conflict resolution, and interpersonal skills.
- Students will develop marketing strategies that utilizes analysis of information about customers, competitors, and the environment and are consistent with overall corporate mission and goals.
- Students will understand the fundamental concepts and process of scientific research; examine viable research problems through survey research design, data collection, basic statistical techniques, and report write-up in a professional manner.
- Students will utilize investment and financial analysis tools to accurately assess a firm's financial performance.

### Degree Requirements (33 Hours)

The M.I.H.T.M. curriculum consists of 33 semester hours of graduate credit in approved courses. Students may choose either a professional (nonthesis) or academic (thesis) option.

### Professional (Nonthesis) Option (33 Hours)

Students choosing to enroll in the professional option must complete the 24 credit hours of required courses listed below and at least 12 credit hours of elective course work, pass a comprehensive written examination upon completion of all course work, and complete a work experience requirement that includes participation in management decision-making in a hospitality or tourism business environment.

### Required Courses for the Professional Option (24 Hours)

Course	Title	Credits
HRTM 720	Hospitality Finance Methods	3
HRTM 730	Strategic Leadership in the Hospitality Industry	3
HRTM 740	Services Management and Customer Experience in the Hospitality Industry	3
HRTM 750	Hospitality Marketing and Social Media	3
HRSM 788	Business Analytics in Hospitality, Retail, and Sport Management	3
HRSM 795	Field Project in Hospitality, Retail, and Sport Management	6
HRTM 518	Hospitality Human Capital and Talent Management	3
<b>Total Credit Hours</b>		<b>24</b>

### Academic (Thesis) Option (33 Hours)

Students choosing to enroll in the thesis option must complete 27 credit hours of required courses listed below-including 6 credit hours of thesis preparation (HRTM 799) and at least 6 hours of elective course work and prepare and successfully defend a thesis.

### Required Courses for the Academic Option (27 Hours)

Course	Title	Credits
HRTM 518	Hospitality Human Capital and Talent Management	3
HRTM 730	Strategic Leadership in the Hospitality Industry	3
HRTM 740	Services Management and Customer Experience in the Hospitality Industry	3
HRTM 750	Hospitality Marketing and Social Media	3
HRSM 788	Business Analytics in Hospitality, Retail, and Sport Management	3
HRSM 700	Quantitative Methods in HRSM	3
HRTM 799	Thesis Preparation	6
Select one of the following:		3
STAT 515	Statistical Methods I	
STAT 600	Statistics for Applied Management	
STAT 700	Applied Statistics I	
<b>Total Credit Hours</b>		<b>27</b>

## Electives

Course	Title	Credits
HRTM 521	Revenue Management in the Hospitality Industry	3
HRTM 537	Multi-Cultural Dimensions of the Hospitality Industry	3
HRTM 557	Security Management of Hotels and Restaurants	3
HRTM 560	Advanced Lodging Management	3
HRTM 564	Advanced Meeting Management	3
HRTM 565	International Lodging Management	3
HRTM 567	Timeshare and Vacation Ownership Management	3
HRTM 570	Managing Food Service Operations	3
HRTM 575	Advanced Topics in Wine	3
HRTM 576	Franchising within the Hospitality Industry	3
HRTM 580	Adventure Travel Management	3
HRTM 584	Tourism Information Technology Issues	3
HRTM 585	Advanced Club Management	3
HRTM 591	Golf Tourism	3
HRTM 592	Golf Tourism Consumer Services	1
HRTM 593	Golf Tourism Supervisory Skills	1
HRTM 594	Golf Tourism Leadership Skills	1
HRTM 597	Global Travel and Tourism	3
HRTM 720	Hospitality Finance Methods	3
HRTM 755	Properties Management	3
HRTM 768	Contemporary Problems in the Lodging Industry	3
HRTM 776	Current Issues in Foodservice Management	3
HRTM 780	Seminar in Travel and Tourism	3
HRTM 781	Seminar on the Olympic Games	3
HRTM 785	Resort Management	3
HRTM 798	Directed Study in HRTM	3

## Sport and Entertainment Management

Department Website ([http://sc.edu/study/colleges\\_schools/hrsm/study/areasofstudy/spte/](http://sc.edu/study/colleges_schools/hrsm/study/areasofstudy/spte/))

Matthew T. Brown, *Chair*

### Degrees Offered

#### Master of Sport and Entertainment Management

The Department of Sport and Entertainment Management offers a Master of Sport and Entertainment Management focused on sport, entertainment, and venue management. Graduates enter the sport and entertainment industry with practical knowledge, professional preparation, and a strong alumni network.

#### Doctor of Philosophy in Sport and Entertainment Management

The Department of Sport and Entertainment Management offers a Doctor of Philosophy in Sport and Entertainment management focused on sport, entertainment, and venue management. Graduates will be prepared to conduct both theoretical and applied research within the broadening domain of sport and entertainment. In addition, graduates

will be equipped with the skills to be effective teachers and mentors to students, as well as to be valuable resources for industry professionals.

## Admission Requirements

### Master of Sport and Entertainment Management

Admission requirements conform to the general regulations of The Graduate School and regional and national accreditation standards. The Graduate School uses an online application process and there is a \$50 fee to apply. Applicants must also submit a current resume, statement of career objectives, at least two letters of recommendation (with at least one being from a current or former professor who can comment on the applicant's ability to succeed in graduate studies), one official transcript from each college or university attended, and official Graduate Management Admission Test (GMAT) or Graduate Record Exam (GRE) scores. See the Department of Sport and Entertainment Management's website, <http://www.sportandentertainment.org>, for specific instructions on how to apply and for application deadlines.

Undergraduate preparation, grade point average, GMAT or GRE score, applicant's statement of career objectives, letters of recommendation, work experience, extracurricular activities, and TOEFL scores for international students will be used in admissions decisions. International applicants whose native language is not English are required to submit a satisfactory score on the TOEFL or the IELTS Intl. Academic Course Type 2 exam. The minimum acceptable score on the TOEFL is 80 (internet-based) while the minimum acceptable overall band score on the IELTS Intl. Academic Course Type 2 exam is 6.5. Successful applicants generally score at least 300 (verbal and quantitative combined) on the GRE Revised General Test or an equivalent score (verbal and quantitative combined) on the GMAT. For those who took the GRE General Test prior to August 1, 2011, successful applicants generally score at least 1000 (verbal and quantitative combined). These scores, however, do not guarantee admission. Successful applicants also generally earn at least a 3.00 undergraduate grade point average on a 4.00 scale. Consideration will be given to the student's entire application, when making admissions decisions.

Students who transfer into the degree program will be allowed up to 9 semester hours of degree-applicable transfer credit. The graduate director must approve the credits.

For students without undergraduate degrees in sport management, entertainment management, business administration or a related discipline, prerequisite courses in the areas of sport and entertainment finance, sport and entertainment marketing, and sport and entertainment accounting must be taken. These courses are offered during the Summer II term at the University of South Carolina and must be successfully completed prior to a student's beginning the program in the Fall.

### Doctor of Philosophy in Sport and Entertainment Management

Admission requirements conform to the general regulations of The Graduate School and regional and national accreditation standards. Admission to the Ph.D. program is voted on individually by the department's graduate faculty after considering several factors. These factors include the applicant's academic record (especially work done at a Master's level), promise of the ability to pursue adequately advanced study and research, performance of the Graduate Record Exam (GRE) or Graduate Management Admissions Test (GMAT), sufficient preparation to enter graduate study, professional experience, willingness of departmental faculty to work with the student, letters of recommendation,

the applicant's statement of career objectives, and a personal and/or phone interview. Students must have a departmental faculty member who is willing to serve as their dissertation committee chair prior to admission. Therefore, some qualified students may not be admitted if a faculty member does not agree to be chair.

Graduate students are admitted through a cooperative effort between The Graduate School of the University of South Carolina and the Department of Sport and Entertainment Management. The Graduate School uses an online application process and there is a \$50 fee to apply.

The following supporting material is required with the application:

1. A current resume.
2. Statement of Career Objectives. This is a statement that specifically addresses how the department's PhD program will help the applicant achieve these objectives.
3. At least two letters of recommendation. At least one of these letters must be from a current or former professor who can comment on the applicant's ability to succeed in graduate studies.
4. One official transcript from each college or university attended (undergraduate and graduate). Successful applicants generally have a master's GPA of 3.25 or above (on a 4.0 scale). Such a GPA, however, does not guarantee admission.
5. Official Graduate Management Admission Test (GMAT) or Graduate Record Exam (GRE) scores. Successful applicants generally score at least 300 (verbal and quantitative combined) on the GRE Revised General Test or an equivalent score (verbal and quantitative combined) on the GMAT. For those who took the GRE General Test prior to August 1, 2011, successful applicants generally score at least 1000 (verbal and quantitative combined). These scores, however, do not guarantee admission. GMAT/GRE scores more than five years old will not be accepted under any circumstances.
6. Applicants whose native language is not English must submit TOEFL or IELTS scores. International applicants who have received a degree from a college or university in the United States are not required to submit a TOEFL or IELTS. The minimum acceptable score on the TOEFL is 80 (internet-based) while the minimum acceptable overall band score on the IELTS Inti. Academic Course Type 2 exam is 6.5.

## Programs

- Sport and Entertainment Management, M.S.E.M. (p. 338)
- Sport and Entertainment Management, Ph.D. (p. 338)

## Courses

### **HRSM 700 - Quantitative Methods in HRSM (3 Credits)**

This course introduces the basic knowledge of quantitative concepts, principles, and methods necessary for scientific investigation of research problems related to hospitality, retail, and sport management.

**Corequisite:** HRSM 788.

### **HRSM 787 - Global Seminar in Hospitality, Retail, Sport & Technology Management (3 Credits)**

This is an interdisciplinary learning experience where students apply major specific constructs and current trends in hospitality, retail, sport and technology management in a study abroad context. Students will visit destinations and venues where they will interact with on site management. This course is for HRSM graduate students only and requires permission of the departmental graduate director. This course may be repeated twice for credit.

### **HRSM 788 - Business Analytics in Hospitality, Retail, and Sport Management (3 Credits)**

The course is structured to help students apply concepts of scientific inquiry in practical business problems in the field of hospitality/tourism, retail, and sport management. This course will provide the student with an understanding of the process and the tools to support business problem identification, research design, information/data collection, data analytics, result visualization, and managerial decision-making of business cases.

**Prerequisites:** STAT 515.

### **HRSM 795 - Field Project in Hospitality, Retail, and Sport Management (6 Credits)**

Work experience and participation in management decision-making in a hospitality/tourism, retail, or sport/entertainment business environment. Positions assigned on an individual basis with emphasis on oral and written communication skills, planning, and problem solving.

### **HRSM 888 - Research Design in Hospitality, Retail, and Sport Management (3 Credits)**

The principles of research design, focusing on the application of these principles as they apply to sport and entertainment, hospitality, and/or tourism management.

### **SPTE 501 - Trends and Issues in Sport and Entertainment Management (3 Credits)**

Trends and Issues in Sport and Entertainment Management.

### **SPTE 545 - Managing Part-Time Employees and Volunteers (3 Credits)**

Recruiting, hiring, training, and retaining part-time employees and volunteers in sport and entertainment.

### **SPTE 550 - The Business of Esports (3 Credits)**

This course is designed to provide students with an overview of the business of esports. It will focus on the history of video games from creation to the present and will also cover the various business elements of the modern, competitive esports environment.

### **SPTE 560 - Performing Arts Management and Leadership (3 Credits)**

The study of performing arts management as it relates to nonprofits and organizational structure.

**Prerequisites:** C or better in SPTE 202 and SPTE 380.

### **SPTE 565 - Business of Broadway (3 Credits)**

The study of the management of Broadway productions from script to play, including the creative process, business ventures, production houses, and investor relations.

**Prerequisites:** SPTE 202 and SPTE 380; C or higher for SPTE majors.

### **SPTE 570 - Special Topics in Global Sport (3 Credits)**

This course examines a variety of global sport and entertainment management issues. The emphasis will be on an understanding of the concepts related to the sport and entertainment management in an international setting. Content varies by title. May be repeated once.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

### **SPTE 580 - Business Principles in Sport Management. (3 Credits)**

Business principles in the management of public and private sector sport programs.

### **SPTE 585 - Sports Economics (3 Credits)**

This course focuses on issues relevant to sport, entertainment, and related industries. The goal of the class will be for students to understand both basic and complex concepts within economics in a sport and entertainment context, in order to grasp the importance of economic decision-making.



**SPT 590 - Special Topics in Live Entertainment and Sport (3 Credits)**

Investigation of Special topics pertinent to the sport and entertainment management industry. Content varies by title. May be repeated twice.

**SPT 635 - Sport and Entertainment Event Development (3 Credits)**

Business concepts needed to develop sport and entertainment special events.

**SPT 640 - Venue Management: Principles and Practices (3 Credits)**

Managing public assembly facilities and venues.

**Prerequisites:** SPT 203 or equivalent.

**SPT 650 - Integrated Marketing Communication in Sport and Entertainment (3 Credits)**

Use of integrated marketing communication concepts, theories, and strategies in sport and entertainment.

**Prerequisites:** MKTG 350.

**SPT 655 - Social Media in Live Entertainment and Sport (3 Credits)**

In-depth investigation of social networks, digital platforms, and online marketing for the live entertainment and sport industries.

**SPT 701 - Management in the Sport and Entertainment Industry (3 Credits)**

Management principles in the sport and entertainment industry.

**SPT 720 - Advanced Live Entertainment Management (3 Credits)**

The advanced study of underlying themes in entertainment management and its application to music, family shows, and other live entertainment business venues.

**SPT 730 - Advanced Sport and the Law (3 Credits)**

Advanced knowledge of the legal issues that frequently arise in the context of sport will be covered. The focus of the course is law as it applies to sport as well as how the law affects participants, spectators, sport organizations, and facility managers, among others.

**SPT 736 - Sport and Entertainment Event Entrepreneurship (3 Credits)**

Process of new venture creation with respect to sport and entertainment events.

**SPT 746 - Risk and Security Management in Public Assembly Facilities (3 Credits)**

The risks and security issues associated with managing public assembly facilities.

**SPT 750 - Strategic Planning and Policy Development in Sport and Entertainment Management (3 Credits)**

Policy development and implementation in the sport and entertainment industry.

**SPT 760 - Principles of Sport and Entertainment Marketing (3 Credits)**

This course is designed to provide a foundation in the principles of sport and entertainment marketing.

**Prerequisites:** Undergraduate marketing class or equivalent.

**SPT 765 - Advances Sales in Sport and Entertainment Management (3 Credits)**

Comparative approaches of revenue generation and sales processes/strategies used by sport and entertainment organizations.

**Prerequisites:** Completion of an introductory marketing course and/or relevant industry marketing experience.

**SPT 770 - Public Assembly Facility Management Programming and Sales (3 Credits)**

Concepts, knowledge, and sales skills involved in programming public assembly facilities.

**SPT 775 - Event Programming and Production (3 Credits)**

This course will examine the critical functions of booking and scheduling a public assembly facility and the production of events in such a venue.

**Prerequisites:** SPT 640.

**SPT 780 - Public Assembly Facility Operations and Procedures (3 Credits)**

Concepts, knowledge, and operational procedures associated with managing public assembly facilities.

**SPT 781 - Seminar on the Olympic Games (3 Credits)**

Examination of the Olympic Games, a mega sport and tourism event and its impact on the sport, entertainment, hospitality and tourism sectors.

**Cross-listed course:** HRTM 781

**SPT 790 - Sport and Entertainment Finance (3 Credits)**

This course examines financial information necessary to perform the usual duties and responsibilities associated with sport facilities, programs and organizations.

**SPT 798 - Directed Study in Sport and Entertainment Management (3 Credits)**

Independent study for advanced students under faculty supervision. May be taken twice for degree credit.

**SPT 799 - Thesis Preparation (1-6 Credits)**

Thesis preparation in sport and entertainment management.

**SPT 801 - Seminar in SPT Management (3 Credits)**

Acquaints sport management PhD students with advanced principles and applications of the sport and entertainment management discipline. This course will expose the doctoral student to research examining organization, leadership, and strategic management in the sport and entertainment industry and appropriate sub-industries.

**SPT 810 - Seminar in SPT Education (3 Credits)**

Provides Sport and Entertainment Management graduate students with insights that foster professional growth and development as a college instructor. This course examines the scholarship of teaching SPT and developing optimal classroom environments and identification and guided reflective analysis of critical issues in SPT education.

**SPT 830 - Seminar SPT Law & Risk Management (3 Credits)**

Acquaints students with advanced theory and application of law and risk management in sport and entertainment management through the review of scholarship about professional and amateur sport, laws impacting the entertainment industry, and risk management issues within sport and entertainment facilities.

**SPT 860 - Seminar in SPT Marketing (3 Credits)**

Acquaints sport management PhD students with advanced principles and application of the sport and entertainment marketing discipline. The course will take an in-depth look at how amateur/professional sport, and emerging sport business enterprises and trends affect the practice of sport and entertainment marketing. This course is designed for students to study sport and entertainment marketing theories and practical applications and principles by specifically learning about marketing information systems, pricing strategies, media relations, promotional methods and endorsements.

**SPT 880 - Sport and Society (3 Credits)**

When sport is discussed, how we talk about them, and the possible viewpoints are all given beforehand by deeply entrenched social institutions. The objective of this course is to identify how these institutions are constructed, and how sport is an activity that embodies social relations.

**SPT 890 - Seminar in SPT Finance (3 Credits)**

This course covers advanced principles and applications of sport and entertainment finance. The course takes an in-depth look at the theory, concepts, and frameworks of sport and entertainment finance research. The focus will be on the optimum financial policies and decisions of nonfinancial firms in the sport and entertainment industry.

**SPT 899 - Dissertation Preparation (1-12 Credits)**

Assists students through the proposal and dissertation writing process.

## Sport and Entertainment Management, M.S.E.M.

### Learning Outcomes

- Students should be able to apply learned concepts and theory to demonstrate an understanding of the nature of the sport and entertainment industry.
- Students will understand and have an appreciation for how research is used by and beneficial for sport and entertainment organizations and/or academics.
- Students will demonstrate an ability to develop and explain workable solutions to various industry problems.

## Degree Requirements (36 Hours)

### Thesis Option

Students electing the thesis option must complete 27 credit hours of required courses, complete at least 9 credit hours of elective course work from which a maximum of 9 credit hours may be taken outside of the Department of Sport and Entertainment Management, and pass a comprehensive examination upon completion of the course work and thesis.

#### Courses for Thesis Option

Course	Title	Credits
SPT 640	Venue Management: Principles and Practices	3
SPT 701	Management in the Sport and Entertainment Industry	3
SPT 730	Advanced Sport and the Law	3
SPT 760	Principles of Sport and Entertainment Marketing	3
SPT 790	Sport and Entertainment Finance	3
SPT 799	Thesis Preparation	1-6
STAT 515	Statistical Methods I	3
HRSM 788	Business Analytics in Hospitality, Retail, and Sport Management	3
Select nine elective hours		9
<b>Total Credit Hours</b>		<b>31-36</b>

### Non-Thesis Option

Students electing the non-thesis option must complete 21 credit hours of required courses, complete at least 15 credit hours of elective course work from which a maximum of 9 credit hours may be taken outside of the Department of Sport and Entertainment Management, and pass a comprehensive examination upon completion of all course work. Students selecting the non-thesis option may (but are not required to) enroll in HRSM 795 for 6 elective credit hours.

#### Courses for Non-Thesis Option

Course	Title	Credits
SPT 640	Venue Management: Principles and Practices	3
SPT 701	Management in the Sport and Entertainment Industry	3
SPT 730	Advanced Sport and the Law	3
SPT 760	Principles of Sport and Entertainment Marketing	3
SPT 790	Sport and Entertainment Finance	3
STAT 515	Statistical Methods I	3
HRSM 788	Business Analytics in Hospitality, Retail, and Sport Management	3
Select 15 elective hours		15
<b>Total Credit Hours</b>		<b>36</b>

## Sport and Entertainment Management, Ph.D.

The Ph.D. program in Sport and Entertainment Management is designed to meet the demand by the industry and educational institutions for high quality academicians with a sport and entertainment management background. Students will be given the opportunity to generate industry-specific knowledge through exposure to and participation in academic research with a discipline-specific application. Subsequently, as professors, they will be equipped to disseminate such knowledge to the public and industry stakeholders.

### Learning Outcomes

- Upon completion of all core coursework, students will be familiar with key research in the areas of sport and entertainment management, marketing, finance and law.
- Students will have the necessarily skills to lead and conduct their own research projects, and be able to cooperate with, or support other scholars in their scholarly endeavors.
- Students will acquire skills needed to teach in a college setting.

## Degree Requirements (60 Post-Masters Hours minimum)

The Program is based on a three-year period of residential study beyond completion of a Master's degree in sport and entertainment management or a related field. It will consist of a minimum of 60 credit hours beyond the master's degree in the following four areas:

1. Core Seminars,
2. Statistics/Research Core,
3. Cognate(s), and
4. Dissertation

### Prerequisites

Students who have not had prior exposure to the sport and entertainment industry through a related undergraduate or graduate degree are required to enroll in a 15-hour Prerequisite Core. Courses in this core in the following:

Course	Title	Credits
SPT 640	Venue Management: Principles and Practices	3
SPT 701	Management in the Sport and Entertainment Industry	3

SPTE 746	Risk and Security Management in Public Assembly Facilities	3
SPTE 760	Principles of Sport and Entertainment Marketing	3
SPTE 790	Sport and Entertainment Finance	3
<b>Total Credit Hours</b>		<b>15</b>

Note: These courses may be waived for those with prior academic exposure or significant industry experiences.

## Program of Study

The Program will expose students to advanced and current research being conducted in the sport and entertainment industry. A substantial portion of the coursework will consist of courses that focus on research methodology and statistical analysis techniques. These courses are designed to develop students' critical analysis skills while serving as the basis for developing a sustainable research agenda.

Because the department's unique focus on both sport and entertainment management (as opposed to only sport management), students will develop a distinct and more holistic understanding of both sport management and entertainment management and be better positioned in the academic job market in that the breadth of their training should make them qualified for either sport-specific or entertainment-specific positions within those programs.

### Core Seminars (15 Hours)

Course	Title	Credits
SPTE 810	Seminar in SPTE Education	3
Remaining 12 credit hours must be selected from 800-level SPTE seminars		12
<b>Total Credit Hours</b>		<b>15</b>

### Statistics/Research Core (15 Hours)

Course	Title	Credits
Selected courses must be in the topic areas of research methods or statistics		15
<b>Total Credit Hours</b>		<b>15</b>

### Cognate (18 Hours)

Course	Title	Credits
The students should specialize in their chosen area of research interest. At least 6 hours of coursework must be taken outside the SPTE Department.		18
<b>Total Credit Hours</b>		<b>18</b>

### Dissertation (12 Hours)

A minimum of 12 credit hours will constitute the dissertation, which provides students with the opportunity to identify and rigorously analyze a relevant issue within their specialized field, with an aim toward generation of original knowledge.

Course	Title	Credits
SPTE 899	Dissertation Preparation	12
<b>Total Credit Hours</b>		<b>12</b>

# COLLEGE OF INFORMATION AND COMMUNICATIONS

Department Website ([http://www.sc.edu/study/colleges\\_schools/cic/](http://www.sc.edu/study/colleges_schools/cic/))

Tom Reichert, Ph.D., *Dean*  
 Brooke McKeever, Ph.D., *Associate Dean of Research*  
 Kim M. Thompson, Ph.D., *Associate Dean for Academic Affairs*  
 David Lankes, Ph.D., *Associate Dean and Director, School of Library and Information Science*  
 Andrea Hickerson, Ph.D., *Associate Dean and Director, School of Journalism and Mass Communications*  
 Brytnee Leigh, *Assistant Dean for Administration and Finance*  
 Rushondra James, MSW, *Assistant Dean for Student Services*  
 Rachel Rolli, *Assistant to the Dean*

The challenge of 21st-century communications is to combine the information gathering function—research and data bases—with the disciplines of disseminating information—journalism, advertising, and public relations. The College of Information and Communications is the product of such a merger designed to convey what we know and how we know it.

The college's School of Journalism and Mass Communications is professionally oriented and grounded strongly in the liberal arts. It offers instruction at the undergraduate and graduate levels and an extensive program in continuing education. Course work is offered in electronic and print journalism, advertising, public relations, and integrated communications to train students in both the processes and effects of mass communication.

The School of Library and Information Science offers a bachelor's degree in information science and graduate-level programs that support the development of library and information services as an essential element of cultural enrichment. It provides a professional education for students entering into libraries and information centers in colleges, schools, communities, industries, and businesses.

Together, the schools will also develop a core research base for examining the practices of communications and the teaching of these disciplines.

The 2002 merger of two established colleges at the University of South Carolina was designed to prepare students to more effectively meet the challenges of the communications age. Both schools now in the new college have long had admirable records of placing their graduates in newsrooms, advertising agencies, libraries, and academic institutions in and beyond South Carolina.

## Departments

- School of Journalism and Mass Communications (p. 340)
- School of Library and Information Science (p. 347)

## School of Journalism and Mass Communications

Department Website ([http://www.sc.edu/study/colleges\\_schools/cic/](http://www.sc.edu/study/colleges_schools/cic/))

Tom Reichert, Ph.D., *Dean*

Andrea Hickerson, Ph.D., *Associate Dean and Director, School of Journalism and Mass Communications*

David Lankes, Ph.D., *Associate Dean and Director, School of Library and Information Science*

The School of Journalism and Mass Communications offers the Master of Mass Communication, Master of Arts, and Doctor of Philosophy degrees. It also offers the Certificate of Graduate Study in Health Communication in cooperation with the School of Library and Information Science and the Department of Health Promotion, Education, and Behavior of the Arnold School of Public Health. There are no separate departments, as such, within the school, although course work is offered in electronic and print journalism, advertising, public relations, integrated communications, visual communications, and a wide range of other subjects dealing with the processes and effects of mass communications.

The general regulations of The Graduate School regarding admission, residency, theses and dissertations, admission to candidacy, and comprehensive examinations apply to all graduate work in the School of Journalism and Mass Communications. Beyond that, the school may request additional writing samples or other evidence of creative work.

Graduate study at the certificate, M.M.C, M.A., and Ph.D. levels in the school is designed to meet the needs of three categories of students:

1. graduates of approved colleges and universities who have little or no undergraduate work in journalism and mass communications but desire to complete a program of intensive academic and professional preparation for work in the mass communications field;
2. graduates in journalism and mass communications from accredited programs of journalism and mass communications and graduates of approved colleges or universities who have received a bachelor's degree in any field and who have one or more years of professional experience in journalism and mass communications;
3. graduates of approved master's degree programs who preferably have two or more years of professional experience in journalism and mass communications and who wish to obtain a doctoral degree.

Proficiency examinations may be required of applicants. Any deficiencies in an applicant's academic or professional background for the study of journalism and mass communications may require remedial course work that may not count toward the graduate degree.

Applicants for a graduate degree in journalism and mass communications who do not have professional experience or educational background for the field may be required to complete up to 15 semester hours of undergraduate work in journalism and mass communications.

Camp Carolina, an intensive summer experience, can be used to satisfy many of these requirements. Each applicant's case will be evaluated individually to determine the amount, if any, of remedial work required. These remedial courses are usually designated as prerequisites for more advanced courses, numbered 500 or above, which will become part of the student's plan of graduate study. Graduate students may, with approval of the associate director for graduate studies, enroll for some of these undergraduate courses at the same time they are enrolled in graduate courses. For example, a student enrolled in a 700-level seminar in media law may also be enrolled in an undergraduate skills course in basic news reporting; the student would earn graduate credit for the 700-level seminar but not for the 300-level news reporting class.

Applicants who cannot demonstrate a basic knowledge of statistics (e.g. successful completion of undergraduate basic statistics course)

must complete a course from an approved list before registering for JOUR 701 or JOUR 801. Such a course should be completed early in the student's program and may count toward the graduate degree only if it is 500-level or above.

## Programs

- Health Communication, Certificate (Journalism and Mass Communications) (p. 344)
- Journalism and Mass Communications, M.A. (p. 345)
- Journalism and Mass Communications, M.M.C. (p. 345)
- Journalism and Mass Communications, Ph.D. (p. 346)

## Courses

### JOUR 501 - Freedom, Responsibility, and Ethics of the Mass Media (3 Credits)

Historical development of freedom, responsibility, and ethics in the mass media, including communication theories, pressures, ownership.

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy, GLD: Professional and Civic Engagement Leadership Experiences

### JOUR 504 - International Mass Communications (3 Credits)

A comparative study of world mass communications media, with particular attention to press systems, the sources and flow of international news, and the problems and implications of world communications.

### JOUR 506 - Mass Media Criticism (3 Credits)

Development of critical thinking skills for analyzing mass media.

**Prerequisites:** JOUR 101.

### JOUR 507 - Communicating Science, Health and the Environment (3 Credits)

Explores the role of journalism in shaping perceptions of scientific issues and task. Emphasis on methods of effectively communicating about science, health, and the environment.

### JOUR 508 - Faith, Values, and the Mass Media (3 Credits)

Faith and values influence the media. An examination of the influence, why it happens, and of religious diversity and the increased public presence of religions, including Hinduism and Islam.

**Prerequisites:** JOUR 291 and junior or senior standing or consent of instructor

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy

### JOUR 515 - Mass Communications Capstone Portfolio (3 Credits)

Development of Mass Communications E-portfolio showcasing and reflecting on coursework and experiential learning, with a focus on leadership, as preparation for matriculation in higher education or careers in mass media.

**Prerequisites:** C or better in JOUR 501, JOUR 506, or JOUR 542.

### JOUR 516 - Advanced Creative (3 Credits)

Development of writing styles for print and broadcast advertising.

**Prerequisites:** JOUR 416.

### JOUR 517 - Integrated Campaigns (3 Credits)

The development of a complete, well coordinated integrated communications plan that incorporates research and analysis techniques, critical thinking, team work, creative and tactical skills.

**Prerequisites:** JOUR 416 and JOUR 421.

**Graduation with Leadership Distinction:** GLD: Research

### JOUR 518 - Brand Communications Practicum/Competitions (3 Credits)

Application of advertising techniques and skills in preparation of full scale campaign.

**Prerequisites:** JOUR 332, JOUR 416, JOUR 421.

### JOUR 521 - Interactive Communication Strategies (3 Credits)

The development of a complete, well-coordinated integrated communications plan that incorporates research and analysis techniques, critical thinking, team work, creative and tactical skills.

**Prerequisites:** JOUR 202 or MKTG 350.

### JOUR 527 - Advertising Management (3 Credits)

The dynamics of leadership and management in the creative industries.

**Prerequisites:** JOUR 202.

### JOUR 530 - Creative Leadership (3 Credits)

Theories of leadership as applied to creative industries. Students will engage and interact with community-based organizations to assess needs, plan communications strategies, lead student teams in developing those ideas, and present to clients. Junior standing or permission of instructor.

### JOUR 531 - Public Relations Campaigns (3 Credits)

Development of public relations campaigns for business and social institutions. Case studies of public relations campaigns and programs.

**Prerequisites:** JOUR 201, JOUR 332, JOUR 436.

**Graduation with Leadership Distinction:** GLD: Community Service, GLD: Research

### JOUR 533 - Public Relations Management (3 Credits)

Researching, programming, staff, budgeting, and planning public-relations programs by business, government, or consulting firms.

**Prerequisites:** JOUR 201, JOUR 436.

### JOUR 534 - Publication Writing and Design (3 Credits)

Publication writing and design as well as internal or constituent communications, specifically focused on an internal audience. Production of InterCom, the College of Mass Communications and Information Studies' alumni magazine.

**Prerequisites:** JOUR 291.

### JOUR 536 - Crisis Communications (3 Credits)

Introduction to crisis communications and management from a strategic, theory-based approach using research from historical and current case studies.

**Prerequisites:** C or better in JOUR 436.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

**JOUR 537 - The Carolina Agency (3 Credits)**

Participation in a functioning communications agency working for actual clients in a student-directed environment. Opportunity to both lead and be a part of a team servicing the communication needs of various clients.

**Prerequisites:** JOUR 101; JOUR 201; JOUR 203 or JOUR 202; and JOUR 291.

**Graduation with Leadership Distinction:** GLD: Community Service, GLD: Professional and Civic Engagement Leadership Experiences

**JOUR 538 - The Bateman Team (3 Credits)**

Self-directed development and implementation of a public relations campaign as part of a national competition: PRSSA's Bateman Competition.

**Prerequisites:** JOUR 332 and JOUR 436.

**JOUR 539 - Ethics in Public Relations and Public Policy (3 Credits)**

Review of the analytical process of resolving complex ethical issues and cases in public relations; study of the philosophical approaches to communication ethics.

**Prerequisites:** JOUR 101.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

**JOUR 542 - Public Opinion and Persuasion (3 Credits)**

Theory and practice of persuasive communication and the role of persuasion in shaping public opinion.

**JOUR 550 - Advanced Magazine Article Writing (3 Credits)**

Writing techniques used in the preparation and marketing of major nonfiction articles for national, regional, and local publications.

**Prerequisites:** JOUR 566.

**JOUR 560 - Capstone Portfolio Development (3 Credits)**

Advanced techniques of graphic and multimedia design and their application to problem-solving situations in the mass media. Emphasis on portfolio development.

**Prerequisites:** JOUR 446, JOUR 447, JOUR 449.

**JOUR 563P - Public/Civic Journalism (3 Credits)**

To gain an understanding of theory and practice of public/civic journalism, seen by its advocates as socially responsible journalism that attempts to build civic participation and empower communities.

**Graduation with Leadership Distinction:** GLD: Community Service

**JOUR 566 - Magazine Article Writing (3 Credits)**

Researching, organizing, writing, and marketing articles for publication in general and specialized publications.

**Prerequisites:** JOUR 361 or JOUR 436.

**JOUR 573 - Editorial and Opinion Writing (3 Credits)**

Content and style; writing of editorials, analyses, and commentaries.

**Prerequisites:** JOUR 291.

**JOUR 574 - Data Journalism (3 Credits)**

Acquiring, analyzing and presenting data using spreadsheets and other tools to uncover stories and provide depth and context to journalism.

**Prerequisites:** JOUR 291.

**JOUR 575 - Broadcast Journalism Practicum (3 Credits)**

Production of public affairs programs.

**Prerequisites:** JOUR 326, JOUR 333, and JOUR 434.

**Corequisite:** JOUR 502, JOUR 503, and JOUR 526.

**JOUR 576 - Reporting Public Affairs (3 Credits)**

Concentrated analyses of reporting in special fields, particularly in the South, including coverage of government, business, labor, the arts and sciences.

**Prerequisites:** JOUR 361.

**JOUR 579 - Broadcast Announcing (3 Credits)**

Theory and practice of professional broadcast announcing. Lecture-demonstration-laboratory course in principles underlying professional performance before microphones and cameras and the various broadcast performance functions.

**Prerequisites:** JOUR 325.

**JOUR 580 - Advanced Reporting Topics (3 Credits)**

Study and application of highly specialized reporting on topics related to current public discourse. May be repeated as content varies by title.

**Corequisite:** JOUR 587, JOUR 589, and JOUR 590 or JOUR 586, JOUR 588 and JOUR 590.

**JOUR 586 - Capstone I - Advanced Reporting - Broadcast and Online Journalism (3 Credits)**

Professional practice in meeting daily newscast deadlines through work on the Carolina News television newscast. Focus on polished reporting, performance and production techniques and demonstration of advanced television reporting skills under deadline pressure.

**Prerequisites:** JOUR 471.

**Corequisite:** JOUR 588 and JOUR 590.

**JOUR 587 - Capstone I - Advanced Reporting - Multimedia Journalism (3 Credits)**

Professional practice in shaping journalistic reporting to the multimedia environment. Application of news gathering, synthesizing and reporting across platforms – print and online, textual and graphic – in timely fashion.

**Prerequisites:** JOUR 471.

**Corequisite:** JOUR 589 and JOUR 590.

**JOUR 588 - Capstone II - Advanced Broadcast and Online Journalism Production (3 Credits)**

Advanced newscast production skills developed in the context of producing daily Carolina News broadcast. Shape and coordinate reporting and production team under deadline pressure in newsroom setting.

**Prerequisites:** JOUR 471.

**Corequisite:** JOUR 586 and JOUR 590.

**JOUR 589 - Capstone II - Advanced Multimedia Journalism Production (3 Credits)**

Editing and design employed to maximize effectiveness in the multimedia environment. Creating accurate and engaging content to reach consumers in varied ways reflecting contemporary consumer use of media.

**Prerequisites:** JOUR 471.

**Corequisite:** JOUR 587 and JOUR 590.

**JOUR 590 - Capstone III - Digital Journalism (3 Credits)**

Exposure to the evolving variety of journalism techniques, software programs and equipment to effectively tell compelling stories and convey information in multiple visual and interactive forms. Emphasis on extending professional skills while reinforcing current best practices.

**Prerequisites:** JOUR 471.

**Corequisite:** JOUR 586 and JOUR 588 or both JOUR 587 and JOUR 589.

**JOUR 595 - Domestic Study Away in Journalism and Mass Communications (3 Credits)**

Domestic study away course will focus on topics in journalism and mass communications and will be taught away from the University of South Carolina Columbia campus. Individual topics will vary by title.

**Prerequisites:** to be announced in class schedule.

**JOUR 596 - Study Abroad in Journalism and Mass Communications (3 Credits)**

Study abroad course will focus on topics in journalism and mass communications and will be taught as a study abroad experience. Individual topics will vary by title.

**Prerequisites:** to be announced in class schedule.

**JOUR 597 - Internship in Mass Communications (1-3 Credits)**

Supervised professional experience. Maximum of three hours credit. Contract approved by instructor, advisor, and department head is required.

**Experiential Learning:** Experiential Learning Opportunity

**JOUR 598 - Directed Independent Studies (1-6 Credits)**

Individual mass media projects. Contract approved by instructor, advisor, and department head is required for undergraduate students.

**JOUR 599 - Advanced Special Topics (3 Credits)**

Advanced topics in journalism and mass communications. Individual topics and

**Prerequisites:** to be announced by title in class schedule.

**JOUR 700 - Proseminar (1 Credit)**

Recent ideas, procedures, and techniques that aid in the conduct of professional and scholarly work in mass communication.

**JOUR 701 - Research Methods in Mass Communication (3 Credits)**

Methods and techniques of quantitative mass communications research: content analysis; survey research applications; media effects studies.

**Prerequisites:** Statistics competency.

**JOUR 702 - Communication Theory (3 Credits)**

Theoretical approaches to the study of mass communication including empirical, interpretive, and critical perspectives.

**JOUR 704 - Editorial Interpretation, Policy, and Management (3 Credits)**

Social issues and responsibilities affecting the management of the mass media.

**JOUR 705 - Strategic Communications Principles (3 Credits)**

Integration of advertising, public relations, and marketing communication within an organization or agency.

**JOUR 706 - Media Law (3 Credits)**

General legal philosophy and law affecting the mass media.

**JOUR 707 - Contemporary Issues in Mass Communication (3 Credits)**

Current issues in mass communication including control, ownership, and conflicts affecting the media.

**JOUR 710 - Organizational Communication (3 Credits)**

Communication within organizations including theories, research, and current issues of concern in the field.

**JOUR 711 - Applied Mass Communication Research (3 Credits)**

Methods and techniques for designing, conducting, and analyzing research related to mass communication.

**Prerequisites:** JOUR 701.

**JOUR 715 - Strategic Communications Strategies (3 Credits)**

The strategic planning process applied to integrated communication principles.

**Prerequisites:** JOUR 705.

**JOUR 717 - Methods in Content Analysis Research (3 Credits)**

Introduction to content analysis for communication topics. Quantitatively analyze communication content of many kinds from newspaper articles to social media and online content.

**JOUR 720 - History of Mass Media (3 Credits)**

Periods, movements, and developments in mass communication.

**JOUR 725 - Strategic Communications Campaigns (3 Credits)**

Principles and strategies of integrated communication to prepare a communication campaign for a client organization.

**Prerequisites:** JOUR 705, JOUR 715.

**JOUR 730 - Literary Aspects of Journalism and Mass Communication (3 Credits)**

Literary and creative aspects of journalism and mass communication as exemplified in the works of English and American prose and verse writers.

**JOUR 740 - New Technologies and the Mass Media (3 Credits)**

New technologies related to the mass media.

**JOUR 746 - Educational Broadcasting (3 Credits)**

History, nature, production-performance, evaluation, and means of improvement of educational/instructional broadcasting.

**JOUR 747 - Independent Study in Journalism and Mass Communications (1-3 Credits)**

Independent study in an area of journalism and mass communications relevant to the student's professional and/or research goals.

**JOUR 749 - Literature of Mass Communication (3 Credits)**

Methods for locating, evaluating, and abstracting information from literature relevant to the study of mass communication.

**JOUR 750 - Foundations of Multimedia Journalism (3 Credits)**

Course is designed to teach the foundations of multimedia journalistic storytelling. It will expose students to core concepts and practices associated with news gathering, news writing and field production.

**JOUR 762 - Issues in Mass Communication Management (3 Credits)**

Current management-related issues confronting the media, including management of creative people, budgeting, time management on deadline.

**JOUR 771 - Media Economics (3 Credits)**

Media organizations as economic institutions, including microeconomic analysis, basic trends in revenues and expenditures, evaluation of financial health, and performance in covering business and economics.

**Prerequisites:** ECON 224.

**JOUR 772 - Seminar in Health, Science, and the Media (3 Credits)**

The media representation of issues in science, technology and environment from a social science perspective, with emphasis on consequences in areas such as public opinion, public policy, public understanding attitude formation, persuasion and behavior change.

**JOUR 773 - Risk Communication (3 Credits)**

The critical examination of classic and contemporary empirical research on risk communication as it pertains to health and environment issues, as well as emerging technologies.

**JOUR 774 - Public Relations Theory (3 Credits)**

An analysis of the theoretical foundation and issues relevant to the practice of public relations.

**JOUR 775 - Strategic Communication for Behavior and Social Change (3 Credits)**

Theories of persuasion, principles and best practices of strategic communication, as applied to health and cause communication campaigns. Recognize, and develop effective, persuasive communications for social and health topics.

**Prerequisites:** JOUR 715.

**JOUR 776 - Seminar in Interactive Media and Emerging Communication Technologies (3 Credits)**

Seminar that examines the social uses and impacts of interactive / emerging media technologies.

**JOUR 777 - Practicum in Mass Communications Management (3 Credits)**

Seminar and supervised professional management experience in a media organization.

**JOUR 779 - Theories of Global Communication (3 Credits)**

Discussion of competing theories that attempt to explain current issues in global communication.

**JOUR 789 - Selected Readings and Research (1-3 Credits)**

Selected readings course designed to facilitate student's specialized research interest. Permission of instructor required.

**JOUR 790 - Topics in Mass Communication (1-6 Credits)**

Specialized topics in mass communication, individual topics to be announced by title. May be repeated for credit.

**JOUR 797 - Project Preparation (1-3 Credits)**

Individualized scholarly activity to develop and execute special projects relevant to the study of mass communication.

**JOUR 799 - Thesis Preparation (1-9 Credits)**

**JOUR 801 - Communication Research Design (3 Credits)**  
Principles and applications of quantitative and qualitative communication research designs.

**Prerequisites:** JOUR 701 and statistics competency.

**JOUR 802 - Seminar in Ethical Reasoning in Mass Communications (3 Credits)**

Ethical reasoning approaches in production and consumption of media messages.

**JOUR 803 - Seminar in Mass Communication Theory and Theory Construction (3 Credits)**

Meta-theoretical issues relevant to building theory in mass communication, concept explication, and forms of theory.

**JOUR 804 - Seminar in Mass Communication Historical Research Methods (3 Credits)**

Application of historical research methods to the study of mass communication.

**JOUR 805 - Seminar in Teaching Mass Communication (3 Credits)**

Teaching and learning methodologies and theories appropriate to mass communication instruction.

**JOUR 806 - Seminar in Mass Communication Legal Research Methods (3 Credits)**

Application of legal research methods to the study of mass communication.

**JOUR 807 - Advanced Communication Research (3 Credits)**

Advanced methods and techniques for analyzing empirical data for communication research.

**JOUR 808 - Communication Research: Critical, Cultural, and Naturalistic Approaches (3 Credits)**

Designing and conducting critical, cultural and naturalistic research.

**JOUR 809 - Seminar in Freedom of Speech (3 Credits)**

Issues involving the governmental protection and regulation of speech, and how that affects those involved in mass communication.

**JOUR 810 - Independent Research Project (3-6 Credits)**

Working closely with a faculty member, a student will design, and conduct a research project, with the objective of submitting the final report for publication or for presentation at an academic conference in the discipline. May be repeated for a maximum of 6 credit hours.

**JOUR 899 - Dissertation Preparation (1-12 Credits)**

## Health Communication, Certificate (Journalism and Mass Communications)

This is an 18-hour post-bachelor's program that provides students the opportunities to strengthen their knowledge in health communication content, research methods, and application. Qualified individuals can take the certificate as a stand-alone program or in conjunction with another degree.

### Learning Outcomes

- Students will demonstrate the ability to translate basic theories and frameworks of health and risk communication to the development of health communication campaigns to specific target audiences.
- Students will be able to explain the principles governing the selection and access of health information materials to serve the needs of diverse lay, professional, and cultural communities.
- Students will demonstrate an ability to develop, implement, and evaluate a health communication project for a specific target audience.

### Certificate Requirements (18 Hours)

#### Core Courses (9 Hours)

Course	Title	Credits
HPEB 711	Applied Health Communication	3
SLIS 749	Health Sciences Information Resources	3
Select one of the following:		3
JOUR 702	Communication Theory	
JOUR 803	Seminar in Mass Communication Theory and Theory Construction	
JOUR 772	Seminar in Health, Science, and the Media	
<b>Total Credit Hours</b>		<b>9</b>



## Directed Electives (6 Hours)

Six directed elective hours from an approved list provided by the school, depending on the student's interests as approved by the student's faculty advisor and the associate director for graduate studies.

## Practicum/Project (3 Hours)

A three-credit-hour practicum or project in the student's home department.

# Journalism and Mass Communications, M.A.

The M.A. is a traditional academic program involving a minimum of 24 semester hours of course work plus a 6-hour thesis, for a minimum of 30 graduate hours. The thesis, an extensive and well-documented research paper, is designed to demonstrate that the student is capable of independent research on a meaningful topic under the supervision of a faculty committee. A minimum of 21 hours must be earned in graduate-level journalism and mass communications courses, including the basic M.A. core listed below. With the approval of the faculty advisor, the M.A. student may take 9 semester hours of course work outside the School of Journalism and Mass Communications. The M.A. degree is especially appropriate for those students with extensive professional experience in journalism and mass communications who are interested in teaching and/or research careers in mass communication and those who may want to pursue a doctorate.

## Learning Outcomes

- Students will demonstrate a familiarity with research designs, data collection methods and sampling techniques and should be able to organize and conduct basic market research and audience measurement studies. The students also should become familiar with and understand current journalism and mass communications research studies in scholarly journals.
- Students will demonstrate a thorough knowledge of mass communications theory. Students will become familiar with contemporary scholarship involving major mass communications theories.
- Students will demonstrate a thorough knowledge of mass media law. Students will demonstrate a familiarity with current trends in and interpretations of mass media law, including such areas as libel, privacy, access to public information, regulation of commercial speech, copyright and related matters, as well as an understanding of the philosophical considerations involved in free speech issues.
- Students will demonstrate effective writing and critical thinking skills and the application of those skills in journalism and mass communications scholarship.
- Students will demonstrate a thorough knowledge of mass communications history and will demonstrate an understanding of the mass media as social institutions. Students should be able to relate mass communications processes and effects to politics, culture and society in general.

## Admissions Requirements

An applicant for admission to the M.A. degree program will be evaluated on a combination of factors: undergraduate grades; performance on the GRE; English proficiency scores (TOEFL or IELTS if international applicant); resume; recommendations and the written statement of objectives, in which the applicant outlines reasons for seeking a graduate

degree in mass communications. Applicants who have already taken 12 credit hours of graduate-level courses before application, with a cumulative minimum GPA of 3.0 (or a B Grade equivalent) from those courses, will be eligible for a GRE waiver.

Successful applicants usually present an undergraduate grade average of at least 3.0 and a combined GRE score of 300 (153 Verbal and 147 Quantitative) and a 4.0 or higher on Analytical Writing. The typical graduate student in the program exceeds these standards. However, applicants who are unusually promising in other ways—e.g., they have compiled solid professional experience or have overcome formidable obstacles along the way—have been accepted and have done well. International applicants, in addition to the above, must present a score of at least 90 on the TOEFL exam or 6.5 on IELTS. Those with a degree from an English-speaking institution are eligible for an exemption from this requirement. More information is available in the Academic Programs section of the College of Information and Communications Website.

## Degree Requirements (30 Hours)

To earn the M.A. degree, a student must successfully complete the following:

### Core Courses (21 Hours)

Course	Title	Credits
JOUR 701	Research Methods in Mass Communication	3
JOUR 702	Communication Theory	3
JOUR 706	Media Law	3
JOUR 720	History of Mass Media	3
JOUR 749	Literature of Mass Communication	3
JOUR 799	Thesis Preparation	1-9
<b>Total Credit Hours</b>		<b>16-24</b>

### Electives (9 Hours)

Course	Title	Credits
Select nine additional hours of approved elective credits		9
<b>Total Credit Hours</b>		<b>9</b>

### Comprehensive Examination

A one-hour written examination based on the M.A. core courses.

### Master's Thesis Defense

A master's thesis defended before the student's thesis committee.

# Journalism and Mass Communications, M.M.C.

The M.M.C. emphasizes media management and is designed primarily for those who wish to become professionals in some aspect of mass communications. Students enrolled in the M.M.C. program do not write a thesis but are required to complete a minimum of 36 hours of course work, including a professional practicum experience with a newspaper, magazine, television or radio station, advertising or public relations department or agency, or some other approved mass media-related organization.

Required courses include the basic M.M.C. core and a minimum of 24 hours of directed electives as listed below. Some of the electives are taught in the Moore School of Business.

## Learning Outcomes

- Students will demonstrate an understanding of the principles, processes, strategies, and tactics involved in the professions of strategic communication and multimedia journalism.
- Students will produce written products that show evidence of clear and critical thinking, and utilize proper grammar, sentence and paragraph structure, organization, transition, and tempo.
- Students will be able to identify various research designs and data collection methods, and be able to report and interpret research results.
- Students will be able to discuss the contemporary issues facing media and communication managers.
- Students will be able to discuss the various areas of media law such as libel, access to information, copyright, free speech, and more.

## Admissions Requirements

An applicant for admission to the M.M.C. degree program will be evaluated on a combination of factors: undergraduate grades; performance on the GRE; English proficiency scores (TOEFL or IELTS if international applicant); resume; recommendations and the written statement of objectives, in which the applicant outlines reasons for seeking a graduate degree in mass communications. Applicants who have already taken 12 credit hours of graduate-level courses before application, with a cumulative minimum GPA of 3.0 (or a B Grade equivalent) from those courses, will be eligible for a GRE waiver.

Successful applicants usually present an undergraduate grade average of at least 3.0 and a combined GRE score of 300 (153 Verbal and 147 Quantitative) and a 4.0 or higher on Analytical Writing. The typical graduate student in the program exceeds these standards. However, applicants who are unusually promising in other ways—e.g., they have compiled solid professional experience or have overcome formidable obstacles along the way—have been accepted and have done well. International applicants, in addition to the above, must present a score of at least 90 on the TOEFL exam or 6.5 on IELTS. Those with a degree from an English-speaking institution are eligible for an exemption from this requirement. More information is available in the Academic Programs section of the College of Information and Communications Website.

## Degree Requirements (36 Hours)

To earn the M.M.C. degree, a student must successfully complete the following:

### Core Courses (12 Hours)

*Required for both Strategic Communication Management and Multimedia Journalism Tracks.*

Course	Title	Credits
JOUR 701	Research Methods in Mass Communication	3
JOUR 706	Media Law	3
JOUR 762	Issues in Mass Communication Management	3
JOUR 777	Practicum in Mass Communications Management	3
<b>Total Credit Hours</b>		<b>12</b>

## Select One of the Following Tracks (24 Hours Minimum)

### Strategic Communication Management Track

A minimum of 24 hours from an approved list provided by the school, depending on the student's interests as approved by the student's academic advisor and the associate director for graduate studies.

### Multimedia Journalism Track

A minimum of 24 hours from an approved list provided by the school, depending on the student's interests as approved by the student's academic advisor and the associate director for graduate studies.

### Comprehensive Examination

*Required for both the Strategic Communication Management and Multimedia Journalism Track.*

The comprehensive examination consists of a four-hour written examination based on the core courses.

## Journalism and Mass Communications, Ph.D.

The Ph.D. in journalism and mass communications prepares students for teaching and research careers in higher education and for research and management positions with mass communications organizations.

The doctoral program in the School of Journalism and Mass Communications is small and selective, permitting students a considerable degree of flexibility in tailoring courses and areas of study to fit their special needs and career goals.

The doctoral core requirements, listed below, are designed to equip the student with a strong background in quantitative and qualitative social science research methods and design, communications theory, ethical perspectives, historical and legal research methods, and teaching methods. Required courses include the basic doctoral core, a minimum of 30 graduate hours of directed electives, and a minimum of 12 hours of dissertation credit.

## Learning Outcomes

- Learning Outcome 1 (Theories): Students will demonstrate understanding of communication theories necessary to teach college-level courses and to carry out formal research.
- Learning Outcome 2 (Subject Areas): Students will demonstrate overall understanding of specialized topics of the student's interest necessary to teach college-level courses and to carry out scholarly research.
- Learning Outcome 1 (Teaching Knowledge and Skills): Students will demonstrate thorough knowledge of theories and practices of university-level instruction.
- Learning Outcome 2 (Teaching Applications and Experiences): Students will be able to apply their knowledge and skills to teaching journalism and mass communications.
- Learning Outcome 1 (Research Methods): Students will demonstrate a thorough knowledge of advanced statistics, quantitative research methodology, and qualitative research methodology appropriate for journalism and mass communications scholarship, including the application of such knowledge in their own research and the ability to correctly evaluate peer-reviewed research.
- Learning Outcome 2 (Writing and Presenting Research): Students will demonstrate effective writing and presentation skills and the

application of those skills in journalism and mass communications scholarship suitable for high-level peer-reviewed journals and conference presentations.

## Admissions Requirements

An applicant for admission to the doctoral program will be evaluated on a combination of factors: applicant's academic record (especially work done at the master's level), performance on the GRE, English proficiency scores (TOEFL or IELTS if international applicant), resume showing professional experience, recommendations, writing sample(s), and the applicant's personal statement outlining reasons for applying for doctoral study and career hopes and expectations.

Preference is given to applicants with at least 3.0 GPA for undergraduate and graduate work, at least one year of experience as journalism and mass communications professionals. A GRE combined score of 300 (153 Verbal and 147 Quantitative) and a 4.0 or higher on the Analytical Writing is expected, though exceptions are occasionally made for applicants with unusually strong professional backgrounds or other evidence of outstanding professional and intellectual promise. International applicants, in addition to the above, must present a score of at least 100 on the TOEFL exam or 7.0 on IELTS. Those with a degree from an English-speaking institution are eligible for an exemption from this requirement. More information is available in the Academic Programs section of the College of Information and Communications Website.

Doctoral students normally must have completed, or be in the final stages of, a master's degree. In exceptional circumstances, a student with a baccalaureate degree may be admitted directly into the doctoral program, with the understanding that the student will first complete the usual requirements for the master's degree while studying for the doctorate. In such cases, the usual doctoral requirements of 45 hours of course work beyond the master's plus a dissertation will apply. A prior master's degree needs not be in journalism/mass communications, although a student whose master's degree is in another field may need additional course work.

## Degree Requirements (57 Post-Master's Degree Hours)

To earn the Ph.D. in mass communications, the student must successfully complete the following:

### Qualifying Examination

A qualifying examination, administered at the beginning of the student's program. This examination, largely diagnostic in nature, will help the faculty in planning the student's program of study.

### Course Requirements (57 Hours)

#### Basic Doctoral Core (15 Hours)

Course	Title	Credits
JOUR 801	Communication Research Design	3
JOUR 803	Seminar in Mass Communication Theory and Theory Construction	3
JOUR 805	Seminar in Teaching Mass Communication	3
JOUR 807	Advanced Communication Research	3
JOUR 808	Communication Research: Critical, Cultural, and Naturalistic Approaches	3
<b>Total Credit Hours</b>		<b>15</b>

### Mass Communication Electives (21Hours)<sup>1</sup>

At least 21 hours in approved mass communication electives from JOUR courses at 700/800 levels.

### Courses in Another Field of Study (9 Hours)<sup>1</sup>

At least 9 hours in another field of study, such as economics, business, political science, history, education, library science, or English; normally the three courses would be in the same academic discipline. However, for example, a student interested in modern Africa might take one course in history, one in political science, and a third in sociology with approval from the faculty.

<sup>1</sup> At least 6 hours from Mass Communications Electives and Courses in Another Field of Study must be in research methods beyond core course requirements of the Ph.D. and Master's degree programs (may include JOUR courses).

### Dissertation Preparation (12 Hours minimum)

Course	Title	Credits
JOUR 899	Dissertation Preparation	12
<b>Total Credit Hours</b>		<b>12</b>

### Comprehensive Examination

A comprehensive examination is based on doctoral coursework; this examination is administered in 2 parts: a 12-hour written examination (4 three-hour sets of questions taken over 5 consecutive business days) and an oral defense before the student's comprehensive examination committee. The comprehensive exam and oral defense will cover theory, research, a third area of emphasis in mass communication and an outside area.

### Residency Requirement

The University's residency requirements apply, which means the student must be enrolled for at least 6 semester hours during 3 consecutive semesters.

### Dissertation Defense

The doctoral dissertation must be successfully defended before the student's dissertation committee.

## School of Library and Information Science

Department Website ([http://www.sc.edu/study/colleges\\_schools/cic/](http://www.sc.edu/study/colleges_schools/cic/))

Tom Reichert, *Dean*  
David Lankes, Ph.D., *Associate Dean and Director, School of Library and Information Science*

The mission of the School of Library and Information Science is to provide and promote education and leadership in library and information science, services, and studies through the highest levels of teaching, research and service. The school is committed to supporting the development and improvement of library and information services as an essential part of cultural enrichment, the dissemination of knowledge, and the enhancement of overall quality of life.

The School of Library and Information Science offers the Ph.D. in Library and Information Science, the Master of Library and Information Science degree, and two programs of advanced study beyond the master's degree: the Certificate of Graduate Study in Library and Information Science and the Specialist in Library and Information Science degree. In addition, the

school offers the Certificate of Graduate Study in Health Communication in cooperation with the Department of Health Promotion, Education, and Behavior (of the Arnold School of Public Health) and the School of Journalism and Mass Communications. Joint master's degrees are offered in conjunction with the English department and with the Public History Program (see Graduate Dual Degree Programs (p. 463)).

The Ph.D. in Library and Information Science is a research-intensive degree designed to prepare graduates for faculty and administrative careers in universities, research centers, and the public sector. The Ph.D. program is broadly interdisciplinary, with a curriculum balanced between the intellectual realms of library science and information science. While providing foundational courses covering theoretical and methodological approaches to information-seeking behavior and interactions with information in its many formats, the program also allows for study in a cognate discipline that sharpens and enriches a student's major research emphasis.

The Master of Library and Information Science degree is a program of basic professional education designed to prepare students for entry into positions in libraries and information centers in colleges, schools, communities, industries, and businesses. The M.L.I.S. program provides students not only a strong core of general knowledge of the profession but also the opportunity to explore individual areas of interest related to career preparation. Instruction is available to students in all areas of South Carolina through an extensive program of distance education. Advances in educational technology made it possible for the University of South Carolina to work cooperatively with appropriate agencies in Georgia, West Virginia, Maine, and Virginia to offer the complete M.L.I.S. program to students in those states who would not otherwise have access to an ALA-accredited program of library and information science.

The Certificate of Graduate Study in Library and Information Science is tailored to complement the Master of Library and Information Science program by providing post-master's degree instruction designed to enhance the student's career opportunities in a chosen area of specialization. Completion of the Certificate of Graduate Study in Library and Information Science will acknowledge to prospective employers the student's additional preparation for specific job responsibilities.

The Specialist in Library and Information Science is a sixth-year degree program for librarians, information managers, media specialists, and other related professionals who wish to refresh and update their knowledge and skills, gain greater specialization in their professional training, or redirect their careers from one area to another. The school meets the National Council for Accreditation of Teacher Education standards for teacher education programs.

## Admission

### Ph.D. in Library and Information Science

Admission to the Ph.D. program is competitive and is based on the strength of the applicant's educational background (with the expectation of an M.L.I.S. or master's-level degree in a related field), standardized test scores, work experience, a statement of research interests, and a personal interview.

Application requirements for the Ph.D. program include:

1. completing the Graduate School's online application form, including a written statement describing the applicant's anticipated research focus or interest and a nonrefundable \$50 application fee;
2. official transcripts from all colleges or universities attended;

3. GRE scores taken within 3 years of application with a combined verbal and quantitative scores of 1000 or above and one of the score registering 600 or above; a resume or c.v.; and a personal interview;
4. an official report showing a minimum score of 570 (230 computer-based) on the TOEFL or a minimum overall band score of 6.5 on the IELTS Academic Course Type 2 exam for international students whose native language is not English;
5. three letters of recommendation from persons able to comment on the applicant's academic ability and scholarly potential;
6. a resume or curriculum vitae outlining the applicant's educational and professional achievements (sent directly to the School of Library and Information Science);
7. following the receipt of all documents listed above, an interview with a member of the graduate faculty, preferably in person but, if necessary, by phone.

### Master of Library and Information Science Program

Admission to the School of Library and Information Science is selective and based on the faculty's assessment of the applicant's aptitude for graduate study and potential contribution to the profession. The School of Library and Information Science takes a holistic approach to the admissions process. Consequently, an applicant's entire file and interview are taken into consideration before an admission decision is made.

Application requirements for the M.L.I.S. program include:

1. a completed USC Graduate School admissions form and a nonrefundable \$50 application fee;
2. official transcripts showing possession of a baccalaureate degree from an institution that is regionally accredited (such as by the Southern Association of Colleges and Schools) or international credentials deemed by The Graduate School and the School of Library and Information Science to be acceptable; the undergraduate record should show promise for graduate study with a GPA of at least 3.00 (on a 4.00 scale) in the last two years or 60 semester hours of the applicant's undergraduate degree;
3. official transcripts from all other colleges or universities attended;
4. two letters of reference from persons who can comment directly on the applicant's professional and academic capabilities and potential (For example, college instructors could comment on an applicant's previous academic performance in relation to potential for graduate study; an immediate supervisor could address job performance and potential for advancement. Letters which speak only of the applicant's personal attributes will not be accepted.);
5. official score reports for the GRE taken within the last five years that indicate a total score of 950 on the combined verbal and quantitative portions. The verbal portion must have a score of at least 500. You may register online at <http://www.ets.org/gre> (<http://www.ets.org/gre/>). USC's institution code is 5818. Miller Analogies Test (MAT) Official score reports for tests taken within the last five years must indicate a score of at least 410. For MAT information and testing center locations, go to <http://www.milleranalogies.com>. Test of English as a Foreign Language (TOEFL) International students whose native language is not English must also submit an official score report with a minimum score of 570 paper-based, a 230 computer-based total, and a score of 75 on the Internet-based test (TOEFL iBT). TOEFL scores are available from ETS for two years. Information can be found at <http://www.ets.org/toefl> (<http://www.ets.org/toefl/>);
6. the School of Library and Information Science supplemental information form, which includes a statement of purpose.

Non-degree applicants (persons with no degree objective) submit the appropriate graduate school application, the \$50 application fee, and an official transcript bearing proof of completion of a bachelor's degree or higher. Admission as a non-degree seeking student does not assure or imply admission to degree candidacy in the future. Applicants to degree programs will not be allowed to register as non-degree students in any course in library and information science until their applications are complete and an admission decision has been made.

Applications for admission are processed as they are received. Applicants who file after the deadline for a given semester may not be admitted for that term. Deadlines are available from the school's admissions office and on the school's Web page.

Graduate students who are degree candidates in other divisions of the University may enroll in some elective courses in the School of Library and Information Science. An individual who holds a master's degree in library and information science from an ALA-accredited program may enroll in any course in which space is available after admission as a nondegree student to The Graduate School. Recertification (nondegree) admission is available for certified school teachers whose purpose in enrolling is for renewal of the teaching certificate only (applicants not intending to seek a master's degree).

A number of assistantships and scholarships are available to students entering the school. To inquire about or apply for these, contact the School of Library and Information Science Student Services Office. Students interested in financial assistance are also encouraged to apply to the financial aid office of the University as early as possible.

## Certificate of Graduate Study in Library and Information Science Program

The Certificate of Graduate Study in Library and Information Science complements the Master of Library and Information Science program by providing post-master's degree instruction, enhancing the student's career opportunities, and providing extended preparation for specific areas of library and information service.

Requirements for admission to the Certificate of Graduate Study in Library and Information Science are the same as those listed above for the M.L.I.S. program. Students enrolled in the M.L.I.S. program should seek admission to the certificate program prior to the completion of 24 credit hours of course work; current M.L.I.S. students must submit an official application from The Graduate School for the certification program prior to the completion of 24 hours of M.L.I.S. course work.

## Certificate of Graduate Study in Health Communication (LIS)

Applicants to the Certificate of Graduate Study in Health Communication must have, at a minimum, a bachelor's degree and meet the general requirements of The Graduate School. Applicants may request that significant professional experience be substituted for standardized test scores.

## Specialist in Library and Information Science Program

Admission to the Specialist in Library and Information Science degree program is selective and is based on the faculty's assessment of the applicant's aptitude for a particular level of graduate study and potential contribution to the profession. The school takes a holistic approach to the admissions process. Consequently, an applicant's entire file is taken into consideration before an admission decision is made.

Application requirements for the specialist program include:

1. a completed USC Graduate School admissions form and a nonrefundable \$50 application fee;
2. an official transcript showing possession of a master's degree in library and information science from an ALA-accredited or NCATE-approved program (Applicants with a master's degree from an NCATE-approved program must also have current certification as a librarian or school library media specialist.); applicants with a master's degree in library and information science that is not from an ALA-accredited or NCATE-approved program may also be admitted to the program upon satisfactory exemption of SLIS 701 and 707; any of these courses not exempted must be taken as part of the specialist degree program in addition to the required 30 hours; applicants may be accepted into the program upon satisfactory exemption of SLIS 701; any of these courses not exempted must be taken as part of the specialist degree program in addition to the required 30 hours;
3. a minimum of three years of full-time experience in a library, media center, or information agency (Requirements for work experience may be waived.);
4. official score reports for the GRE taken within the last five years that indicate a total score of 950 on the combined verbal and quantitative portions. The verbal portion must have a score of at least 500. You may register online at <http://www.ets.org/gre> (<http://www.ets.org/gre/>). USC's institution code is 5818. Miller Analogies Test (MAT) Official score reports for tests taken within the last five years must indicate a score of at least 410. For MAT information and testing center locations, go to <http://www.milleranalogies.com>. Test of English as a Foreign Language (TOEFL) International students whose native language is not English must also submit an official score report with a minimum score of 570 paper-based, a 230 computer-based total, and a score of 75 on the Internet-based test (TOEFL iBT). TOEFL scores are available from ETS for two years. Information can be found at <http://www.ets.org/toefl> (<http://www.ets.org/toefl/>);
5. two letters of recommendation from persons able to comment on the applicant's professional performance and potential;
6. a statement of professional purpose indicating the specialization the applicant seeks to develop (A resume outlining the applicant's educational and professional record should be forwarded directly to the School of Library and Information Science.);
7. a personal interview with the specialist committee. (The committee may, at its discretion, waive or change the personal interview requirement and use other information in its place.)

## Programs

- Health Communication, Certificate (Library and Information Science) (p. 354)
- Library and Information Science, Certificate (p. 354)
- Library and Information Science, M.L.I.S. (p. 355)
- Library and Information Science, Ph.D. (p. 356)
- Library and Information Science, S.L.I.S. (p. 356)

## Courses

### SLIS 501 - Teaching and Training in Distributed Environments (3 Credits)

Knowledge and skills for applying complementary technologies for learning in distributed learning environments (Pre-K-lifelong) through lecture, demonstration, and discussion.

**SLIS 523 - Materials for Early Childhood (3 Credits)**

Media resources and techniques for children from birth to 9 years. Reading interests and developmental needs of young children. Authors, illustrators, indexes, bibliographic tools, evaluation sources, and professional literature. Not open to students enrolled in M.L.I.S. program.

**SLIS 525 - Materials for Children (3 Credits)**

Media resources for children. Reading interests of children and their curricular and independent needs for information. Authors, illustrators, indexes, bibliographic tools, and sources of evaluation of materials for children. Techniques and literature for read-aloud programs and storytelling. Not open to students enrolled in M.L.I.S. program.

**SLIS 527 - Materials for Adolescents (3 Credits)**

Media resources for adolescents. Reading interests of adolescents and their curricular and independent information needs. Study of relationships of media to information needs and critical comparison between classic and contemporary materials for adolescents. Indexes, bibliographic tools, and sources of evaluation of materials. Not open to students enrolled in M.L.I.S. program.

**SLIS 529 - Special Topics in Library and Information Studies (3 Credits)**

Specific topics of current concern to the library, information, and media professions to be identified by title. Not open to students enrolled in M.L.I.S. program.

**SLIS 530 - Applications of Information Technology and the Infrastructure (3 Credits)**

Introductory knowledge for school library media specialists, teachers, administrators, parents, and other citizens interested in practical applications of information technology to support learning, decision making, and community building.

**SLIS 534 - Knowledge Discovery Techniques (3 Credits)**

Knowledge discovery techniques and applications.  
**Prerequisites:** SLIS 434 for Undergraduate Students.

**SLIS 560 - Information Visualization (3 Credits)**

Foster theoretical insights about information visualization. Prepare small and large-scale datasets for visual representations. Project-based and students will map real datasets and understand the methods to interpret the visualizations.

**SLIS 600 - Storytelling: Theory, Practice, and Development (3 Credits)**

Storytelling methods, techniques, and materials encompassing heritage, art, literature, and programming.

**SLIS 701 - Ethics, Values, and Foundational Principles of Library and Information Science Professions (3 Credits)**

Introduction to the issues and core values of library and information professions, including equity of access, literacy and learning, information policy, collaboration, service, professional growth and development, and culturally responsive practice.

**SLIS 702 - Community Engagement and Service (3 Credits)**

Explores the role of library and information organizations in communities, with a focus on building community relationships, engagement, and outreach.

**SLIS 703 - Reference and Instruction (3 Credits)**

Introduction to the design and delivery of instructional services and assistance on the use of information resources to promote information literacy and informed decision-making.

**SLIS 704 - Leadership in Information Organizations (3 Credits)**

Introduction to the nature, development, roles, and fundamental issues of leadership in library and information organizations.

**SLIS 705 - Research Design and Evaluation (3 Credits)**

Introduces the research process as applied to library and information science topics with an emphasis on research methods, critical evaluation, and the practical application of research.

**SLIS 706 - Information Organization and Access (3 Credits)**

Explores the design, use, and evaluation of information organization and retrieval systems to support digital curation and preservation, metadata generation, and information-seeking.

**SLIS 707 - Information Organization and Retrieval (3 Credits)**

Issues and techniques of knowledge representation and information organization, information retrieval systems, and users' information seeking behavior.

**Prerequisite or Corequisite:** SLIS 701.

**SLIS 710 - History of Information Organizations and Technologies (3 Credits)**

A survey, from ancient times to the present, of the evolution and social role of information organizations (libraries, archives, information centers, etc.) and technologies (books, journals, computers, etc.). Emphasis on the U.S. in the 19th and 20th centuries.

**Prerequisites:** SLIS 701.

**SLIS 711 - Introduction to Archival & Records Studies (3 Credits)**

Nature and use of archives and records; functions of archives and records professionals; and legal, ethical, and political issues in archives and records.

**SLIS 715 - Printing (1 Credit)**

Introduction to printing with movable type. This course is designed to give students some experience in designing and printing books and broadsides. Examination of paper, typefaces, composition work, and simple bookbinding are included.

**SLIS 716 - Introduction to Bibliography and Textual Studies (3 Credits)**

Introduction to analytical, descriptive, and textual bibliography, and to the principles and practice of editing.

**SLIS 717 - Special Collections Librarianship (3 Credits)**

Introduction to the missions, professional standards and best practices of special collections librarianships. Topics include access and acquisitions, collection assessment and development, collection management and maintenance, donor relations, public programming and current issues and trends. Restricted to SLIS graduate students.

**SLIS 718 - History of Children's and Young Adult Literature (3 Credits)**

Historical overview of the literary content, illustration, and social values of children's and young adult literature written in English. Examines the influence of movements such as Romanticism, Rationalism, and postmodernism, as well as changing trends over time.

**SLIS 719 - Preservation Planning and Administration (3 Credits)**

The planning and administration of preservation programs in libraries, archives, records centers, and manuscript depositories.

**Prerequisites:** SLIS 701.

**SLIS 720 - School Library Media Program Development (3 Credits)**

Roles, functions, and organization of school library media programs. Systematic planning and evaluation, leadership, advocacy, and integration of program into the curriculum.

**SLIS 721 - Seminar in School Library Programs (3 Credits)**

Problems relating to contemporary school media programs will be identified and analyzed by students, drawing from their own experiences, pertinent literature in the field, and field investigations.

**Prerequisites:** SLIS 701, SLIS 703, SLIS 705, SLIS 707, SLIS 720.

**SLIS 724 - Special Libraries (3 Credits)**

An overview of industrial, business, governmental, and professional libraries and related information organizations. Study of their organizational characteristics, governance, services, distinctive features. Major part of course is simulation of information management problems in these organizations.

**SLIS 725 - Digital Libraries (3 Credits)**

History and current state of digital records, including their storage, organization, and preservation in digital libraries.

**Prerequisites:** SLIS 701, SLIS 707.

**SLIS 726 - Knowledge Management for Library and Information Professionals (3 Credits)**

An introduction to the background, principles, practices, and technologies of knowledge management for library and information professionals.

**SLIS 727 - Health Sciences Library Services (1 Credit)**

A detailed study of traditional and innovative services characteristic of health science libraries. Includes community study design and evaluation of services. For those students committed to careers in health sciences libraries.

**Prerequisites:** SLIS 726.

**SLIS 728 - Public Library Systems (3 Credits)**

Course focuses upon three topics: 1) organizational patterns for various library operations, local and regional; 2) the political environment of the public library; and 3) major problems confronting public library systems.

**Prerequisites:** SLIS 701.

**SLIS 729 - Academic Libraries (3 Credits)**

An analysis of the historical development and current issues in academic libraries.

**Prerequisites:** SLIS 704.

**SLIS 730 - Cataloging Information Materials (3 Credits)**

An in-depth study of AACR2 covering both print and nonprint materials; searching bibliographic materials in a database, editing and updating them; principles of coding, tagging, and entering the results into a database; discussion of administrative problems.

**Prerequisites:** SLIS 702.

**Prerequisite or Corequisite:** SLIS 707.

**SLIS 731 - Subject Analysis and Classification (3 Credits)**

Study of major classification and subject authority systems. Emphasizes the understanding and application of these systems in information agencies.

**Prerequisites:** SLIS 730.

**SLIS 732 - Indexing and Abstracting (3 Credits)**

Introduction to principles and practices in abstracting and indexing.

**Prerequisite or Corequisite:** SLIS 707.

**SLIS 733 - Serials (3 Credits)**

An introductory study of methods and problems in acquiring, organizing, and retrieving serial publications with an emphasis on the special features of serials. Includes an introduction to computer applications.

**Prerequisites:** SLIS 702.

**SLIS 734 - Government Information Sources (3 Credits)**

Creation, acquisition, organization, retrieval, and use of government-produced information. Emphasis is on U.S. government information but includes attention to state, local, and international sources.

**Prerequisites:** SLIS 703, SLIS 707.

**SLIS 735 - Metadata (3 Credits)**

Examination of metadata definition, selection and applications; Role of metadata in information discovery, acquaintance with various metadata schemes and standards for libraries, museums, archives and info centers.

**Prerequisites:** SLIS 707.

**SLIS 738 - Seminar in Technical Services (3 Credits)**

Management, personnel, and materials within technical service departments for all types of libraries. Standardization, centralized and cooperative efforts, automation and evaluation as applied to all functions within technical services departments.

**Prerequisites:** SLIS 702.

**SLIS 740 - Online Information Services (3 Credits)**

Direct experience searching online databases and examination of related administrative issues.

**Prerequisites:** SLIS 707.

**SLIS 741 - Educational Services in Library and Information Organizations (3 Credits)**

Applications of human learning theory and presentation techniques to information literacy programs and curriculum collaboration for library and information professionals.

**Prerequisites:** Completion of 9 semester hours of SLIS graduate-level classes.

**SLIS 742 - Curricular Role of the School Librarian (3 Credits)**

Role of the school library media specialist in integrating the school library media program into a K-12 standards-based curriculum, including best practices, needs assessment, collaboration, instructional design, and resource provision.

**Prerequisites:** SLIS 701, SLIS 706, SLIS 703 preferred and required education courses (for initial certification candidates).

**SLIS 743 - Health Information Retrieval in Electronic Environments (3 Credits)**

Presents a survey of electronic information resources in the health sciences and an introduction to advanced searching techniques and analytical skills to access biomedical literature.

**SLIS 744 - Music Libraries and Information Services (3 Credits)**

Acquisition of and special cataloging requirements for printed music, recordings, and multimedia; collection management; administration of music libraries; preservation/conservation of special materials.

**SLIS 745 - Social Science Information Services (3 Credits)**

Considers how literature and information services in the social sciences are organized for the purpose of interpretation and delivery. Students survey the literature of psychology, sociology, political science, and other disciplines in some detail. Practice in question consultation and database searching will be included.

**Prerequisites:** SLIS 703, SLIS 707.

**SLIS 746 - Humanities and Arts Information Services (3 Credits)**

A survey and evaluation of the nature, history, and bibliography of the literature of the humanities and arts. Emphasizes the distinctive features of materials, research, communication, and information-seeking patterns.

**Prerequisites:** SLIS 703.

**SLIS 747 - Science and Technology Information Services (3 Credits)**

A survey of literature in the basic sciences and applied technical fields. Examines distinctive features of materials, research, and information communication patterns in the various fields. Practice in question consultation and database searching will be included.

**Prerequisites:** SLIS 703, SLIS 707.

**SLIS 748 - Business Information Sources and Services (3 Credits)**

Coverage of the bibliographic and information systems relevant to contemporary managerial information needs, with emphasis on the literature of business and finance, and including statistical materials, literature guides, and investment services. Specialized problems related to the organization and operation of business information systems. Practice in question consultation and database searching will be included.

**Prerequisites:** SLIS 740.

**SLIS 749 - Health Sciences Information Resources (3 Credits)**

Characteristics and use of print and computer-based materials in the health sciences and for general reference librarians.

**SLIS 750 - Information and Records Management (3 Credits)**

An introduction to the role and functions of the information manager in organizations with emphases on use, retention, and management of information and records.

**Prerequisites:** SLIS 701.

**SLIS 751 - Libraries, Literacy, and Literature (3 Credits)**

Ways in which libraries and librarians become more effective providers and partners in the literacy movement.

**Prerequisites:** SLIS 701.

**SLIS 752 - Diversity in Libraries (3 Credits)**

Nontraditional library users in all types of libraries. Literacy programs, disabled and/or institutionalized persons, older adults, and members of selected ethnic groups.

**SLIS 753 - Seminar in Information Services (3 Credits)**

Planning and evaluating information services. Emphasis on policy and decision making regarding current issues.

**SLIS 754 - Library Programming for Children and Young Adults (3 Credits)**

The nature, philosophy, and development of non-curricular programs for children and young adults in the school and public library. Among the types of programs to be discussed are storytelling, film programs, reading programs, programs for parents, and other activities associated with library service to young people. Students will study the principles and problems involved in designing, implementing, and evaluating programs of this nature.

**SLIS 755 - Popular Materials and Programming for Adults (3 Credits)**

Materials popular with adult readers and programs utilizing those materials. Extensive reading and experience in planning and presenting programs.

**SLIS 756 - Children's Materials (3 Credits)**

A study of materials intended for children of elementary school age (6-13) with emphasis on the process of evaluating them to meet the educational, cultural, and recreational needs of children.

**SLIS 757 - Young Adult Materials (3 Credits)**

A study of materials for young adults (13-19) with emphasis on the process of evaluating them to meet the educational, cultural, and recreational needs of young adults.

**SLIS 758 - Consumer Health Resources and Information Services (3 Credits)**

Concepts and current trends in the creation, implementation, and evaluation of adult consumer health resources and services, including consumer health informatics and e-health.

**SLIS 759 - Materials for Early Childhood (3 Credits)**

A study of picture books and audiovisual materials intended for the very young child through age 9 with emphasis on the process of evaluating these materials to meet the educational, cultural, and recreational needs of very young children.

**SLIS 760 - Materials and Services for Latino Youth (3 Credits)**

Introduces a wide range of print and nonprint materials appropriate for Latino youth. Provides resources for librarians and educators serving young Latinos literacy needs.

**SLIS 761 - Information Technologies in the School Library Program (3 Credits)**

Technology management, use of technology and nonprint resources, and their integration into the K-12 curriculum.

**Prerequisites:** SLIS 706.

**SLIS 765 - Planning Library Facilities (3 Credits)**

An introduction to the process of planning new and renovated spaces and facilities. Content covers roles of participants in planning preparation of building program and examines examples of recent buildings.

**Prerequisites:** SLIS 701, SLIS 704.

**SLIS 766 - Collection Development and Acquisitions (3 Credits)**

An examination of information agencies and their purposes, collections, collection policies, and acquisition procedures.

**Prerequisites:** SLIS 701.

**SLIS 767 - Management of Public Library Youth Services (3 Credits)**

Planning, implementation, and evaluation of public library services for children and young adults.

**Prerequisites:** SLIS 701.

**SLIS 768 - Problems in Library and Information Agency Administration (3 Credits)**

Examines in detail frequently occurring problems that require decision activity by library and information agency managers. May be repeated for credit as topics change.

**Prerequisites:** Completion of 9 semester hours of SLIS graduate-level classes.

**SLIS 770 - Design and Management of Databases (3 Credits)**

Databases used in libraries and other information agencies, including operational and functional design. Extensive hands-on evaluation of selected database software packages.

**Prerequisites:** SLIS 701, SLIS 707.

**SLIS 772 - Strategic Intelligence for Information Professionals (3 Credits)**

Principles and practices of information gathering and analysis of open source information, including competitive intelligence, environmental scanning, and issues management; information evaluation and synthesis; role of strategic intelligence in modern organizations.

**Prerequisites:** SLIS 740 or SLIS 748.

**SLIS 775 - Practicum in Organizing and Managing Web Resources (3 Credits)**

Concepts and practices necessary to organize and manage Web resources in libraries and in other information agencies.



**SLIS 776 - Web Technologies for Information Specialists (3 Credits)**

Evaluation and programming of Web technologies and related issues in libraries and in other information agencies.

**Prerequisites:** SLIS 775.

**SLIS 777 - Design and Management of Digital Image Collections (3 Credits)**

This course presents introductory concepts related to the creation, manipulation, and implementation of visual collections in various online environments. It identifies resources, procedures, and skills needed to successfully design, implement, and manage digital image collections in a collaborative environment.

**Prerequisites:** SLIS 706, passing of SLIS Technology Test.

**SLIS 778 - Seminar in Information Science (3 Credits)**

A critical examination of the principles, trends, and issues of modern information systems design and use.

**Prerequisite or Corequisite:** SLIS 707.

**SLIS 780 - Information Networks (3 Credits)**

Identification and evaluation of information networks in libraries and other information agencies. The nature of networks, including hardware and software applications.

**Prerequisites:** SLIS 701, SLIS 707.

**SLIS 787 - Seminar in Applied Information Systems for Information Specialists (3 Credits)**

Application, management and evaluation of information systems for libraries and other information agencies, including emerging technical, administrative and management issues related to these systems.

**Prerequisites:** SLIS 707.

**SLIS 791 - Study Abroad: Great Libraries of the World (3 Credits)**

Discussion and critical examination of selected topics of current international debate regarding information and related technologies. Specific topics to be identified by title. May be repeated three times for a maximum of 9 hours.

**SLIS 794 - Internship in Library and Information Science (3-6 Credits)**

Supervised field experience in library, media center, or other information agency relevant to student's professional goals.

**Prerequisites:** SLIS 701, SLIS 705, SLIS 707.

**SLIS 795 - Special Topics in International Information Issues (1-3 Credits)**

Discussion and critical examination of selected topics of current international debate regarding information and related technologies. Topics vary by title. May be repeated a maximum of 3 times.

**SLIS 796 - Independent Study in Library and Information Science (1-6 Credits)**

Independent study in an area of library and information science relevant to the student's professional goals.

**Prerequisites:** SLIS 701, SLIS 705, SLIS 707.

**SLIS 797 - Selected Topics in Librarianship and Information Services (1-3 Credits)**

Discussion and investigation of selected topics of current concern to the library and information profession. Specific topics to be identified by title.

**SLIS 798 - Specialist Project Preparation (3-6 Credits)**

**Prerequisite:** Specialist degree students only. Approval of the appropriate application for specialist project must be submitted early in the semester preceding enrollment.

**SLIS 801 - Research Issues in Library and Information Science (3 Credits)**

Seminar examining a range of issues, theories, and research questions that currently shape thinking and discourse in library and information science.

**SLIS 802 - Theory and Research Methods in Library and Information Science (3 Credits)**

Seminar exploring problems and issues in theory formulation and research methods, including quantitative, qualitative, and multi-method approaches. Not auditable.

**SLIS 803 - Information and Society (3 Credits)**

Seminar examining the historical and intellectual foundations of library and information science in relation to the nature and current roles of information organization and information transfer in societies. Not auditable.

**SLIS 804 - Preparation for Academic Careers in Library and Information Science (3 Credits)**

Seminar examining the history, trends, and current status of academic careers in library and information science, emphasizing knowledge and skills needed for successful teaching, scholarship, and service. Not auditable.

**SLIS 805 - Information Policy and Ethics (3 Credits)**

Seminar in the critical and analytical study of information policy and ethical issues at the individual, institutional, and international levels. Not auditable.

**SLIS 806 - Communication Processes and Information-Seeking Behavior (3 Credits)**

Seminar examining the characteristics of communication, human information interaction, and information-seeking behavior, with emphasis on social network models, and the relationship between information-seeking behaviors and the design of communication and information systems and services. Not auditable.

**SLIS 809 - Planning and Evaluating Colloquia In Library and Information Science (1 Credit)**

Involves students in planning, managing, and evaluating colloquia, including recruiting speakers, scheduling venues, attracting audiences, conducting the sessions, and evaluating the results. May be repeated up to three times for credit.

**SLIS 810 - Human Information Interactions and Cultural Institutions (3 Credits)**

Explores libraries and other cultural institutions as lifelong educational environments where complex human interactions take place. Over the past two years, the promising intersection of cultural organizations has been a topic of strong interest to practitioners and scholars associated with these institutions. This course introduces the interdisciplinary framework, social perspectives, and research methods required to development an understanding of this intersection, the changes that will be required as new technologies alter the way that people engage with these institutions, and the challenges that have begun to emerge as their boundaries become less defined. This type of interdisciplinary framework is needed to address these topics and address both the human information needs that impel cultural institutions and the steps and strategies by which these needs may be recognized and resolved in these information rich environments.

**SLIS 811 - Technologies in Cultural Institutions (3 Credits)**

This course provides an opportunity for doctoral students to explore the issues associated with the implementation, evaluation and management of various technologies found in cultural institutions. Students will gain practical experience working with different technologies through class demonstrations and will be exposed to different technical environments via class field trips.

**SLIS 899 - Dissertation Preparation (1-12 Credits)**

CL: 2020.

## Health Communication, Certificate (Library and Information Science)

### Learning Outcomes

- Students will demonstrate the ability to translate basic theories and frameworks of health and risk communication to the development of health communication campaigns to specific target audiences.
- Students will be able to explain the principles governing the selection and access of health information materials to serve the needs of diverse lay, professional, and cultural communities.
- Students will demonstrate an ability to develop, implement, and evaluate a health communication project for a specific target audience.

### Certificate Requirements (18 Hours)

The certificate program consists of 18 credit hours of required and elective course work in a specific area of health communication.

Students must complete a minimum of 18 graduate credits, including the following:

#### Core Courses (9 Hours)

Course	Title	Credits
HPEB 711	Applied Health Communication	3
SLIS 749	Health Sciences Information Resources	3
JOUR 702	Communication Theory	3
or JOUR 803	Seminar in Mass Communication Theory and Theory Construction	
<b>Total Credit Hours</b>		<b>9</b>

#### Internship or Independent Study (3 Hours)

Course	Title	Credits
SLIS 794	Internship in Library and Information Science	3-6
SLIS 796	Independent Study in Library and Information Science	1-6
<b>Total Credit Hours</b>		<b>4-12</b>

#### Additional Information

Each student's program of study will be tailored according to prior course work and the student's professional objectives. Students will select elective courses from an approved list in consultation with their faculty advisors.

## Library and Information Science, Certificate

### Program Description

The Certificate of Advanced Graduate Study in Library and Information Science is tailored to complement the Master of Library and Information Science program by providing post-Master's degree instruction designed to enhance the student's career opportunities in his or her chosen area of specialization. Completion of the Certificate of Graduate Study in Library and Information Science will acknowledge to the prospective employer the student's additional preparation for specific job responsibilities.

### Learning Outcomes

- Students will demonstrate an understanding of their professional development goals.
- Students will demonstrate an understanding of what specialized knowledge and/or skills are needed to meet their professional development goals.
- Students will demonstrate specialized knowledge and/or skills in a specific chosen area of the field.

### Academic Progress

Students must present a grade point average of at least 3.0 (B average) on all courses taken in the program at the time of graduation. Students who earn a grade below B on more than six hours of course work or a grade of D, F, WF, or U in any course will not be allowed to continue in the program. Students who receive a grade below C in a course cannot apply the course toward graduation. Students who receive a grade of D+ or D in a required course (i.e. joint program requirements or NCATE requirements) must retake the course to attain a grade of at least a C.

Additionally, Graduate School policy states that graduate students whose cumulative grade point average (GPA) drops below 3.00 will be placed on academic probation and allowed one calendar year to raise the GPA to at least 3.00. Students who do not reach a cumulative 3.00 GPA during this grace period will not be permitted to enroll for further graduate work.

Admission to the Certificate program is selective and based on the faculty's assessment of the applicant's aptitude for graduate study and potential contribution to the profession. The faculty take a holistic approach to the admissions process. Consequently, an applicant's entire file and interview are taken into consideration before an admission decision is made. The following materials are required for full consideration:

1. The School of Library and Information Science Supplemental Application (accessible through the Graduate School application), where applicants respond to statement provided;
2. Official transcripts from all other colleges or universities attended (whether or not a degree was earned);
3. Two letters of recommendation attending to your academic performance and/or job performance—letters from friends and relatives addressing personal attributes do not qualify;
4. A qualifying score on either the GRE or MAT—a previously earned master's degree may be accepted in lieu of a test score at the discretion of the admissions committee; and, if appropriate for applicants whose native language is not English, a qualifying score

on a test of English as another language and appropriate immigration documentation.

## Certificate Requirements (18 Hours)

For the Certificate of Advanced Graduate Study in Library and Information Science degree, an approved Program of Study with 18 semester hours of graduate course work must be completed with a minimum grade point ratio of 3.00 (B) overall. In partial fulfillment of the requirements for graduation, each student will submit an electronic portfolio documenting learning and professional growth during the Certificate program.

### Program of Study

Students may choose their elective courses in library and information science or a related discipline after consultation with an academic advisor. Each student's program of study will be tailored according to prior course work and the student's professional objectives. Courses which will be more than six years old at the time the Certificate is awarded may not be included on the student's Program of Study.

### Coursework

Course	Title	Credits
SLIS 794	Internship in Library and Information Science	3-6
Select 15 hours of electives		15
<b>Total Credit Hours</b>		<b>18-21</b>

### End-of-Program Portfolio

## Library and Information Science, M.L.I.S.

### Program Description

The Master of Library and Information Science degree is a program of basic professional education designed to prepare students for entry into positions in libraries and information centers in colleges, schools, communities, industries, and businesses.

### Learning Outcomes

- Upon completion of the MLIS program, students will demonstrate competency in information and its organization.
- Students will demonstrate competency in the provision of information services.
- Students will demonstrate competency in leadership and management in the LIS field.
- Students will demonstrate competency in research in the LIS field.
- Students will demonstrate competency in technology in the LIS field.
- Students will demonstrate an understanding of the importance of lifelong learning and professional development within the LIS field.

### Academic Progress

Students must present a grade point average of at least 3.0 (B average) on all courses taken in the program at the time of graduation. Students who earn a grade below B on more than six hours of course work or a grade of D, F, WF, or U in any course will not be allowed to continue in the program. Students who receive a grade below C in a course cannot apply the course toward graduation.

If a student is readmitted and received a grade of D+ or D in a required course, they must retake the course to attain a grade of at least C.

Courses which will be more than six years old at the time the MLIS is awarded may not be included on the student's Program of Study.

Additionally, Graduate School policy states that graduate students whose cumulative grade point average (GPA) drops below 3.00 will be placed on academic probation and allowed one calendar year to raise the GPA to at least 3.00. Students who do not reach a cumulative 3.00 GPA during this grace period will not be permitted to enroll for further graduate work.

Admission to the Master of Library and Information Science (M.L.I.S.) program is selective and based on the faculty's assessment of the applicant's aptitude for graduate study and potential contribution to the profession. The faculty take a holistic approach to the admissions process. Consequently, an applicant's entire file and interview are taken into consideration before an admission decision is made. The following materials are required for full consideration:

1. The School of Library and Information Science Supplemental Application (accessible through the Graduate School application), where applicants respond to statement provided;
2. Official transcripts from all other colleges or universities attended (whether or not a degree was earned);
3. Two letters of recommendation attending to your academic performance and/or job performance—letters from friends and relatives addressing personal attributes do not qualify;
4. A qualifying score on either the GRE or MAT—a previously earned master's degree may be accepted in lieu of a test score at the discretion of the admissions committee; and, if appropriate for applicants whose native language is not English, a qualifying score on a test of English as another language and appropriate immigration documentation.

### Degree Requirements (36 Hours)

For the Master of Library and Information Science degree, an approved program of at least 36 semester hours of graduate course work must be completed with a minimum grade point average of 3.00 (B) overall. Required courses and the technology competency requirement are designed to provide students with an understanding of the information profession. In partial fulfillment of the requirements for graduation, each student will submit an electronic portfolio documenting learning and professional growth during the MLIS program.

### Coursework

Course	Title	Credits
SLIS 701	Ethics, Values, and Foundational Principles of Library and Information Science Professions	3
SLIS 702	Community Engagement and Service	3
SLIS 703	Reference and Instruction	3
SLIS 704	Leadership in Information Organizations	3
SLIS 705	Research Design and Evaluation	3
SLIS 706	Information Organization and Access	3
Select 18 hours of electives		18
<b>Total Credit Hours</b>		<b>36</b>

**Students on the School Library track have a prescribed set of courses for certification.**

## End-of-Program Portfolio

### Program of Study

Students and their advisors will choose a minimum of 18 hours of elective courses. No more than six (6) hours can be below the 700-level and courses below the 600-level will not be accepted on the Program of Study. Elective courses in the School of Library and Information Science and other graduate departments may be used to develop a specialization in one or more areas or to provide a broad, general preparation for the information professions. A minimum of 18 graduate hours must be completed within the School. The remaining 18 hours may be taken in other related academic units of the University. Students have the option of transferring up to six semester hours of graduate course work from colleges or universities other than the University of South Carolina. Courses which will be more than six years old at the time the MLIS degree is awarded may not be included on the student's Program of Study.

## Library and Information Science, Ph.D.

Students must complete an approved program of 54 credit hours of 700- and 800-level courses beyond the master's level, including a minimum of 12 hours of dissertation preparation with a cumulative grade point average of 3.00 or above.

## Learning Outcomes

- Students will understand theory development and research methods and their application in the field of library and information science.
- Students will demonstrate familiarity with seminal and contemporary scholarship involving major library and information science theories, problems, and practices.
- Students will understand the theory, practice, resources, and technologies of college-level instruction, and demonstrate proficiency in instructional techniques.

## Degree Requirements (54 Post-Masters Hours)

### Core Courses (15 Hours)

Course	Title	Credits
SLIS 801	Research Issues in Library and Information Science	3
SLIS 802	Theory and Research Methods in Library and Information Science	3
SLIS 803	Information and Society	3
SLIS 804	Preparation for Academic Careers in Library and Information Science	3
SLIS 805	Information Policy and Ethics	3
<b>Total Credit Hours</b>		<b>15</b>

### Research Methods (6 Hours)

#### Qualitative Methods (3 hours)

Chosen from advisor-approved options such as the following:

Course	Title	Credits
EDFI 731	Qualitative Inquiry	3
ANTH 719	Field Problems in Ethnology	3

#### Quantitative Methods (3 Hours)

Chosen from advisor-approved options such as the following:

Course	Title	Credits
STAT 700	Applied Statistics I	3
STAT 701	Applied Statistics II	3

#### SLIS Electives (12 Hours)

Chosen from advisor-approved 800-level seminars or 700-level courses appropriate to research interests and the production of work designed for scholarly publication or presentation.

#### Cognate Courses (9 Hours)

Chosen from advisor-approved courses from another discipline related to the student's research interests (i.e., mass communication, sociology, education, anthropology, computer science, English, geography, history, marketing, philosophy, political science, psychology, public administration).

#### Comprehensive Written and Oral Examinations

#### Dissertation Preparation (12 Hours)

Course	Title	Credits
SLIS 899	Dissertation Preparation	12
<b>Total Credit Hours</b>		<b>12</b>

## Library and Information Science, S.L.I.S.

### Program Description

The Specialist program (SLIS) is a post-masters program for librarians, information managers and other related professionals who have worked in the field for at least two years to enhance their knowledge in selected areas of study.

### Learning Outcomes

- Students will demonstrate an understanding of their professional development goals.
- Students will demonstrate an understanding of what specialized knowledge and/or skills are needed to meet their professional development goals.
- Students will demonstrate specialized knowledge and/or skills in a specific chosen area of the field.

### Academic Progress

Students must present a grade point average of at least 3.0 (B average) on all courses taken in the program at the time of graduation. Students who earn a grade below B on more than six hours of course work or a grade of D, F, WF, or U in any course will not be allowed to continue in the program. Students who receive a grade below a C in a course cannot apply the course toward graduation. Students who receive a grade of D+ or D in a required course (i.e. joint program requirements or NCATE requirements) must retake the course to attain a grade of at least C.

Additionally, Graduate School policy states that graduate students whose cumulative grade point average (GPA) drops below a 3.0 will be placed on academic probation and allowed one calendar year to raise the GPA to at

least 3.00. Students who do not reach a cumulative 3.00 GPA during this grace period will not be permitted to enroll in further graduate work.

## Admissions Requirements

Admission to SLIS program is selective and based on the faculty's assessment of the applicant's aptitude for graduate study and potential contribution to the profession. The faculty take a holistic approach to the admissions process. Consequently, an applicant's entire file and interview are taken into consideration before an admission decision is made. The following materials are required for full consideration:

1. The School of Library and Information Science Supplemental Application (accessible through the Graduate School application), where applicants respond to statement provided;
2. Official transcripts from all other colleges or universities attended (whether or not a degree was earned) indicating an earned MLIS degree;
3. Two letters of recommendation attending to your academic performance and/or job performance—letters from friends and relatives addressing personal attributes do not qualify;
4. A qualifying score on either the GRE or MAT—a previously earned master's degree may be accepted in lieu of a test score at the discretion of the admissions committee; and, if appropriate for applicants whose native language is not English, a qualifying score on a test of English as another language and appropriate immigration documentation.

## Degree Requirements (30 Hours)

For the Specialist Degree in Library and Information Science degree, an approved Program of Study with 30 semester hours of graduate course work must be completed with a minimum grade point ration of 3.00 (B) overall. In partial fulfillment of the requirements for graduation, each student will submit an electronic portfolio documenting learning and professional growth during the Specialist program.

### Course Requirements

Course	Title	Credits
SLIS 794	Internship in Library and Information Science	3-6
SLIS 796	Independent Study in Library and Information Science	1-6
Select 24 hours of electives		24
<b>Total Credit Hours</b>		<b>28-36</b>

- Any student who has not taken SLIS 705 or shown evidence of having completed its equivalent, will be required to satisfactorily complete it (with a grade of B or better) in addition to the 30 minimum required hours. (A research methods course satisfactorily completed (with a grade of B or better) in another discipline may be substituted for SLIS 705 at the discretion of the advisor.)

## End-of-Program Portfolio Program of Study

A student may take up to 12 hours of course work in other colleges of the University upon approval by the advisor. No more than 9 of the total 30 hours of course work may be taken at another institution. Each student has the option of working with an advisor to complete a project adequate to the student's program of study that demonstrates the capacity to conduct, synthesize, and utilize research methodology in library and information science. The research project must be approved by the

advisor. A maximum of 9 hours of SLIS 796 and SLIS 798 may be taken for the Specialist Degree. No more than 6 of these hours may be directly related to the optional research project. At the discretion of the Advisor up to six hours of graduate work taken prior to admission to the program may be included in the Specialist Degree provided the following:

1. none of the courses exceed the six year limitation noted above;
2. any course work in library and information science must be taken at a school accredited by ALA or approved by NCATE;
3. course work must be germane to the student's program and make a direct contribution to it;
4. course(s) must show on an official transcript (and a copy of the official course description and/or syllabus provided) and not have been used to earn another degree;
5. grades for the course(s) must be a B or higher.

Courses which will be more than six years old at the time the Specialist Degree is awarded may not be included in the student's Program of Study.

# SCHOOL OF MEDICINE

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Executive Dean: Leslie W. Hall, M.D.

Senior Associate Dean: R. Caughman Taylor, M.D.

Associate Dean for Administration and Finance: Jeffrey L. Perkins, CHFP, CIA, CPA, MBA

Associate Dean for Clinical Affairs and Chief Medical Officer: William D. Anderson III, M.D.

Associate Dean for Continuous Professional Development and Strategic Affairs: Morris J. Blachman, Ph.D.

Associate Dean for Diversity and Inclusion: Carol L. McMahon, M.D.

Associate Dean for Graduate Medical Education: Katherine G. Stephens, Ph.D.

Associate Dean for Medical Education and Academic Affairs: Joshua T. Thornhill IV, M.D.

Associate Dean for Research and Graduate Education, Francis G. Spinale, M.D., Ph.D.

Assistant Dean for Clinical Curriculum and Assessment: Nancy A. Richeson, M.D.

Assistant Dean for Clinical Learning: Suzanne M. Bertollo, M.D.

Assistant Dean for Diversity and Inclusion: Robert M. Rhinehart, Ph.D.

Assistant Dean for Executive Affairs and Director of Library Services: Ruth A. Riley, M.S.

Assistant Dean for Information Technology and Chief Information Officer: D. Lindsie Cone, M.D.

Assistant Dean for Medical Student Education-Florence: William H. Hester, MD

Assistant Dean for Preclinical Curriculum: Lynn K. Thomas, Dr.PH.

Assistant Dean for Student Affairs: Donald J. Kenney, Ph.D.

Director of Admissions and Enrollment Services/Registrar: Robert M. Rhinehart, Ph.D.

Director of Medical Student Recruitment: James R. Stallworth, M.D.

A national leader in primary care medical education, the University of South Carolina School of Medicine also sponsors research and professional training focused on health care needs. In addition to the degree of Doctor of Medicine, the School of Medicine offers the Doctor of Philosophy degree with a major in biomedical science, the Master of Science degree with a major in biomedical science, the Master of Science in Genetic Counseling, the Master of Nurse Anesthesia, and the Master of Rehabilitation Counseling. A Certificate of Graduate Study in Psychiatric Rehabilitation has also been recently developed. An M.D./Ph.D. plan is available to students interested in careers in academic medicine or medical research. Correspondence concerning admission to the M.D. program and requests for the School of Medicine Bulletin should be addressed to:

School of Medicine

Office of Admissions  
University of South Carolina  
Columbia, SC 29208  
phone: 803-733-3325

Extensive information about the School of Medicine may be accessed via our Web site at <http://www.med.sc.edu/academic.asp>. ([https://sc.edu/study/colleges\\_schools/medicine/](https://sc.edu/study/colleges_schools/medicine/))

The school's administrative offices and basic science departments, which adjoin the Dorn VA Medical Center, have the advantages both of a beautiful, historic campus and well-equipped, modern laboratories and classrooms. Clinical departments are located on the rapidly expanding USC School of Medicine campus at Richland Medical Park in Columbia. Affiliated hospitals are the Byrnes Center for Geriatric Medicine, Education, and Research; the Dorn VA Medical Center; the Greenville Hospital System; the William S. Hall Psychiatric Institute; Moncrief Army Hospital; and Palmetto Richland Memorial Hospital. The school also collaborates closely with state agencies involved in health service delivery.

The University of South Carolina School of Medicine emphasizes research partnerships with affiliated hospitals and agencies to direct investigations to areas of greatest potential health benefit. The Centers of Research Excellence, a joint interdisciplinary venture with Palmetto Richland Memorial Hospital, includes research centers focused on cancer, cardiovascular disease and stroke, biomedical ethics, and primary health care. The Rural Primary Care Education Projects in Winnsboro, Kershaw, and Bennettsville, S.C., serve as centers for research on rural health care delivery, including telemedicine.

Innovative research on geriatric health care and child and community mental health issues is under way in cooperation with the Byrnes Center for Geriatric Medicine, Education, and Research and the William S. Hall Psychiatric Institute. Other areas of research strength include developmental disabilities, neuroscience, infectious diseases and immunology, inflammation, cardiovascular disease, cancer, tissue engineering and reproductive biology and endocrinology.

## Degree Programs

### Ph.D. and MS, Biomedical Science

Designed to train students for careers in teaching and research, the doctoral program in biomedical science is an interdisciplinary program with participation of the basic medical science Departments of Pharmacology, Physiology, and Neuroscience; Cell and Developmental Biology and Anatomy; and Pathology, Microbiology and Immunology.

The Biomedical Science PhD program at the School of Medicine is a component of the Integrated Biomedical Science Graduate Program at the University. This is a cooperation between the graduate programs of the Schools of Medicine and Public Health (Exercise Science), the Departments of Biology, Chemistry (Biochemistry) and Psychology and the South Carolina College of Pharmacy (Basic Pharmaceutical Science). Doctoral students are admitted to the integrated program and pursue required common core courses. They also carry out up to three laboratory rotations from a choice of more than 80 laboratories in the participating departments.

Students who choose to work with a mentor from the School of Medicine transfer to the School's Biomedical Science Graduate Program for the remainder of their graduate studies. The curriculum includes elective courses and seminars as well as supervised laboratory research. The

program's size of approximately 40 students provides extensive student/faculty interaction.

The purpose of the MS program is to provide broadly based interdisciplinary training in biomedical science to individuals who wish to expand or change their educational background and training to fulfill personal, pre-professional, or other career advancement goals. This two year program consists of one year of core courses with a heavy emphasis on biochemistry and molecular and cellular biology and one year of research which can either be laboratory- or library-based.

### **Certificate of Graduate Study in Biomedical Studies**

This one-year certificate program offers advanced graduate level training in a number of areas of biomedical sciences. It is designed for individuals seeking to enhance further their background in the basic health sciences prior to entry into professional schools including medical, dental, veterinary and osteopathic medicine schools. This program is not intended to provide undergraduate-level training in pre-medical course work needed to get admission into medical or professional schools. Instead, the program is designed to make postbaccalaureate students more competitive for admission through extensive graduate-level course work in the areas of physiology, pharmacology, biochemistry, cell and molecular biology, and neuroscience along with several other elective courses in the biomedical sciences. In addition, students will take courses in the ethics of medical science, MCAT (or similar) preparation and the preparation of a professional school application. Completion of the certificate requires 18 credit hours at the graduate level with required courses and additional electives.

### **Master of Science, Genetic Counseling**

The master's program in genetic counseling prepares genetic counselors to work with families at risk for genetic disease or birth defects. Graduates are also involved in teaching, research, and administrative aspects of this growing field. The curriculum includes course work and internship opportunities at the University of South Carolina, the Medical University of South Carolina, the Medical College of Georgia, the Greenwood Genetic Center, the Carolinas Medical Center in Charlotte, Savannah Perinatology Associates, UNC-Chapel Hill, Fullerton Genetic Center, the Duke University Medical Center, and Emory University. The first of its kind in the Southeast and one of only 32 in the United States, the genetic counseling master's program is accredited by the American Board of Genetic Counseling.

### **Master of Nurse Anesthesia**

The master's program in nurse anesthesia trains registered nurses to develop, implement, and evaluate the anesthetic care of patients. Cosponsored with Palmetto Richland Memorial Hospital and Greenville Hospital System University Medical Center, the program includes both course work and clinical experience. The master's program in nurse anesthesia is accredited by the Council on Accreditation of Nurse Anesthesia Educational Programs. Graduates are eligible for certification by the Council on Certification of Nurse Anesthetists.

### **Master of Rehabilitation Counseling**

The master's program in rehabilitation counseling provides professional training that prepares counselors to aid in the rehabilitation of disabled and disadvantaged persons. The curriculum includes both classroom and field-based experiences. Most graduates pursue careers with the S.C. Departments of Vocational Rehabilitation, Mental Health, and Disabilities and Special Needs, as well as various substance abuse programs. The program is accredited by the Commission on Rehabilitation Education.

### **Certificate of Graduate Study in Psychiatric Rehabilitation**

This cross-disciplinary program provides focused training in the area of psychiatric rehabilitation to meet a need for trained professionals with specialized knowledge and skills in assisting individuals with severe, long-term mental illnesses in securing and maintaining employment. Individuals with training in vocational rehabilitation have not typically been trained in working with mental illness, and individuals with expertise in mental health issues are not typically trained in vocational rehabilitation. This program presents a unique opportunity to address this need for professionals who are cross-trained to work with both mental health issues and vocational concerns. Key content areas of study in the certificate program include the characteristics of severe long-term mental illnesses, assessment, treatment, rehabilitation methods, and the recovery process. All course work is available on campus or online in distance education format.

### **Programs**

- Biomedical Sciences, M.S.
- Biomedical Sciences, Ph.D.
- Biomedical Studies, Certificate
- Counseling and Rehabilitation, M.A.
- Genetic Counseling, M.S.
- Medicine, M.D.
- Nurse Anesthesia, M.N.A.
- Nursing Anesthesia, D.N.P.
- Physician Assistant Studies M.S.P.A.S.
- Psychiatric Rehabilitation, Certificate

### **Biomedical Sciences, M.S.**

The Biomedical Science Graduate Program at the University of South Carolina School of Medicine offers a two year course of graduate study and significant research opportunities leading to the Master of Science (MS) degree with a major in biomedical science. Students have the option in this degree program of electing to complete a research-based thesis project or a non-thesis, coursework based program of study. Biomedical science is a multidisciplinary field of study aimed at advancing our knowledge of human disease. Scientists working in the USC SOM Biomedical Science program have diverse interests ranging from the study of molecular and cellular processes to the study of organ systems and whole organism functions. This interdisciplinary program prepares students for careers in biomedical fields including research positions in academia and industry. The MS degree is also ideal for students seeking advanced preparation for entry into professional (medical, dental, veterinary) schools. The program provides a broad foundation of knowledge in the basic medical sciences with an opportunity to focus further on a specific discipline(s) including immunology, neuroscience, cardiovascular biology, complimentary medicine and others.

The program is administered by the Biomedical Sciences Graduate Director in consultation with the Graduate Education Committee and the Biomedical Sciences Graduate Committee. These committees include faculty representatives from all of the School of Medicine Basic Science departments.

## Learning Outcomes

- Students will demonstrate an understanding of the scientific principles underlying biomedicine.
- Students will demonstrate an understanding of responsible conduct of research and ethical issues related to biomedical research including animal use human subjects in research data management collaborative science authorship (including plagiarism) conflicts of interest and peer review.
- Students will obtain entry into desired professional schools (medical dental graduate etc) or obtain desired employment in the biomedical field following graduation from the School of Medicine Biomedical Sciences MS program. While this outcome does not directly assess student knowledge or appropriateness of the curriculum it is an important measure of program success.

## Curriculum

The two year curriculum presents multiple training components designed to prepare students for a career in biomedical fields. In the first year of the two year program, there is a core of basic medical science courses together with multidisciplinary laboratory courses on research methods, facilities, and major equipment. These must be passed with a B average. The student will also participate in the Biomedical Sciences seminar programs that are designed to expose the student to modern, cutting-edge research in diverse biomedical areas.

In the second year, the MS student finishes required courses and performs research with a selected mentor. This can either be laboratory research or library research. The former leads to a thesis based upon a research hypothesis and data generated by the student. It is hoped that data generated by the student will also lead to the publication of research paper(s). The library-based research program requires the student to conduct an extensive literature review focused on a specific topic of interest. This leads to a thesis reviewing published literature and addressing current deficiencies in the area. It is hoped that this will culminate in the publication of a review paper by the student-mentor team. Opportunities for laboratory or library research are in such current areas of interest as cancer, reproductive biology, biodefense, complementary medicine, immunology, cell and molecular biology, neuroscience, microbiology, vision science, developmental biology, cardiovascular biology, AIDS and many more specialties. A detailed description of research activities within the biomedical science program may be found at the School of Medicine web site: <http://www.med.sc.edu>.

## Admission Standards

An applicant must have a baccalaureate degree or its equivalent from an accredited college or university. Undergraduate courses should include two semesters each of biology, physics, inorganic chemistry, and organic chemistry as well as some math (preferably through calculus).

Admission is determined by the Dean of The Graduate School after recommendation by the Director of the Biomedical Science Graduate Program and the Biomedical Science Graduate Advisory Committee. Criteria examined include an appraisal of courses taken, grades achieved, letters of recommendation, research experience, scores on the GRE, and the student's statement of purpose for graduate study. Applicants may designate a preferred academic specialization, but, because of the interdisciplinary nature of biomedical research, applications are reviewed

by all departmental directors; when possible, highly ranked applicants are invited to interview and visit the program.

An GPA average of 3.00 or better is required in both the major and overall. GRE scores on the general section above the 50th percentile are preferred.

## Application Information

Inquiries concerning admission and requests for printed program information should be directed to:

School of Medicine Office of Graduate Studies  
University of South Carolina  
Columbia, SC 29208  
telephone: 803-216-3321 or 803-216-3896  
e-mail: [biomedicalsciences@uscmcd.sc.edu](mailto:biomedicalsciences@uscmcd.sc.edu)

## Degree Requirements (32 Hours)

### Thesis Based MS Option

The MS degree in Biomedical Sciences requires the completion of a series of core courses in basicbiomedical topics as well as elective courses in focused areas. The MS degree in Biomedical Science requires at least 32 graduate credit hours, not more than 6 of which may be taken in thesis or dissertation research. Of the 32 credit hours, at least 50 percent must be in courses numbered 700 or above, exclusive of dissertation credit. Not more than 6 hours of independent study, special topics, or directed research other than dissertation research are permitted, unless justified by the program of study and approved by the Dean of Graduate Studies. The remainder of the requirements may include courses numbered from 500 to 699 taken for graduate credit. As many as 12 hours of study may be taken in USC schools and colleges other than the School of Medicine; this option provides great flexibility to individually tailor programs and draw on the wider resources of a comprehensive university. At least 10 credit hours of graduate study must be taken from basic medical science graduate courses.

The curriculum consists of required core courses in the basic medical sciences and additional elective courses that depend upon the interest and career goals of the student.

### Core Courses

Include the following:

Course	Title	Credits
Select one of the following:		3-4
BMSC 707	Biochemistry for the Biomedical Sciences	
BMSC 754	Biomedical Biochemistry I	
BIOL 717	Biological Chemistry	
BMSC 700	Biomedical Science Interdisciplinary Laboratory I	1
BMSC 706	Ethics in Biomedical Research	2
BMSC 801	Seminar in Biomedical Science	2
Select one of the following:		3-4
BMSC 702	Medical Cell Biology I	
BMSC 708	Human Cell and Molecular Biology for Biomedical Sciences	
BIOL 714	Advanced Cell Biology	

**Total Credit Hours**

**11-13**



*Comprehensive Assessment #* Students will demonstrate their ability to synthesize and integrate knowledge across the biomedical discipline via writing and oral defense of the thesis. While focused on a specific biomedical research topic, the thesis will incorporate ideas that span the biomedical field. Likewise, the thesis defense will address topics and issues that span the biomedical sciences including ethical issues in biomedical research. The thesis and defense thereof will be evaluated by the student's MS Advisory Committee.

### Non-Thesis Option

Students who elect to pursue the Biomedical Sciences MS degree, non-thesis option, are required to complete the core course work outlined for the thesis option but in lieu of 6 hours of research credit can take an additional 6 hours of course work to better prepare them for their ultimate career goals. This track requires at least 32 graduate credit hours. Of the 32 credit hours, at least 50 percent must be in courses numbered 700 or above, exclusive of dissertation credit. Not more than 6 hours of independent study or special topics are permitted, unless justified by the program of study and approved by the Dean of Graduate Studies. The remainder of the requirements may include courses numbered from 500 to 699 taken for graduate credit. As many as 12 hours of study may be taken in USC schools and colleges other than the School of Medicine; this option provides great flexibility to individually tailor programs and draw on the wider resources of a comprehensive university. At least 10 credit hours of graduate study must be taken from basic medical science graduate courses.

*Comprehensive Assessment #* Students will demonstrate their mastery of basic science concepts through the completion of a comprehensive exam given at the end of their course work. This exam will be assembled and evaluated by the student's MS Advisory Committee and should reflect the course work completed during the student's program of study.

## Biomedical Sciences, Ph.D.

The School of Medicine Biomedical Sciences Ph.D. program provides extensive educational opportunities with the ultimate goal of training the next generation of biomedical researchers and educators. Biomedical science is a multidisciplinary field of study encompassing biological and chemical disciplines focused on medical issues including enhanced understanding, detection and treatment of human disease. Scientists working in the School of Medicine Biomedical Sciences program have diverse interests ranging from the study of molecular and subcellular processes to the study of organ systems and whole organism functions. This interdisciplinary program prepares students for careers in biomedical research (both in academia and industry), by providing a broad foundation of knowledge in the basic medical sciences with expanded focus in a specific discipline that is emphasized in the dissertation research. This is accomplished through extensive didactic courses, development of career skills and training in research laboratories involved in diverse areas of biomedical science. The Biomedical Sciences Ph.D. program is administered by a Graduate Director with the consultation of the Graduate Curriculum Committee and the Graduate Advisory Committee. These committees have representatives from the three basic science departments in the School of Medicine.

The School of Medicine also participates in the Integrated Biomedical Science Program. This program is composed of faculty from across the University of South Carolina and includes departments from the School of Medicine, the College of Arts and Sciences and the School of Public Health. Students in this program take a common core curriculum in the

first year of the Ph.D. The students subsequently select a mentor and join one of the participating departments.

## Curriculum (62 Post-Baccalaureate Hours)

The curriculum includes multiple training components designed to prepare students for their dissertation research and for a career in biomedical science. The curriculum includes the following components:

- A core of basic science courses including advanced biochemistry, molecular biology and cell biology. The student can follow two tracks in the first year: basic molecular and cellular biology or neuroscience. The tracks are sufficiently similar in content such that a student may switch tracks, if required.
- A multidisciplinary laboratory course that exposes the student to research methods, facilities, and major equipment.
- An ethics course which addresses topics important in biomedical research including human subjects, animals in research, authorship, plagiarism and others.
- Advanced graduate course work in specific areas of specialization such as neuroscience, developmental biology, immunology, molecular biology and cancer, reproductive biology, and cardiovascular sciences.

The Biomedical Sciences Ph.D. degree requires a minimum of 62 credit hours beyond the baccalaureate and a minimum of 30 hours beyond the master's degree, including at least 12 credit hours of dissertation preparation. Course work includes 12 or more hours of a core curriculum and at least 9 elective credit hours in specific content areas of the concentration.

Transfer of graduate credits earned prior to admission into the doctoral program will be determined by the Graduate Advisory Committee within limits determined by The Graduate School.

## Admission Standards

An applicant must have a baccalaureate degree or its equivalent from an accredited college or university. Undergraduate courses should include two semesters each of biology, physics, inorganic chemistry, and organic chemistry as well as some math (preferably through calculus).

Admission to the Biomedical Sciences Ph.D. program is determined by the Dean of The Graduate School after recommendation by the Biomedical Sciences Graduate Director and the Biomedical Sciences Graduate Advisory Committee. Criteria examined include an appraisal of courses taken, grades achieved, letters of recommendation, research experience, scores on the GRE, and the student's statement of purpose for graduate study. A MS degree in a biomedical subject or biotechnology, although not required, makes an application more competitive. Applicants may designate a preferred academic specialization, but, because of the interdisciplinary nature of biomedical research, this is not necessary. Highly ranked domestic applicants are invited to interview and visit the university. Selected overseas applicants receive a telephone interview.

A GPA average of 3.00 or better is required in both the major and overall. GRE scores on the general section above the 50th percentile are also required. A minimum TOEFL score of 80 (out of 120) is also required for students whose native language is not English; however, a score of 100 or above is preferred and this level has been achieved by almost all students admitted recently.

## Application Information

Inquiries concerning admission and requests for printed program information should be directed to:

School of Medicine Office of Graduate Studies  
University of South Carolina  
Columbia, SC 29208  
telephone: 803-216-3321 or 803-216-3896  
e-mail: [biomedicalsciences@uscmcd.sc.edu](mailto:biomedicalsciences@uscmcd.sc.edu)

## Degree Requirements (62 Hours)

Graduate studies in biomedical science are designed to provide broad interdisciplinary training as well as specialization in an area of research. The Ph.D. degree requirements include an admission-to-candidacy examination, a comprehensive examination, participation in seminar programs and a dissertation based upon the student's research.

Following completion of required courses, the student must successfully complete a written comprehensive examination in the format of a research grant proposal. The student must also complete an oral defense of the comprehensive examination. The written and oral components will be evaluated by the student's Advisory Committee.

Ongoing seminar programs expose students to cutting-edge research by scientists at the School of Medicine, other departments of the University, and from around the nation and world. Students are required to present their own data in the Biomedical Sciences Graduate Seminar series. The students also are required to present once at the annual Morgan W. Newton Graduate Research Symposium. These seminars provide students with the opportunity to share their research findings with student and faculty colleagues. They also provide the student with valuable opportunities to enhance their oral presentation skills.

Biomedical science graduate students may elect to carry out research in such current areas of interest as cancer, reproductive biology, immunology, biodefense, complementary medicine, cell and molecular biology, neuroscience, microbiology, vision science, developmental biology, cardiovascular biology, AIDS and many more specialties. A detailed description of research activities within the biomedical science program may be found at the USC School of Medicine web site: [www.med.sc.edu](http://www.med.sc.edu). Research performed by the student culminates in the PhD dissertation. The dissertation research is presented at a seminar open to all students and faculty of the university. The student also must successfully complete an oral defense of the dissertation to their Advisory Committee.

## Molecular and Cellular Biology Concentration

The required core courses in the **molecular and cellular biology concentration** are:

Course	Title	Credits
BMSC 754 or BIOL 717	Biomedical Biochemistry I Biological Chemistry	4
BMSC 700	Biomedical Science Interdisciplinary Laboratory I	1
BMSC 706	Ethics in Biomedical Research	2
BMSC 801	Seminar in Biomedical Science	2
BMSC 702 or BIOL 714	Medical Cell Biology I Advanced Cell Biology	4
<b>Total Credit Hours</b>		<b>13</b>

## Neuroscience Concentration

The required core courses in the **neuroscience concentration** are:

Course	Title	Credits
PHPH 750	Fundamental Neuroscience I	4
PHPH 751	Fundamental Neuroscience II	4
BMSC 754	Biomedical Biochemistry I	4
BMSC 700	Biomedical Science Interdisciplinary Laboratory I	1
BMSC 706	Ethics in Biomedical Research	2
BMSC 801	Seminar in Biomedical Science	2
<b>Total Credit Hours</b>		<b>17</b>

## Biomedical Studies, Certificate

This one-year certificate program offers advanced graduate level training in a number of areas of biomedical sciences. It is designed for individuals seeking to enhance further their background in the basic health sciences prior to entry into professional schools including medical, dental, veterinary and osteopathic medicine schools. This program is not intended to provide undergraduate-level training in pre-medical course work needed to get admission into medical or professional schools. Instead, the program is designed to make post baccalaureate students more competitive for admission through extensive graduate-level course work in the areas of physiology, pharmacology, biochemistry, cell and molecular biology, and neuroscience along with several other elective courses in the biomedical sciences. In addition, students will take courses in the ethics of medical science, MCAT (or similar) preparation and the preparation of a professional school application. Completion of the certificate requires 18 credit hours at the graduate level with required courses and additional electives.

## Learning Outcomes

- The student will have a fundamental knowledge of current biochemistry, cell biology, molecular biology and physiology as taught in the GCBS program and as judged by earning of 3.0 average (on a 4.0 scale) by more than 80% of the students in the program.
- Be able to formulate ideas and solve problems in various sub-disciplines of basic biomedical sciences. This will lead to an enhanced ability to solve problems encountered in medical science.
- Demonstrate fundamental knowledge in other aspects of current trends in biomedical sciences through elective courses such as bioethics, medical genetics, etc.
- Successful completion of studies in GCBS, will allow the student to advance to their desired professional programs.

## Admission Requirements

Admission requires a baccalaureate degree with training in chemistry (particularly organic chemistry), biology and physics. A GPA of 2.8-3.0 or above and a GRE score of at least 1100 (V+Q), or an MCAT score of 21 or greater are also needed.

## Certificate Requirements (18 Hours)

### Required Courses

Include the following:

Course	Title	Credits
BMSC 707	Biochemistry for the Biomedical Sciences	3
BMSC 708	Human Cell and Molecular Biology for Biomedical Sciences	3
MCBA 710	Special Topics in Gross Anatomy	3
PHPH 701	Physiology for Health Sciences	6
<b>Total Credit Hours</b>		<b>15</b>

## Elective Courses

Include the following — one 3 credit course per semester:

Course	Title	Credits
BMSC 705	Medical Cell Biology II	4
CHEM 752	Regulation and Integration of Metabolism	3
PHPH 750	Fundamental Neuroscience I	4

## Counseling and Rehabilitation, M.A. Academic Program

The Master of Arts (M.A.) in Counseling and Rehabilitation is a 60 semester-credit hour program that prepares professional counselors. This MA program includes a specialization in clinical rehabilitation counseling, which equips graduates with specialized knowledge and skills related to disability and disadvantage-related issues.

### Learning Outcomes

- Students will adopt a professional counseling orientation commensurate to beginning counselors. (EDCE 510)
- Students will engage in ethical decision-making process that demonstrates an understanding of ethical principles and is beneficial to the client. (RCON 704)
- Students will describe how student-centered and client-centered cultural factors may influence the counseling relationship across a variety of helping settings. (RCON 605)
- Students will demonstrate ability to work effectively with diverse clients in a counseling setting. (RCON 711, RCON 883)
- Students will identify psychosocial and psychoeducational strategies for promoting resilience and optimal development and wellness across the lifespan. (EDPY 705, RCON 711, NPSY 757, Comprehensive assessment)
- Students will accurately describe theories and models of career development and career decision-making. (RCON 725, Comprehensive assessment)
- Students will apply a theory and/or model of career development to a client. (RCON 725, RCON 883)
- Students will demonstrate the intentional use of interviewing and basic counseling skills. (RCON 601, RCON 880)
- Students will discuss and demonstrate counseling theories and related techniques. (RCON 711, RCON 883)
- Students will demonstrate group leadership skills by planning and carrying out purposeful group counseling activities. (RCON 720, RCON 880)
- Students will select and describe assessment and testing techniques with specific counseling populations. (RCON 714, NPSY 758)

- Students will utilize the results of scholarly research to inform and adapt counseling practice. (RCON 700, RCON 702, Comprehensive examination)
- Students will identify and strategically utilize community services and resources related to the provision of individualized rehabilitation services. (RCON 734, Comprehensive assessment).
- Students will develop and implement individualized service plan for a person with a disability that reflects principles of client choice and self-determination and include theory-based and evidence-based counseling and rehabilitation services. (RCON 733, RCON 883)
- Students will demonstrate fundamental competencies in Addictions and Mental Health counseling. (NPSY 760, NPSY 757, NPSY 758)

## Clinical Rehabilitation Counseling

Graduates are specialized professionals who assist persons with physical, mental, developmental, cognitive, addictions-based and other disabilities, as well as other forms of disadvantage. They help these individuals deal with personal, interpersonal, and societal problems; plan careers; pursue educational goals; and find and maintain employment. The counseling process involves communication, goal setting, and facilitating personal growth or beneficial change through advocacy, psychological, vocational, social, and behavioral interventions. Clinical rehabilitation counselors also work with individuals, organizations, and advocacy groups that address environmental and social barriers that create obstacles for persons with disabilities. In effect, they build bridges between persons with disabilities, their families, communities, and work places. They also collaborate with physicians, psychologists, and others in assisting persons with disabilities in pursuing their educational, vocational, and independent-living goals. Because employment is a major focus for persons with disabilities, clinical rehabilitation counselors work closely with employers and representatives of the business community to identify job opportunities and to make work environments more accommodating.

Major employers of clinical rehabilitation counselors in South Carolina include both public and private agencies, hospitals, and behavioral care settings such as the South Carolina Department of Mental Health, the South Carolina Vocational Rehabilitation Department, and the South Carolina Commission for the Blind. Other employers include a variety of addictions treatment agencies, local hospitals, and other care settings. Clinical rehabilitation counselors also serve as consultants to educational institutions, insurance companies, and industry. The profession of clinical rehabilitation counseling also has an important role in providing rehabilitation and transition services for school-aged children and adolescents, with focuses on transitioning from high school to college, or from education to employment. Also, geriatric services are provided to older persons who are experiencing changing lifestyles and health problems. Increasingly, workers injured on the job receive rehabilitation counseling services through private rehabilitation companies and employers' in-house disability management and employee assistance programs. Persons who have severe disabilities that limit opportunities for full-time competitive employment may also be assisted through independent-living service programs and supported employment arrangements developed and provided by rehabilitation counselors.

## Program Accreditation

On July 1, 2017, the Council for Accreditation of Counseling & Related Educational Programs (CACREP) assumed responsibility for carrying out the mission and vision of the Council on Rehabilitation Education (CORE). All graduate programs that were formerly accredited by CORE

are now accredited by CACREP. The USC Rehabilitation Counseling Program's 48 credit hour degree was most recently accredited by CORE in 2012 and received a full 8-year accreditation (2012-2020). That program is accredited as a rehabilitation counseling program by CACREP through 2020 under the former CORE standards. The USC Rehabilitation Counseling Program intends to seek accreditation for the updated 60 credit hour program as a Clinical Rehabilitation Counseling program, under current CACREP standards, when the reaccreditation process begins in 2019.

## Credentialing Information

Program graduates are eligible to take the national certification exam administered by the Commission on Rehabilitation Counselor Certification (CRCC) and either the National Counselor Examination (NCE) or the National Clinical Mental Health Counseling Examination (NCMHCE) that leads to counselor licensure in South Carolina and several states. It is important to note that each state has its own licensing board with its own counselor licensure requirements. The program's website provides additional information about certification and licensure.

## Learning Community

The program utilizes a Learning Community approach to the professional development of clinical rehabilitation counselors. We believe that a diverse group of faculty and students working collaboratively to help students reach academic and professional goals best prepares students for success. We value diversity in age, gender, race and ethnicity, educational background, sexual orientation, ability status, and other multicultural characteristics. We encourage applications from all interested potential students, including persons from historically and typically underrepresented groups.

As a member of the clinical rehabilitation counseling Learning Community, students can expect to get to know the core counselor education program faculty as well as student peers. In addition to courses that meet in real-time and are open to both in-person and distance students, the program includes Learning Community in-person days during which faculty and students engage in hands-on learning and professional development.

## Additional Information

For additional information, please contact the Program Director or the Student Services Coordinator at 803-434-4296. You may also visit the program website ([http://sc.edu/study/colleges\\_schools/medicine/education/graduate\\_programs/rehabilitation\\_counseling/](http://sc.edu/study/colleges_schools/medicine/education/graduate_programs/rehabilitation_counseling/)).

## Admission Standards

Submitted materials, academic background and performance, work and volunteer experience, and personal interview findings are all considered in the admissions process. We consider the following information before inviting candidates for a personal interview:

- Bachelor's degree GPA
- GRE or MAT scores
- TOEFL scores (for international students)
- Two letters of reference
- Statement of intent that address why you want to pursue a career in rehabilitation counseling, relevant experience and plans for completing the program requirements

In making admissions decisions, we consider all factors listed above, as well as each applicant's potential for forming effective counseling relationships.

## How to Apply

Prospective students apply online through the USC Graduate School (<http://gradschool.sc.edu/apply.htm>). The program reviews admissions throughout the year and new students may begin their studies in Fall or in Spring semester. For additional information, please contact the Student Services Coordinator at 803-434-4296. You may also visit the program website ([http://sc.edu/study/colleges\\_schools/medicine/education/graduate\\_programs/rehabilitation\\_counseling/](http://sc.edu/study/colleges_schools/medicine/education/graduate_programs/rehabilitation_counseling/)).

## Minimum Degree Requirements (60 Hours)

Students complete a minimum of 60 semester credit hours of required coursework. Key content areas of study include professional counseling orientation and ethical practice, social and multicultural diversity, human growth and development, career development, counseling and helping relationships, group counseling and group work, assessment and testing, and research and program evaluation. Required coursework in clinical rehabilitation counseling, medical and psychosocial aspects of disability, rehabilitation assessment, the world of work, psychopathology, assessment of mental disorders, addictions counseling and rehabilitation, and professional issues in clinical rehabilitation is also included.

As part of the 60 credit hours, students complete a 150 hour practicum and a 600 hour internship in approved community agencies. Students must receive a passing grade on the pre-practicum assessment before advancing to practicum.

Students may individualize their professional preparation by electing to participate in student organizations at the university, state, and national levels and by working with faculty members on rehabilitation research projects.

Students must receive a passing grade on the comprehensive assessment project in the semester in which they intend to graduate.

## Curriculum

The 60-credit hour curriculum includes thirteen (13) required courses, three (3) clinical rehabilitation specialization courses, a practicum, an internship, and one (1) elective.

### Required Courses (39 Hours)

Course	Title	Credits
EDCE 510	Introduction to Counseling	3
RCON 605	Culture and Disability	3
EDPY 705	Human Growth and Development	3
RCON 725	Career Counseling Theories and the World of Work	3
RCON 601	Helping Relationships: Fundamentals of Counseling Practice	3
RCON 711	Rehabilitation Counseling Theories and Practice	3
RCON 720	Group Counseling in Rehabilitation Settings	3
RCON 714	Rehabilitation Assessment	3
RCON 702	Introduction to Rehabilitation Research and Program Evaluation	3

RCON 704	Ethics in Rehabilitation Counseling and Helping Relationships	3
NPSY 757	Psychopathology for Counselors	3
NPSY 758	Classification and Assessment of Mental Disorders	3
NPSY 760	Addictions Rehabilitation	3
<b>Total Credit Hours</b>		<b>39</b>

### Specialization Courses (9 Hours)

Course	Title	Credits
RCON 700	Foundations of Clinical Rehabilitation Counseling	3
RCON 733	Medical and Psychosocial Aspects of Disability	3
RCON 734	Professional Issues in Clinical Rehabilitation Counseling	3
<b>Total Credit Hours</b>		<b>9</b>

### Field Experiences (9 Hours)

Course	Title	Credits
RCON 880	Counseling Practicum in Clinical Rehabilitation	3
RCON 883	Internship in Clinical Rehabilitation Counseling	6
<b>Total Credit Hours</b>		<b>9</b>

### Electives (3 Hours)

A partial list of electives includes the following:

Course	Title	Credits
RHAB 540	Assistive and Adaptive Technology	3
RHAB 752	Disability and Sexuality	3
RHAB 753	Rehabilitation and Severe Disability	3
NPSY 761	Dual Diagnosis	3
NPSY 763	LGBT Issues Counseling and Rehabilitation	3

## Genetic Counseling, M.S.

Genetic counselors are specialized health professionals who counsel individuals and families about genetic conditions and birth defects. Counselors have initial contact with families and act as case managers and liaisons to the health care team throughout the evaluation process. Genetic counselors work with patients from varied sociocultural and educational backgrounds to obtain family history, assess psychosocial status, explain the ramifications of disorders, and provide support to assist in adjustment to the physical and emotional challenges of genetic diagnosis. Additionally, genetic counselors provide education to practicing professionals, health care students, and lay groups. Program administration, the development of new services, teaching, and research activities are often encompassed within the career.

The USC genetic counseling program began in 1985. One of 32 programs in the United States, it was the first program in the southeastern region. In 1991 the program received a rare Commendation for Excellence during the South Carolina Commission of Higher Education's review, citing program strengths that include: an enthusiastic faculty, Master of Science thesis research, and students who have proven to be professionally active after graduation. In the 1998 state review of graduate health degrees, the site visit team recommended another Commendation for Excellence. The Program was accredited by the American Board of Genetic Counseling in 2000 and reaccredited in 2006.

Six to eight students are accepted each year from an applicant pool of approximately 125. Since 1985, more than 150 genetic counselors have graduated from the program. Over half of the practicing graduates are serving in the Southeast.

## Learning Outcomes

- Students will be able to establish a mutually agreed upon genetic counseling agenda with the client.
- Students will be able to elicit an appropriate and inclusive family history, social and psychosocial history.
- Students will be able to convey genetic, medical, and technical information including, but not limited to, diagnosis, etiology, natural history, prognosis, and treatment/management of genetic conditions and/or birth defects to clients with a variety of educational, socioeconomic, and ethnocultural backgrounds. Can explain the technical and medical aspects of diagnostic and screening methods and reproductive options including associated risks, benefits, and limitations.
- Students will be able to understand, listen, communicate, and manage a genetic counseling case in a culturally responsive manner.
- Students will be able to document and present case information clearly and concisely, both orally and in writing, as appropriate to the audience.
- Students will be able to plan, organize, and conduct public and professional education programs on human genetics, patient care, and genetic counseling issues.
- Students will be able to assess and calculate genetic and teratogenic risks.
- Students will be able to identify, synthesize, organize and summarize pertinent medical and genetic information for use in genetic counseling.
- Students will be able to demonstrate successful case management skills. Can assess client understanding and response to information and its implications to modify a counseling session as needed.
- Students will be able to identify and access local, regional, and national resources and services.
- Students will be able to identify and access information resources pertinent to clinical genetics and counseling.
- Students will be able to: Establish rapport, identify major concerns, and respond to emerging issues of a client or family; Elicit and interpret individual and family experiences, behaviors, emotions, perceptions, and attitudes that clarify beliefs and values; Use a range of interviewing techniques, Provide short-term, client-centered counseling and psychological support; promote client decision-making in an unbiased, non-coercive manner; Establish and maintain inter- and interdisciplinary professional relationships to function as part of a health-care delivery team.
- Students will be able to act in accordance with the ethical, legal, and philosophical principles and values of the profession.
- Students will be able to serve as an advocate for clients.
- Students will be able to introduce research options and issues to clients and families.
- Students will be able to recognize his or her own limitations in knowledge and capabilities regarding medical, psychosocial, and ethnocultural issues and seek consultation or refer clients when needed. Students will be able to demonstrate initiative for continued professional growth.

## Clinical Rotation Facilities

The clinical rotation portion of the genetic counseling program provides a range of prenatal, pediatric, adult, and specialty clinical experiences required for the American Board of Genetic Counseling (ABGC) certification examination. The student begins the transition from theory to practice during a summer clinical placement. During the senior year, each student has the opportunity to rotate through four of the following sites:

- USC School of Medicine, Columbia, S.C.
- Medical University of South Carolina, Charleston, S.C.
- Greenwood Genetic Center, Greenwood, Greenville, and Columbia, S.C.
- Medical College of Georgia, Augusta, Ga.
- Carolinas Medical Center, Charlotte, N.C.
- Savannah Perinatology, Savannah, Ga.
- Duke University Medical Center, Durham, N.C.
- University of North Carolina Chapel Hill, N.C.
- Fullerton Genetics Center, Asheville, N.C.
- Emory University, Atlanta, Ga.

## Thesis Research

The field of genetic counseling has developed into a professional discipline of its own. As such, the capabilities of genetic counselors should include scientific evaluation of the tenets of genetic counseling and professional reporting of these studies. The student in genetic counseling is required to write a thesis based on original research. The resulting work is of publishable quality and is often presented at a national genetics society meeting.

## Comprehensive Assessment Description

The Master of Science Genetic Counseling Program supports the development of practice based competencies as defined by the American Board of Genetic Counseling. These competencies are required of an entry level genetic counselor and define the Learning Objectives of the Genetic Counseling Program.

The Genetic Counseling Program Comprehensive Assessment evaluates the Program Learning Objectives through assessments of the following three curricular areas that require the student to synthesize and integrate knowledge acquired in coursework and other learning experiences and to apply theory and principles to their professional development.

1. **First Year Learning Portfolio:** in the first year of graduate study, students maintain an electronic portfolio of clinical observation and reflection papers, first year annotated open reading assignment, family interview paper, service learning activities, extra-curricular education opportunities, etc. Each Portfolio is reviewed with application of a rubric that documents first year progress toward Learning Objectives.
2. **Clinical Rotation Evaluation:** second year students are assigned five clinical rotations in prenatal, pediatric and adult settings. Clinical rotation evaluation is performed by certified genetic professionals centered on the Learning Objectives. Students meet with the Program Director(s) at the close of each rotation at which time the clinical rotation evaluations and case logbooks are reviewed, documenting progress/attainment of the learning objectives.
3. **Master of Science Thesis:** students develop an original research project on a current aspect of genetic counseling/medical genetics and conduct, analyze and report on the findings, guided by their

thesis committee. The thesis is presented at the final academic meeting to the full Program faculty. The student's Thesis Advisor and Readers, the Program Director(s) and full faculty provide data on student achievement of Learning Objectives applicable to thesis research.

## Admission Standards

Applicants for the Master of Science in Genetic Counseling Program must have earned a baccalaureate degree at an accredited institution. Prerequisite course work includes: one year of general biology, one year of general chemistry, one semester of biochemistry, one semester of genetics, and one semester of statistics. Scores from the general aptitude test of the GRE are required. Subtest scores are invited but optional. Supporting material must include: undergraduate transcripts, three letters of recommendation, and a statement reflecting the student's interest and experience in the field. A personal interview with the admissions committee is required.

## Application Information

The application deadline is January 1. Extensive information for applicants is on the School of Medicine Web page, <http://geneticcounseling.med.sc.edu>.

## Degree Requirements (56 Hours)

This is a two-year program that includes course work, clinical rotations, and a research-based thesis. The program is one of several health professional degrees offered by the School of Medicine. The curriculum includes 56 credit hours. Of these, 42 hours are devoted to classroom study, the majority of which are designed specifically for the genetic counseling program. Clinical rotations in regional genetic centers provide 8 credit hours, while 6 hours of credit are awarded for Master of Science thesis research.

### Core Courses

Course	Title	Credits
HGEN 701	Introduction to Genetic Counseling	3
HGEN 702	Psychosocial Aspects of Genetic Counseling	3
HGEN 703	Approaches to Ethical Challenges in Genetic Counseling	1
HGEN 704	The Genetic Counseling Process	3
HGEN 705	Clinical Skills Seminar	1
HGEN 710	Genetic Counseling Methods	3
HGEN 715	Contemporary Issues in Genetic Counseling	1
HGEN 720	Medical Genetics	4
HGEN 725	Human Developmental Biology I	4
HGEN 726	Human Developmental Biology II	4
HGEN 730	Advanced Medical Genetics I	3
HGEN 731	Advanced Medical Genetics II	3
HGEN 735	Cancer Genetics and Genetic Counseling	3
HGEN 750	Summer Clinical Rotation	2
HGEN 760	Clinical Rotation I	3
HGEN 761	Clinical Rotation II	3
HGEN 799	Thesis Preparation	1-6
BIOL 667	Molecular and Genetic Mechanisms of Disease Pathogenesis	3

**Total Credit Hours**

**48-53**

## Medicine, M.D.

Correspondence concerning admission to the M.D. program and requests for the School of Medicine Bulletin should be addressed to:

School of Medicine  
Office of Admissions  
University of South Carolina  
Columbia, SC 29208  
Phone: 803-733-3325

Extensive information about the School of Medicine may be accessed via our website at <http://www.med.sc.edu>.

## Nurse Anesthesia, M.N.A.

The nurse anesthetist is a highly trained medical care specialist who, under the supervision of a physician, is responsible for the anesthesia requirements of patients in all areas of surgery. The nurse anesthetist develops, implements, and evaluates the anesthetic plan of care for individual patients and is a vital part of the health care team. The nurse anesthesia program at the University of South Carolina is accredited for the maximum 10-year period by the Council on Accreditation of Nurse Anesthesia Education Programs and prides itself on a very high graduation rate and excellent pass success on the certification exam. Through careful selection of applicants, quality instruction, and supportive environment, 95% of our admitted students succeed in completing the program and earning their Master's degree. All of the program graduates have passed the National Certification Examination of the Council on Certification of Nurse Anesthetists and have scored at or above the national average. The first-time rate for passing the Certification Exam has been 92% for the past five years. To date all graduates have found appropriate employment as Nurse Anesthetists.

The Masters of Nurse Anesthesia program is a cooperative program between the School of Medicine and its clinical training partner institutions, Palmetto Richland Hospital (PRH) in Columbia, SC and Greenville Hospital System University Medical Center (GHSUMC) in Greenville, SC. PRH began training nurse anesthetists in 1969 at the School of Nurse Anesthesia with involvement of School of Medicine faculty since 1986. A program leading to a Master of Nurse Anesthesia from University of South Carolina was accredited in 1993, and in 2010 GHSUMC was approved as an additional primary clinical site. Students may now complete their entire educational program either in Columbia or Greenville, with didactic educational content shared by two-way interactive videoconferencing between Columbia and Greenville classrooms.

## Learning Outcomes

- Knowledge of human anatomy, physiology, pathophysiology and pharmacology.
- Demonstrate knowledge of all the indications, contraindications, pharmacokinetics and pharmacodynamics of currently available anesthetic agents and drugs.
- Demonstrate knowledge of the anesthetic related indications in the care of specialties (Advanced Principles of Anesthesia) such as neurosurgery, pediatrics, obstetrics, and cardio-thoracic anesthesia.

## Admission Standards

1. a Bachelor of Science in Nursing degree from an NLN-accredited program or Bachelor of Science degree in a related science (official

transcripts from each school or college previously attended with degrees posted are required); a GPA of 3.00 or higher on a 4.00 scale is preferred; the average GPA for students admitted for the Class of 2013 was 3.56;

2. current licensure as a registered nurse in one of the 50 states; South Carolina licensure is required for matriculation;
3. GRE - a combined minimum verbal and quantitative score of 1000 or preferred; the average GRE for students admitted for the Class of 2013 was 518 verbal and 613 quantitative;
4. a minimum of one year full-time critical care nursing experience prior to the application deadline of May 1; clinical experience within the past three years is preferred and must be direct hands-on patient care in an intensive or critical care unit; alternate clinical experiences to substitute shall be evaluated upon request;
5. satisfactory completion and current documentation of Basic Life Support, Pediatric Advanced Life Support, and Advanced Cardiac Life Support;
6. letters of recommendation from two health care professionals familiar with the applicant's clinical experience; a letter from an immediate manager or supervisor is preferred;
7. a current resume.

Prerequisites must be met prior to an offer for interview. Admission is competitive and students are chosen on the basis of their academic record, employment history and performance, character, and general fitness for the study of nurse anesthesia. To be accepted, the applicant must interview and demonstrate evidence of good physical health, emotional stability, and personality considered necessary for successful performance as a nurse anesthetist. Applicants to the Master of Nurse Anesthesia program are recommended by an interview admissions committee composed of faculty from the USC School of Medicine, clinical coordinators, and nurse anesthesia students.

Final decision for admission is made by program faculty in conjunction with the University of South Carolina Graduate School.

## Application Information

Application deadline is May 1. Selected applicants will be scheduled for a personal interview with the admissions committee to be held in July and/or August of the year prior to the January orientation and start of the program in spring semester. Letters of appointment will be sent in August; these notified applicants are required to send a reply with their intentions concerning matriculation within two weeks of the letter of appointment. A \$250 nonrefundable deposit must accompany the letter of acceptance. This deposit will be applied to the first-year clinical fees when the student matriculates. For further questions pertaining to a career in nurse anesthesia, please contact Winston King, clinical director of the USC/PRMH Graduate Program in Nurse Anesthesia, at 803-434-6344 or e-mail [winston.king@uscmcd.sc.edu](mailto:winston.king@uscmcd.sc.edu).

For more detailed information on the application process and the Anesthesia program, visit our Web site at <http://anesthesia.med.sc.edu>.

## Curriculum and Degree Requirements (64 Hours)

Integration of clinical training with coursework is a key feature of the program with students beginning supervised clinical experience in the first semester. A state-of-art simulation laboratory provides an interactive system to teach both psychomotor clinical skills and crisis resource management. The curriculum consists of a 27-month

course of study including clinical training and didactic courses in physiology, pharmacology, principles of anesthesia, and others. To meet the criteria for graduation and to meet the requirements to write the Certification Exam from the Council on Certification, students participate in a minimum of 550 anesthesia cases covering a variety of clinical experiences, including general and regional anesthetics for pediatrics, obstetrics, geriatrics, cardiovascular-thoracic, neurological, plastic otolaryngology, ophthalmology, urology, orthopedics, and radiological procedures. The majority of clinical training occurs at PRH and GHSUMC, however clinical affiliations currently exist at several additional enrichment sites where students may rotate to gain more diverse clinical experience. Enrichment sites for PRH include Providence Hospital/Providence Heart Institute, Lexington Medical Center, Moncrief Army Hospital, Bon Secours St. Francis Hospital, Providence Northeast Hospital, Palmetto Health Baptist-Columbia, Kershaw County Medical Center, Anderson Area Medical Center, Oconee Memorial Hospital, Springs Hospital, and Conway Medical Center. Enrichment sites for GHSUMC include Cross Creek Surgery Center, Patewood Memorial Hospital, Patewood Outpatient Surgery Center, Hillcrest Memorial Hospital, and Greer Memorial Hospital.

## Required Courses

The following courses are required in the Masters of Nurse Anesthesia program:

Course	Title	Credits
PHPH 701	Physiology for Health Sciences	6
PHPH 705	Biomedical Pharmacology	6
PHPH 760	Clinical Problems in Anesthesia	1-3
PHPH 772	Seminar in Anesthesia	1-2
PHPH 775	Practicum I in Nurse Anesthesia	6
PHPH 791	Principles of Anesthesia I	1-5
PHPH 792	Principles of Anesthesia II	1-5
PHPH 795	Physical-Chemical Basis of Anesthetic Action	3
PHPH 797	Professional Aspects of Nurse Anesthesia	3
PHPH 798	Biomedical Sciences for Nurse Anesthesia	3
<b>Total Credit Hours</b>		<b>31-42</b>

## Self Evaluation Exam

Within the final 12 months of the program, all students complete the Self Evaluation Exam offered by the Council on Certification of Nurse Anesthetists. A minimum score of 350 on the SEE qualifies as satisfactory completion of the Comprehensive Exam.

# Nursing Anesthesia, D.N.A.P.

*Effective Summer 2020*

The nurse anesthetist is a highly trained medical care specialist who, under the supervision of a physician, is responsible for the anesthesia requirements of patients in all areas of surgery. The nurse anesthetist develops, implements, and evaluates the anesthetic plan of care for individual patients and is a vital part of the health care team. The nurse anesthesia program at the University of South Carolina is an accredited program by the Council on Accreditation of Nurse Anesthesia Education Programs and prides itself on a very high graduation rate and excellent pass success on the certification exam. Through careful selection of applicants, quality instruction, and supportive environment, 95% of our admitted students succeed in completing the program and earning their Doctoral degree. All of the

program graduates have passed the National Certification Examination of the Council on Certification of Nurse Anesthetists and have consistently scored at or above the national average. The first-time rate for passing the Certification Exam remains significantly above the national average. To date all graduates have found appropriate employment as Nurse Anesthetists.

The Doctorate of Nursing Practice program is a cooperative program between the School of Medicine Columbia and its clinical training partner institutions, Palmetto Health Richland (PHR) in Columbia, SC and Greenville Health System (GHS) in Greenville, SC. PHR began training nurse anesthetists in 1969 at the School of Nurse Anesthesia with involvement of School of Medicine (Columbia) faculty since 1986. A program leading to a Doctorate of Nursing Practice from University of South Carolina was accredited in 1993, and in 2010 GHS was approved as an additional required (primary) clinical site. Students may complete their entire educational program either in Columbia or Greenville sites, with didactic educational content shared by two-way synchronous interactive videoconferencing between Columbia and Greenville classrooms.

## Learning Outcomes

- Integrate understanding of concepts in human anatomy, physiology, pathophysiology and pharmacology to clinical practice.
- Exhibit evidence of knowledge of all the indications, contraindications, pharmacokinetics and pharmacodynamics of currently available anesthetic agents and drugs.
- Utilize knowledge of the anesthetic related indications in the care of specialties such as neurosurgery, pediatrics, obstetrics, and cardiothoracic anesthesia.
- Develop an evidence based project that demonstrates clinical scholarship supporting translation of knowledge into practice.

## Admissions

Prerequisites must be met prior to an offer for an interview. Admission is competitive and students are chosen on the basis of their academic record, employment history and performance, character, and general fitness for the study of nurse anesthesia. To be accepted, the applicant must interview and demonstrate evidence of good physical health, emotional stability, and personality considered necessary for successful performance as a nurse anesthetist. Applicants to the Graduate Program in Nurse Anesthesia are recommended by an interview admissions committee composed of faculty from the USC School of Medicine, clinical coordinators, and nurse anesthesia students.

Final decision for admission is made by program faculty in conjunction with the University of South Carolina Graduate School.

## Curriculum and Degree Requirements (110 Hours)

Integration of clinical training with coursework is a key feature of the program with students beginning supervised clinical experience in the third semester. A state-of-art simulation laboratory provides an interactive system to teach both psychomotor clinical skills and crisis resource management. The curriculum consists of a 36-month course of study including clinical training and didactic courses in physiology, pharmacology, principles of anesthesia, and others. To meet the criteria for graduation and to meet the requirements to sit for the Certification Exam from the Council on Certification, students participate in a minimum of 600 anesthesia cases covering a variety of clinical experiences, including general and regional anesthetics for



pediatrics, obstetrics, geriatrics, cardiovascular-thoracic, neurological, plastic otolaryngology, ophthalmology, urology, orthopedics, and radiological procedures. The majority of clinical training occurs at PHR and GHS, however clinical affiliations currently exist at several additional enrichment sites where students may rotate to gain more diverse clinical experience. Enrichment sites for PRH include Providence Hospital, Lexington Medical Center, Bon Secours St. Francis Hospital, Palmetto Health Parkridge Hospital, Palmetto Health Baptist-Columbia, Aiken Regional Medical Center, Anderson Area Medical Center, Oconee Memorial Hospital, Orangeburg Regional Hospital, and Conway Medical Center. Enrichment sites for GHSUMC include Cross Creek Surgery Center, Patewood Memorial Hospital, Patewood Outpatient Surgery Center, Hillcrest Memorial Hospital, Greer Memorial Hospital and Spartanburg Regional Medical Center.

In addition to the below requirements, all students must maintain a RN license in good standing, and ACLS, BLS, and PALS training must be current at the time of graduation. Students must meet all the requirements of the The National Board of Certification and Recertification for Nurse Anesthetists (NBCRNA) to be eligible to take the Certification exam upon graduation. These requirements can be found on the NBCRNA website.

## Required Courses

The following courses are required in the Graduate Program in Nurse Anesthesia:

Course	Title	Credits
PHPH 701	Physiology for Health Sciences	6
PHPH 705	Biomedical Pharmacology	6
ASNR 700	Introduction to Nurse Anesthesia Practice	2
ASNR 750	Health Policy, Ethics, and Legal Concepts for the DNP Nurse Anesthetist	3
ASNR 760	Clinical Topics in Nurse Anesthesia Practice I	2
ASNR 860	Clinical Topics in Nurse Anesthesia Practice II	2
ASNR 772	Seminar in Nurse Anesthesia I	2
ASNR 872	Seminar in Nurse Anesthesia II	2
ASNR 771	Introduction to Nurse Anesthesia Practicum	1
ASNR 777	Clinical Practicum III	6
ASNR 779	Clinical Practicum IV	6
ASNR 781	Clinical Practicum V	6
ASNR 761	Basic Anesthesia Principles I	4
ASNR 762	Basic Anesthesia Principles II	4
ASNR 763	Advanced Principles in Nurse Anesthesia Practice	4
ASNR 773	Clinical Practicum I	2
ASNR 775	Clinical Practicum II	6
ASNR 795	Application of Physical and Chemical Concepts in Nurse Anesthesia Practice	3
ASNR 797	Professional Role of the DNP Nurse Anesthetist I	3
ASNR 798	Application of Biomedical Concepts in Nurse Anesthesia Practice	3
ASNR 800	Integration of Concepts Across Nurse Anesthesia Practice	2
ASNR 801	Specialty Focus Simulation I	1
ASNR 802	Specialty Focus Simulation II	1
ASNR 896	Professional Role of the DNP Nurse Anesthetist II	3
ASNR 897	DNP Project I	2
ASNR 898	DNP Project II	1-2

NURS 717	Application of Basic Statistics for Nursing Practice & Service Management	3
NURS 790	Research Methods for Nursing	3
NURS 707	Advanced Pathophysiology for Nurses	3
NURS 704	Advanced Health Assessment and Diagnostic Reasoning	3
NURS 737	Foundations for DNP Development	3
NURS 805	Advanced Nursing Leadership	3
NURS 780	Organizational Theories and Systems in Healthcare	3
NURS 819	Evidence and Nursing Practice	3
NURS 781	Applied Technology in Health Care	3

**Total Credit Hours**

**110-111**

## Physician Assistant Studies, MSPAS

The University of South Carolina School of Medicine (USCSOM)-Columbia is the academic home of the Master's degree program for Physician Assistant (PA) education. Students will earn a **Master of Science in Physician Assistant Studies**, and graduates are prepared to become practicing Physician Assistants, once they successfully graduate and pass the national board certification exam (PANCE). Physician Assistants (PAs) are needed to address the growing needs for primary care in South Carolina and throughout the nation, especially in rural and underserved areas. In addition, PAs are able to assist with medical and surgical procedures in a cost-effective manner. The role of PAs is expanding as the population ages, and there is an increased need for additional healthcare providers. PA Programs are accredited by the Accreditation Review Commission on Education for the Physician Assistant (ARC-PA).

The Master of Science in Physician Assistant Studies program is a collaboration with USCSOM's clinical partners at Palmetto Health (PH) and the Dorn VA Medical Center (Dorn VAMC) in addition to numerous other healthcare organizations throughout the state. These clinical partners will be providing training in both eight core medical disciplines as well as providing several elective clinical rotation options in medical subspecialties.

## UofSC PA Program Competency List

### Knowledge

1. Possess medical knowledge to evaluate and manage medical and surgical conditions of patients of all ages.
2. Possess pharmacology knowledge to prescribe medications appropriately bearing in mind patient safety, cost, and potential for abuse.

### Interpersonal Skills

1. Elicit an accurate and appropriate problem-focused or comprehensive medical history using appropriate patient-centered interpersonal communication (verbal and non-verbal).
2. Utilizing the clinical presentation and diagnostic testing results, provide clear, concise oral presentations to other healthcare professionals and document accurate patient notes and orders.
3. Professionally exhibit interprofessional teamwork to improve patient care.

4. Provide relevant education to patients and families including treatment, compliance, available resources, and activity/lifestyle modification.

#### Clinical and Technical Skills

1. Perform a problem-focused or comprehensive physical exam directly related to the medical history and be able to recognize normal and abnormal health states.
2. Practice strategies to improve patient safety and decrease medical errors in patient care.
3. Demonstrate entry-level proficiency for technical skills and clinical procedures common to primary care practice.

#### Professional Behaviors

1. Reflect cultural awareness through exposure to diverse patient populations.
2. Develop life-long learning skills by using evidence-based medicine strategies and staying current with clinical practice guidelines.
3. Demonstrate the attributes of professional and ethical behavior to include resiliency, flexibility, adaptability, altruism, and ability to overcome adversity when evaluating and managing patients.

#### Clinical Reasoning and Problem Solving

1. Order and interpret appropriate, cost-effective laboratory or diagnostic studies to determine the differential diagnosis.
2. Demonstrate clinical reasoning, critical thinking, and problem-solving to develop differential diagnoses and select the most likely diagnosis.

## Program Goals

1. Enroll diverse and highly-qualified students who reflect the dynamic population of South Carolina and the nation.
2. Encourage life-long professional involvement, scholarly activity, leadership and service.
3. Maintain a level of first-time PANCE pass rates that meets or exceeds the national average.
4. Maintain an overall graduation rate of 94 percent (current Physician Assistant Education Association national average) or better for entering University of South Carolina Physician Assistant students.
5. Maintain an accredited program with an innovative curriculum that prepares entry-level graduates for the contemporary practice of medicine.

View and download the full version of the Physician Assistant Program Goals and Outcomes [pdf] ([https://sc.edu/study/colleges\\_schools/medicine/education/graduate\\_programs/physician\\_assistant/documents/pa\\_program\\_goals\\_2020\\_2.pdf](https://sc.edu/study/colleges_schools/medicine/education/graduate_programs/physician_assistant/documents/pa_program_goals_2020_2.pdf)).

## Admission Standards

An applicant must have a baccalaureate degree from a regionally accredited college or university located within the United States. Undergraduate coursework should include:

Course	Title	Credits
Human Anatomy and Physiology - Lecture		6
Human Anatomy and Physiology - Lab		2
Genetics		3

General Chemistry - Lecture	6
General Chemistry - Lab	2
Organic Chemistry - Lecture and Lab	4
Biochemistry	3
Microbiology	3
Introductory Psychology or higher	3
Statistics	3
Medical Terminology	1

Admission is determined by the PA Program Admissions Committee which consists of the PA Program Director, Medical Director and program faculty. Criteria examined include an appraisal of courses taken, grades achieved, letters of recommendation, research experience, scores on the GRE and the applicant's personal narrative. Preference in admittance is given to SC residents, USC alumni and US veterans.

An overall GPA average and an overall science GPA of 3.00 or better is required for consideration of admittance. GRE scores of 300 or higher are considered competitive for program admittance.

## Application Information

Inquiries concerning admission and requests for printed program information should be directed to:

University of South Carolina School of Medicine  
Columbia Physician Assistant Program  
Columbia, SC 29208  
Telephone: 803-216-3950  
email: [paprogram@uscmed.sc.edu](mailto:paprogram@uscmed.sc.edu)

## Curriculum (114 Hours)

The Masters Degree Program for Physician Assistants is a 27-month medical model curricular plan (7 semesters) with 114 total credit hours. The 27-month curricular plan includes a strong basic science foundation in physiology, human gross anatomy and genetics with a systems-based instructional approach to clinical medicine which includes instruction in the pathophysiology of diseases, ordering and interpretation and of diagnostic studies, as well as pharmacological and nonpharmacological treatment options. The final 12 months of the program consists of clinical training under experienced preceptors. The required practicums are derived from those used for training medical students in these venues, with a strong focus on primary care training. There are also many elements associated with professional development for PAs and interprofessional interactions, as well as understanding population health, quality care, and using evidenced-based practices. Some of the foundational content will be taught with other health professional (graduate or medical) students to forge interprofessional team concepts. Many of the courses involve hands-on preparation for clinical practice, including clinical skills training and training in new technologies using the USC SOM Simulation Center and Ultrasound Institute.

## PA Program Core Courses

Include the following:

Course	Title	Credits
PHPH 701	Physiology for Health Sciences	6
BMSC 740	Human Anatomy for Health Sciences	6
BMSC 742	Summative Experience for Physician Assistants	1
BMSC 743	Clinical Immersion for PAs	2

BMSC 744	Interprofessional Seminar for Health Professionals	1
BMSC 745	Medical Interviewing	2
BMSC 746	Physical Diagnosis	6
BMSC 747	Diagnostic Testing	2
BMSC 748	Surgery and Emergency Medicine	2
BMSC 749	Clinical Medicine-Across the Lifespan	2
BMSC 751	Behavioral Health	2
BMSC 752	Medical Law and Ethics	2
BMSC 753	Physician Assistant Professional Practice	1
BMSC 755	Medical Genetics and Laboratory Diagnostics	2
BMSC 756	Advancing Medical Practice through Research	3
BMSC 758	Internal Medicine	4
BMSC 759	Women's Health	4
BMSC 760	Pediatrics	4
BMSC 761	Behavioral Medicine	4
BMSC 762	General Surgery	4
BMSC 763	Emergency Medicine	4
BMSC 764	Orthopedics	4
BMSC 765	Practicum Elective	4
BMSC 766	PA Clinical Medicine and Therapeutics I	7
BMSC 767	PA Clinical Medicine and Therapeutics II	6
BMSC 768	PA Clinical Medicine and Therapeutics III	6
BMSC 769	PA Clinical Medicine and Therapeutics IV	7
BMSC 781	Family Medicine PA Program Practicum	4
BMSC 782	Family Medicine PA Program Practicum 2	4
BMSC 783	Physician Assistant Capstone Portfolio	1

**Total Credit Hours** 107

## Psychiatric Rehabilitation, Certificate

The Certificate of Graduate Study in Psychiatric Rehabilitation is an 18 credit-hour graduate certificate that is designed for post-bachelor's degree students and helping professionals who want to gain more knowledge and skills in working with individuals with severe mental illnesses. This program will give you the skills you need to provide superior client care.

The Certificate of Graduate Study in Psychiatric Rehabilitation is designed to meet the needs of students seeking a rehabilitation counseling or other related graduate degree, individuals seeking a specialty certificate (pre- or post-master's), and non-degree seeking students needing courses in psychiatric or mental health areas for continuing education credit. Courses within the certificate program are appropriate for rehabilitation counselors; counselors; social workers; educational psychologists; marriage and family counselors; majors in psychology, public health, sociology, nursing, or education; or individuals pursuing vocational or personal interests in the area of psychiatric rehabilitation or mental health.

### Program Goal

Students will be able to demonstrate specialized knowledge, skills, and values in working with individuals with psychiatric disabilities to help them achieve their personal, vocational, social, and independent living goals through counseling activity.

## Student Learning Outcomes

- Students will demonstrate knowledge, skills, and values related to the recovery-focused philosophy of psychiatric rehabilitation.
- Students will be able to describe the nature, course, and impact of psychiatric disorders and co-occurring substance use disorders.
- Students will be able to design individualized rehabilitation strategies that enhance an individual's ability to find and maintain satisfying employment.
- Students will be able to compare and contrast classroom-based learning of theory and principles to actual rehabilitation settings.

## Admission Standards

Applicants to the Certificate of Graduate Study in Psychiatric Rehabilitation must have earned a baccalaureate degree from an accredited institution. Admissions decisions are made on the basis of an overall evaluation of the applicant's preparation and ability to complete advanced study. Particular attention is paid to the applicant's work experience, practice interests, leadership ability, and motivation. Appropriate supporting documentation for admissions include: GRE scores or MAT scores, transcripts of all undergraduate and graduate course work, written statement of goals for graduate study, work and volunteer experience, and references. Applications are made electronically through the Graduate School and, when all materials are received, are reviewed by the Rehabilitation Counseling/Psychiatric Rehabilitation program faculty.

## Application Information

For additional information or application materials, contact Dr. Kerry Lachance or Mx. Brianna Newton at:

Certificate of Graduate Study in Psychiatric Rehabilitation  
Department of Neuropsychiatry and Behavioral Science  
University of South Carolina  
Clinical Education Building/Medical Park 15  
Suite B-20  
3555 Harden Street Extension  
Columbia, SC 29203  
Phone: 803-434-4296  
Fax: 803-434-4231  
e-mail: [brianna.newton@uscmed.sc.edu](mailto:brianna.newton@uscmed.sc.edu) or  
[kerry.lachance@uscmed.sc.edu](mailto:kerry.lachance@uscmed.sc.edu)

## Certificate Requirements (18 Hours)

All course work is available on campus or online in distance education format. Students electing a distance education option must have a computer with Internet access and be willing to attend an orientation meeting on campus at the beginning of study. Periodic in-person meetings, if requested by the course instructor, are also required.

The Certificate of Graduate Study in Psychiatric Rehabilitation requires 18 graduate credit hours. The curriculum includes three (3) required classes, two (2) electives, and one (1) field study.

### Required Courses (9 Hours)

Course	Title	Credits
NPSY 755	Fundamentals of Psychiatric Rehabilitation	3
NPSY 756	Vocational Implications of Psychiatric Disability	3

NPSY 761	Dual Diagnosis	3
<b>Total Credit Hours</b>		<b>9</b>

### Electives (6 Hours)

Course	Title	Credits
The following are recommended:		6
RCON 605	Culture and Disability	
NPSY 757	Psychopathology for Counselors	
NPSY 758	Classification and Assessment of Mental Disorders	
NPSY 760	Addictions Rehabilitation	
Any course from Rehabilitation Counseling Master's Program		
Another course as approved by the Program Director		
Students may choose from a broad list of electives including other graduate-level courses from the University of South Carolina or other accredited colleges or universities as approved by faculty.		
<b>Total Credit Hours</b>		<b>6</b>

### Field Study (3 Hours)

Course	Title	Credits
RHAB 890	Independent Study	1-3
<b>Total Credit Hours</b>		<b>1-3</b>

# SCHOOL OF MUSIC

Taylor Harding, *Dean*

Clifford Leaman, *Associate Dean and Director of Graduate Studies*

With approximately 350 undergraduate and 150 graduate students, the School of Music is a comprehensive professional school that offers the Certificate of Graduate Study in Music Performance; the Master of Music degree in performance, composition, conducting, jazz studies, music history, opera theatre, or piano pedagogy; the Master of Music Education degree; the Doctor of Musical Arts degree in performance, composition, conducting, or piano pedagogy; and the Doctor of Philosophy degree in music education. The Master of Arts in Teaching is offered in conjunction with the College of Education.

The Certificate of Graduate Study and all master's programs are available to applicants who have developed skills or knowledge in the major area beyond that expected of a typical undergraduate student. Both doctoral degrees are appropriate for those who desire to teach at the college level. The D.M.A. is a practice-oriented degree available to applicants who evidence not only exceptional abilities in the major area but well-developed musical intelligence and ongoing scholarly interest as well. The Ph.D. in music education is a research-oriented program, and applicants are expected to demonstrate a record of successful teaching experience in elementary or secondary schools, to offer evidence of academic excellence and ongoing scholarly inquiry, and to demonstrate the ability to conduct independent research. All master's and doctoral programs require a comprehensive, functional knowledge of music history, music literature, and music theory. Specific requirements for graduate music programs, as well as the policies and procedures that govern those programs, can be found in the document *Graduate Studies in Music*, which is available online. To contact the music graduate office, please e-mail [gradmusic@mozart.sc.edu](mailto:gradmusic@mozart.sc.edu) or call 803-777-4106. The School of Music is accredited by the National Association of Schools of Music.

## Music Education, M.M.Ed.

### Learning Outcomes

- Candidates will be able to demonstrate masters-level ability to develop logical arguments and conclusions in written form, and base their positions on findings in relevant research literature.
- Candidates will be able to demonstrate masters-level knowledge of music history, music theory, and compositional styles by identifying, describing, comparing, and contrasting musical works from the Antiquity through modern times.
- Candidates will be able to demonstrate masters-level knowledge by identifying, describing, and comparing specific methods of teaching and predominant educational theories, and the uses of these approaches in the area of specialty (band, orchestra, choir, elementary, Pre-K/early childhood).

### Admission

The general requirements for admission include the completion of an undergraduate degree in music education with a grade point average of 3.0 (4.0 scale) on relevant courses; valid teacher certificate; an interview; and fulfillment of the general requirements for admission to The Graduate School, including the submission of three recommendations. A list of additional admission materials specific to this program is available on the School of Music website. Unless they have completed an undergraduate

degree at an English-speaking institution, applicants whose native language is not English must submit a TOEFL score of at least 80 (internet-based score) or 570 (paper-based). Admission decisions are based upon the applicant's total portfolio with particular weight being given to knowledge of and experience in elementary or secondary music teaching, the audition (for those desiring to present a recital), or research/writing abilities (for those desiring to write a thesis).

## Degree Requirements (32 Hours)

Prior to taking any graduate music study, all M.M.Ed. students must take the Graduate Music Diagnostic Examination and, early in their studies, complete all deficiencies and required courses resulting from the exam. Degree candidates must complete a prescribed program of 32 hours of graduate work and successfully pass an oral comprehensive examination. In addition, candidates must complete a written thesis or present one full recital. Another option requires 35 hours but no thesis or recital.

### Major Area (15-18 Hours)

Course	Title	Credits
MUED 790	Principles of Music Education	3
MUED 795	Research in Music Education and Pedagogy	3
Select additional MUED courses		6
Select one of the following tracks:		3-6
<b>Thesis Track</b>		
MUSC 799	Thesis Preparation	
<b>Recital Track</b>		
MUSC 711	Graduate Applied Music	
MUSC 796	Solo Recital	
<b>35-Credit Track</b>		
Select additional MUED courses		
<b>Total Credit Hours</b>		<b>15-18</b>

### Other Studies in Music (15-17 Hours)

Course	Title	Credits
Advisor-approved Music Theory		3
Advisor-approved Music History		3
MUSC 734	Ensemble	1
Other 500 or 700-level courses in Music		
<b>Total Credit Hours</b>		<b>7</b>

## Music Education, Ph.D.

### Learning Outcomes

- Candidates will be able to identify, describe, and compare advanced elements of quantitative and qualitative research methods, including procedures for data collection, analysis and research design.
- Candidates will be able to identify and describe a pertinent research problem in music education, then develop and execute a research plan that includes a rationale, review of literature, methods for data collection, analysis, and interpretation of results, all of which will culminate in a completed dissertation.
- Candidates will be able to demonstrate doctoral-level knowledge of music history, music theory, and compositional styles by identifying, describing, comparing, and contrasting musical works from the Antiquity through modern times.

- Candidates will be able to identify, describe, and compare specific methods of teaching and predominant educational theories, as well as their use in modern music teaching settings.

## Admission

The general requirements for admission are: a master's degree in music education (or the equivalent); satisfactory score on the general section (verbal/quantitative/analytical) of the GRE or the Miller Analogies Test; master's thesis or equivalent demonstration of the ability to undertake and complete significant, original scholarly work; evidence of successful full-time teaching at the elementary or secondary level (a minimum of three years and an expectation of five years); an interview; and fulfillment of the general requirements for admission to The Graduate School, including the submission of three recommendations preferably written on School of Music forms. Applicants whose native language is not English are also required to submit a satisfactory score on the TOEFL or the IELTS Intl. Academic Course Type 2 exam. The minimum acceptable score on the TOEFL is 100 (internet-based) or 600 (paper-based). The minimum acceptable overall band score on the IELTS Intl. Academic Course Type 2 exam is 7. Applicants for the Doctor of Music Arts degree in composition, conducting, or performance whose TOEFL score is below the minimum acceptable score will be considered on an individual basis for conditional admission. Such applicants must demonstrate exceptional abilities in the major area and evidence through past academic or professional activities strong promise for future professional success. Additional admission requirements for specific areas are listed online. Admission decisions are based upon the applicant's total portfolio with particular weight being given to a record of successful music teaching at the elementary or secondary level and documented evidence of an ability to undertake and complete significant, independent research and writing.

## Degree Requirements (60 Post-Master's Hours)

Prior to taking any graduate music study, all doctoral students must take the Graduate Music Diagnostic Examination and, early in their studies, complete all deficiencies or courses resulting from the exam. Ph.D. students must be admitted to degree candidacy no later than the completion of the equivalent of two semesters of full-time study (12 credits total for graduate assistants and 18 credits total for others) and must complete a minimum of 60 credit hours of graduate work past the master's degree. At least 18 of the credit hours must be completed as part of doctoral residency (18 approved credits taken within a span of three consecutive semesters, with at least one semester being spent in full-time study on the Columbia campus) Prior to the scheduling of the comprehensive examination, degree candidates must have satisfied the proficiency in research methods by successfully completing MUED 795, MUED 796, EDRM 710, and EDRM 711. Doctoral candidates in music education must also complete written comprehensive examinations in music education (and any minor area) as well as an oral comprehensive examination that covers music education, music history/literature, music theory, and any doctoral minor. In addition, degree candidates must complete a written dissertation. The final doctoral requirement is the successful oral defense of the dissertation.

### Major Area (36 Hours)

Course	Title	Credits
MUED 790	Principles of Music Education	3
MUED 795	Research in Music Education and Pedagogy	3
MUED 796	Seminar in Music Education Research	3

MUED 890	Research Project	3
MUSC 899	Dissertation Preparation	12
Select MUED courses 700-level and above		12
<b>Total Credit Hours</b>		<b>36</b>

### Educational Research Core (9 Hours)

Course	Title	Credits
EDRM 710	Educational Statistics I	3
EDRM 711	Educational Statistics II	3
EDFI 731	Qualitative Inquiry	3
<b>Total Credit Hours</b>		<b>9</b>

### Other Studies in Music and Related Fields (15 Hours)

Minimum of 9 MUSC credits including the following:

- One advisor-approved course in Music History
- One advisor-approved course in Music Theory

Remaining credits will be selected from advisor-approved courses including applied music, ensembles, conducting, literature, and up to six hours of courses in related areas such as psychology and general education.

## Music Performance, Certificate

### Learning Outcome

- Candidates will perform two public recitals on their primary instrument or voice. The music selected for performance on these recitals will be reflective of post-baccalaureate musicianship and will represent styles, genres, and contexts deemed appropriate by the candidate's recital committee.

### Admission

Applicants must have earned an undergraduate degree (or the equivalent) in music performance, complete an on-campus audition (a recorded audition may be sufficient for consideration of provisional admission), and fulfill the general requirements for admission to The Graduate School, including the submission of three recommendations.

Applicants whose native language is not English are also required to submit a satisfactory score on the TOEFL or the IELTS Intl. Academic Course Type 2 exam. The minimum acceptable score on the TOEFL is 190 (computer-based) or 520 (paper-based). The minimum acceptable overall band score on the IELTS Intl. Academic Course Type 2 exam is 5.5. The program requires the completion of at least 18 approved graduate credits in music. Specific program requirements are listed online.

### Certificate Requirements (18 Hours)

Prior to taking any graduate music study, all doctoral students must take the Graduate Music Diagnostic Examination and, early in their studies, complete all deficiencies and required courses resulting from the exam. Doctoral students must be admitted to degree candidacy no later than the completion of the equivalent of two semesters of full-time study (12 credits total for graduate assistants and 18 credits total for others) and must complete a minimum of 48 credit hours of graduate work past the master's degree. At least 18 of the credit hours must be completed as part of doctoral residency (18 approved credits taken within a span of three consecutive semesters, with at least one semester being spent in full-time study on the Columbia campus). The residency requirement for

D.M.A. students in composition consists of a minimum of four full-time semesters of study on the Columbia campus, three of which must be consecutive. Prior to the scheduling of the comprehensive examination, degree candidates must have satisfied reading proficiency in a foreign language or completed an advisor-approved research course. Candidates for the D.M.A. must also complete written comprehensive examinations in the major area (and any minor area) as well as an oral comprehensive examination that covers the major area, music history/literature, music theory, and any doctoral minor. In addition, degree candidates must complete a dissertation or dissertation requirement, as follows: those in conducting or performance must present four full recitals and submit a research document; candidates in composition must complete a dissertation consisting of a musical work of major proportions and a research document; and candidates in piano pedagogy must complete a written dissertation or present two recitals and complete a written treatise. The final doctoral requirement is the successful oral defense of the dissertation or dissertation requirement.

### Major Area (10-12 Hours)

Course	Title	Credits
MUSC 711	Graduate Applied Music	1-4
MUSC 796	Solo Recital	1
Select one hour of the following:		1
MUSC 793	Opera Role	
MUSC 794	Concerto Recital	
MUSC 795	Chamber Recital	
MUSC 796	Solo Recital	

### Other Studies in Music (6-8 Hours)

Course	Title	Credits
Select advisor-approved music courses		6-8
<b>Total Credit Hours</b>		<b>6-8</b>

## Music Performance, D.M.A.

### Learning Outcomes

- Candidates will demonstrate ability to perform works from a variety of musical styles and genres and in a manner reflective of expert-level musicianship.
- Candidates will be able to demonstrate doctoral-level knowledge of music history, music theory, and compositional styles by identifying, describing, comparing, and contrasting musical works from the Antiquity through modern times.
- Candidates will demonstrate mastery of skills need to generate, write, and produce original research suitable for publication in their area of specialty.

## Admission

The general requirements for admission are: completion of master's degree in music (or the equivalent); evidence of an ability to pursue doctoral study in the desired area (see information online); and fulfillment of the general requirements for admission to The Graduate School, including the submission of three recommendations. Applicants whose native language is not English are also required to submit a satisfactory score on the TOEFL or the IELTS Intl. Academic Course Type 2 exam. Normally, the minimum acceptable score on the TOEFL is 100 (internet-based) or 600 (paper-based). The minimum acceptable overall band score on the IELTS Intl. Academic Course Type 2 exam is 7. Additional

admission requirements for specific areas are listed online. The D.M.A. in Performance is offered in selected areas. Admission decisions are based upon the applicant's total portfolio with particular weight being given to the audition (for those applying in the area of conducting, performance, or piano pedagogy).

## Degree Requirements (48 Post-Masters Hours)

Prior to taking any graduate music study, all doctoral students must take the Graduate Music Diagnostic Examination and, early in their studies, complete all deficiencies and required courses resulting from the exam. Doctoral students must be admitted to degree candidacy no later than the completion of the equivalent of two semesters of full-time study (12 credits total for graduate assistants and 18 credits total for others) and must complete a minimum of 48 credit hours of graduate work past the master's degree. At least 18 of the credit hours must be completed as part of doctoral residency (18 approved credits taken within a span of three consecutive semesters, with at least one semester being spent in full-time study on the Columbia campus). The residency requirement for D.M.A. students in composition consists of a minimum of four full-time semesters of study on the Columbia campus, three of which must be consecutive. Prior to the scheduling of the comprehensive examination, degree candidates must have satisfied reading proficiency in a foreign language or completed an advisor-approved research course. Candidates for the D.M.A. must also complete written comprehensive examinations in the major area (and any minor area) as well as an oral comprehensive examination that covers the major area, music history/literature, music theory, and any doctoral minor. In addition, degree candidates must complete a dissertation or dissertation requirement, as follows: those in conducting or performance must present four full recitals and submit a research document; candidates in composition must complete a dissertation consisting of a musical work of major proportions and a research document; and candidates in piano pedagogy must complete a written dissertation or present two recitals and complete a written treatise. The final doctoral requirement is the successful oral defense of the dissertation or dissertation requirement.

### Major Area (22-26 Hours)

Course	Title	Credits
MUSC 811		1-4
MUSC 740	Music Literature	1-3
	Pedagogy	2-4
MUSC 735		1-2
MUSC 891	Recital Preparation	1-3
MUSC 897	Document Preparation	2
MUSC 896	Solo Recital	1
Select one hour of the following:		1
MUSC 892	Lecture Recital	
MUSC 893	Opera/Oratorio Role	
MUSC 894	Concerto Recital	
MUSC 895	Chamber Recital	

**Total Credit Hours** 10-20

### Other Studies in Music (22-26 Hours)

Course	Title	Credits
MUSC 747	Advanced Music Research	2
MUSC 734	Ensemble	1

Select advisor-approved 700-level Music Theory courses	9
Select advisor-approved 700-level Music History courses	6
Select advisor-approved 700-level music courses (not major area)	5-9
<b>Total Credit Hours</b>	<b>23-27</b>

## Music Performance, M.M.

### Learning Outcomes

- Candidates will demonstrate the ability to perform musical works representative of a wide array of music styles and genres, and do so in a manner commensurate with masters-degree level musicianship.
- Candidates will be able to demonstrate masters-level knowledge of music history, music theory, and compositional styles by identifying, describing, comparing, and contrasting musical works from the Antiquity through modern times.
- Candidates will be able to demonstrate masters-level knowledge of their primary instrument or voice (including instrument history, repertoire, notable composers, and renowned pedagogues) by identifying, describing, comparing, and contrasting these elements in relation to contemporary practice.

### Admission

The general requirements for admission include the completion of an undergraduate degree in music (or the equivalent) with a grade point average of 3.0 (4.0 scale) on relevant courses, demonstration of excellent music performance skills through audition, and fulfillment of the general requirements for admission to The Graduate School, including the submission of three recommendations. A list of additional admission materials specific to this program is available on the School of Music website. Applicants whose native language is not English are also required to submit a satisfactory score on the TOEFL or the IELTS Intl. Academic Course Type 2 exam. Normally, the minimum acceptable score on the TOEFL is 80 (internet-based) or 570 (paper-based). The minimum acceptable overall band score on the IELTS Intl. Academic Course Type 2 exam is 6.5. Applicants for the Master of Music degree whose TOEFL/IELTS score is below the normal minimum standard will be considered on an individual basis for conditional admission. Such applicants must demonstrate exceptional abilities in the major area and evidence through past academic or professional activities strong promise for future professional success. Admission decisions are based upon the applicant's total application portfolio.

### Degree Requirements (32 Hours)

Prior to taking any graduate music study, all master's students must take the Graduate Music Diagnostic Examination, and, early in their studies, complete all deficiencies and required courses resulting from the exam. Degree candidates must complete a prescribed program of 32 hours of graduate work and successfully pass an oral comprehensive examination. In addition, candidates in conducting or performance must present one full recital, and guitarists must also perform a concerto or chamber recital; candidates in composition must complete a thesis consisting of a musical work of major proportions; candidates in music history or music theory must complete a written thesis; and candidates in piano pedagogy must present a solo recital or complete a written thesis. Specific program requirements are listed online.

### Degree Requirements - No Concentration

#### Major Area (12-15 Hours)

Course	Title	Credits
MUSC 711	Graduate Applied Music	1-4
MUSC 796	Solo Recital	1
MUSC 735		

#### Courses Selected from the Following (0-6 Hours)

- Area Literature  
and
- Pedagogy

#### Other Studies in Music (17-20 Hours)

Course	Title	Credits
MUSC 707	Music Bibliography and Research	2
Select advisor-approved Music History courses		6
Select advisor-approved Music Theory courses		6
MUSC 734	Ensemble	1
Select advisor-approved Music courses		3-6
<b>Total Credit Hours</b>		<b>18-21</b>

### Degree Requirements - Community Engagement Concentration

#### Major Area (12-15 Hours)

Course	Title	Credits
MUSC 711	Graduate Applied Music	1-4
MUSC 796	Solo Recital	1
MUSC 735		

#### Courses Selected from: (0-6 Hours)

- Area Literature  
and
- Pedagogy

#### Concentration Required Courses (9 Hours)

Course	Title	Credits
MUSC 595	Community Engagement Through Music	2
MUSC 795	Chamber Recital	1
Select six hours of the following Music Entrepreneurship Courses:		6
MUSC 580	Music & Arts Entrepreneurship	
MUSC 582	Music and Money	
MUSC 590	Seminar in Music Entrepreneurship	
MUSC 592	21st Century Musician	
MUSC 593	Arts Marketing	
<b>Total Credit Hours</b>		<b>9</b>

#### Other Studies in Music (10-11 Hours)

Course	Title	Credits
Select advisor-approved Music History course		3
Select advisor-approved Music Theory course		3
MUSC 734	Ensemble	0-1
or MUSC 735		
Select advisor-approved Music courses		2-3
<b>Total Credit Hours</b>		<b>8-10</b>



## Music, D.M.A., Composition

### Learning Outcomes

- Candidates will create original works of significant duration and scope, reflective of doctoral-level compositional ability.
- Candidates will be able to demonstrate doctoral-level knowledge of music history, music theory, and compositional styles by identifying, describing, comparing, and contrasting musical works from the Antiquity through modern times.
- Candidates will demonstrate mastery of skills need to generate, write, and produce original research suitable for publication in their area of specialty.

### Admission

The general requirements for admission are: completion of a master's degree in music (or the equivalent); evidence of an ability to pursue doctoral study in the desired area (see information online); and fulfillment of the general requirements for admission to The Graduate School, including the submission of three recommendations. Applicants whose native language is not English are also required to submit a satisfactory score on the TOEFL or the IELTS Intl. Academic Course Type 2 exam. Normally, the minimum acceptable score on the TOEFL is 100 (internet-based test) or 600 (paper-based). The minimum acceptable overall band score on the IELTS Intl. Academic Course Type 2 exam is 7. Additional admission requirements for specific areas are listed online. The D.M.A. in Performance is offered in selected areas. Admission decisions are based upon the applicant's total portfolio with particular weight being given to composing experience.

### Degree Requirements (48 Post-Masters Hours)

Prior to taking any graduate music study, all doctoral students must take the Graduate Music Diagnostic Examination and, early in their studies, complete all deficiencies and required courses resulting from the exam. Doctoral students must be admitted to degree candidacy no later than the completion of the equivalent of two semesters of full-time study (12 credits total for graduate assistants and 18 credits total for others) and must complete a minimum of 48 credit hours of graduate work past the master's degree. At least 18 of the credit hours must be completed as part of doctoral residency (18 approved credits taken within a span of three consecutive semesters, with at least one semester being spent in full-time study on the Columbia campus). The residency requirement for D.M.A. students in composition consists of a minimum of four full-time semesters of study on the Columbia campus, three of which must be consecutive. Prior to the scheduling of the comprehensive examination, degree candidates must have satisfied reading proficiency in a foreign language or completed an advisor-approved research course. Candidates for the D.M.A. must also complete written comprehensive examinations in the major area (and any minor area) as well as an oral comprehensive examination that covers the major area, music history/literature, music theory, and any doctoral minor. In addition, degree candidates must complete a dissertation or dissertation requirement, as follows: those in conducting or performance must present four full recitals and submit a research document; candidates in composition must complete a dissertation consisting of a musical work of major proportions and a research document; and candidates in piano pedagogy must complete a written dissertation or present two recitals and complete a written

treatise. The final doctoral requirement is the successful oral defense of the dissertation or dissertation requirement.

### Major Area (30 Hours)

Course	Title	Credits
MUSC 816	Composition <sup>1</sup>	1-3
MUSC 890	Composition Recital	1
MUSC 897	Document Preparation	1
Select two of the following:		6
MUSC 717	Advanced Orchestration	
MUSC 737	Advanced Projects in Computer Music	
MUSC 816	Composition	

<sup>1</sup> MUSC 816 is a 3-credit course during Fall and Spring terms, and a 1-credit course during either Summer term.

### Doctoral Minor (12 Hours)

Course	Title	Credits
Select advisor-approved related 700-level courses in Music Theory, Music History, Technology, Performance		12
<b>Total Credit Hours</b>		<b>12</b>

### Other Studies in Music (6 Hours)

Course	Title	Credits
Select six hours of 700-level courses		6
<b>Total Credit Hours</b>		<b>6</b>

## Music, D.M.A., Conducting

### Learning Outcomes

- Candidates will demonstrate ability to conduct ensembles performing a wide array of musical styles reflective of doctoral-level work
- Candidates will be able to demonstrate doctoral-level knowledge of music history, music theory, and compositional styles by identifying, describing, comparing, and contrasting musical works from the Antiquity through modern times.
- Candidates will demonstrate understanding of research methods and scholarly writing.

### Admission

The general requirements for admission are: completion of master's degree in music (or the equivalent); evidence of an ability to pursue doctoral study in the desired area (see information online); and fulfillment of the general requirements for admission to The Graduate School, including the submission of three recommendations. Applicants whose native language is not English are also required to submit a satisfactory score on the TOEFL or the IELTS Intl. Academic Course Type 2 exam. Normally, the minimum acceptable score on the TOEFL is 100 (internet-based) or 600 (paper-based). The minimum acceptable overall band score on the IELTS Intl. Academic Course Type 2 exam is 7. Additional admission requirements for specific areas are listed online. The D.M.A. in Performance is offered in selected areas. Admission decisions are based upon the applicant's total portfolio with particular weight being given to the audition (for those applying in the area of conducting, performance, or piano pedagogy).

## Degree Requirements (48 Post-Masters Hours)

Prior to taking any graduate music study, all doctoral students must take the Graduate Music Diagnostic Examination and, early in their studies, complete all deficiencies and required courses resulting from the exam. Doctoral students must be admitted to degree candidacy no later than the completion of the equivalent of two semesters of full-time study (12 credits total for graduate assistants and 18 credits total for others) and must complete a minimum of 48 credit hours of graduate work past the master's degree. At least 18 of the credit hours must be completed as part of doctoral residency (18 approved credits taken within a span of three consecutive semesters, with at least one semester being spent in full-time study on the Columbia campus). The residency requirement for D.M.A. students in composition consists of a minimum of four full-time semesters of study on the Columbia campus, three of which must be consecutive. Prior to the scheduling of the comprehensive examination, degree candidates must have satisfied reading proficiency in a foreign language or completed an advisor-approved research course. Candidates for the D.M.A. must also complete written comprehensive examinations in the major area (and any minor area) as well as an oral comprehensive examination that covers the major area, music history/literature, music theory, and any doctoral minor. In addition, degree candidates must complete a dissertation or dissertation requirement, as follows: those in conducting or performance must present four full recitals and submit a research document; candidates in composition must complete a dissertation consisting of a musical work of major proportions and a research document; and candidates in piano pedagogy must complete a written dissertation or present two recitals and complete a written treatise. The final doctoral requirement is the successful oral defense of the dissertation or dissertation requirement.

### Major Area (26 Hours)

Course	Title	Credits
MUSC 891	Recital Preparation	1-3
MUSC 897	Document Preparation	2

#### Doctoral Applied Study

Select six hours of the following: 6

MUSC 811Y	Doctoral Applied Music/Conducting	
MUSC 733	Advanced Conducting	
MUSC 736	Conductors Institute	

Select eight hours of the following courses: 8

Literature		
Pedagogy		
Score-reading		
Applied Conducting		

#### Recital Courses

MUSC 892	Lecture Recital	1
MUSC 896	Solo Recital	1

### Other Studies in Music (22 Hours)

Course	Title	Credits
MUSC 747	Advanced Music Research	2
MUSC 734	Ensemble	0-1
Select advisor-approved 700-level Music Theory courses		9

Select advisor-approved 700-level Music History courses 6

Select advisor approved 700-level Music courses (not major area) 3

## Music, D.M.A., Piano Pedagogy

### Learning Outcomes

- Candidates who select the recital/treatise track will demonstrate the ability to perform musical works representative of a wide array of music styles and genres, and do so in a manner commensurate with doctoral-level musicianship.
- Candidates who have selected the dissertation track will perform a candidacy hearing, which will consist of a fifteen-minute program of music from two contrasting style periods. The music selected must be reflective of doctoral-level work. The student must demonstrate knowledge of style, phrasing/musicality appropriate to that style period, and execution reflective of doctoral-level work.
- Candidates must complete a written document (either a dissertation or treatise) representing original scholarship on a topic incorporating appropriate research methods and approved by each candidate's dissertation/treatise adviser and degree committee. In addition, candidates must complete an oral presentation and defense of the findings of their research/scholarly work.
- Candidates will be able to demonstrate doctoral-level knowledge of piano literature by identifying, describing, comparing, and contrasting musical works from the Antiquity through modern times.

### Admission

The general requirements for admission are: completion of master's degree in music (or the equivalent); evidence of an ability to pursue doctoral study in the desired area (see information online); and fulfillment of the general requirements for admission to The Graduate School, including the submission of three recommendations. Applicants whose native language is not English are also required to submit a satisfactory score on the TOEFL or the IELTS Intl. Academic Course Type 2 exam. Normally, the minimum acceptable score on the TOEFL is 100 (internet-based) or 600 (paper-based). The minimum acceptable overall band score on the IELTS Intl. Academic Course Type 2 exam is 7. Additional admission requirements for specific areas are listed online. The D.M.A. in Performance is offered in selected areas. Admission decisions are based upon the applicant's total portfolio with particular weight being given to the audition (for those applying in the area of conducting, performance, or piano pedagogy).

## Degree Requirements (48 Post-Masters Hours)

Prior to taking any graduate music study, all doctoral students must take the Graduate Music Diagnostic Examination and, early in their studies, complete all deficiencies and required courses resulting from the exam. Doctoral students must be admitted to degree candidacy no later than the completion of the equivalent of two semesters of full-time study (12 credits total for graduate assistants and 18 credits total for others) and must complete a minimum of 48 credit hours of graduate work past the master's degree. At least 18 of the credit hours must be completed as part of doctoral residency (18 approved credits taken within a span of three consecutive semesters, with at least one semester being spent in full-time study on the Columbia campus). The residency requirement for D.M.A. students in composition consists of a minimum of four full-time semesters of study on the Columbia campus, three of which must be consecutive. Prior to the scheduling of the comprehensive examination,

degree candidates must have satisfied reading proficiency in a foreign language or completed an advisor-approved research course. Candidates for the D.M.A. must also complete written comprehensive examinations in the major area (and any minor area) as well as an oral comprehensive examination that covers the major area, music history/literature, music theory, and any doctoral minor. In addition, degree candidates must complete a dissertation or dissertation requirement, as follows: those in conducting or performance must present four full recitals and submit a research document; candidates in composition must complete a dissertation consisting of a musical work of major proportions and a research document; and candidates in piano pedagogy must complete a written dissertation or present two recitals and complete a written treatise. The final doctoral requirement is the successful oral defense of the dissertation or dissertation requirement.

### Major Area (28 Hours)

Course	Title	Credits
MUSC 773	Seminar in Performance Pedagogy I	3
MUSC 774	Seminar in Performance Pedagogy II	3
Piano Pedagogy		3
Piano Literature or Pedagogy		3
MUSC 811P	Doctoral Applied Music/Piano	1-4

### Dissertation Track

Course	Title	Credits
MUSC 899	Dissertation Preparation	12

**Total Credit Hours** 12

### Recital/Treatise Track

Course	Title	Credits
MUSC 891	Recital Preparation	1-3
MUSC 898	Treatise Preparation	6
MUSC 896	Solo Recital	1
Select one of the following:		1
MUSC 892	Lecture Recital	
MUSC 893	Opera/Oratorio Role	
MUSC 894	Concerto Recital	
MUSC 895	Chamber Recital	
MUSC 896	Solo Recital	

### Other Studies in Music (20 Hours)

Course	Title	Credits
MUSC 747	Advanced Music Research	2
Select approved 700-level Music Theory courses		9
Select approved 700-level Music History courses		6
Select from 700-level Music courses not in major area		3

**Total Credit Hours** 20

## Music, M.M. (Composition Concentration)

### Learning Outcomes

- Candidates will demonstrate compositional ability of significant duration and scope.
- Candidates will be able to demonstrate masters-level knowledge of music history, music theory, and compositional styles by identifying,

describing, comparing, and contrasting musical works from the Antiquity through modern times.

- Candidates will be able to demonstrate masters-level knowledge of compositional techniques by identifying, describing, comparing, and contrasting specific methods of composition and their uses in musical works from the Antiquity through modern times.

## Admission

The general requirements for admission include the completion of an undergraduate degree in music (or the equivalent) with a grade point average of 3.0 (4.0 scale) on relevant courses and fulfillment of the general requirements for admission to The Graduate School, including the submission of three recommendations. The Master of Music with concentration in Music Theory requires submission of a satisfactory score on the Graduate Record Examination General Test or the Miller Analogies Test. A list of additional admission materials specific to each degree program is available on the School of Music website. Applicants whose native language is not English are also required to submit a satisfactory score on the TOEFL or the IELTS Intl. Academic Course Type 2 exam. Normally, the minimum acceptable score on the TOEFL is 80 (internet-based) or 570 (paper-based). The minimum acceptable overall band score on the IELTS Intl. Academic Course Type 2 exam is 6.5. Applicants for the Master of Music degree whose TOEFL/IELTS score is below the normal minimum standard will be considered on an individual basis for conditional admission. Such applicants must demonstrate exceptional abilities in the major area and evidence through past academic or professional activities strong promise for future professional success. Admission decisions are based upon the applicant's total application portfolio.

## Degree Requirements (32 Hours)

Master of Music with concentrations in composition, conducting, jazz studies, music history, music theory, opera theatre, and piano pedagogy

Prior to taking any graduate music study, all master's students must take the Graduate Music Diagnostic Examination, and, early in their studies, complete all deficiencies and required courses resulting from the exam. Degree candidates must complete a prescribed program of 32 hours of graduate work and successfully pass an oral comprehensive examination. In addition, candidates in conducting or performance must present one full recital, and those whose performance medium is an orchestral instrument must also perform a concerto; candidates in composition must complete a thesis consisting of a musical work of major proportions; candidates in music history or music theory must complete a written thesis; and candidates in piano pedagogy must present a solo recital or complete a written thesis. Specific program requirements are listed online.

### Master of Music Required Courses

Course	Title	Credits
MUSC 707	Music Bibliography and Research	2
Select advisor-approved course in Music History		3
Select advisor-approved course in Music Theory		3
<b>Total Credit Hours</b>		<b>8</b>

## Composition Concentration Requirements

### Major Area (11-12 Hours)

Course	Title	Credits
MUSC 716	Composition	1-3
MUSC 799	Thesis Preparation	3

### Other Studies in Music (12-13 Hours)

Course	Title	Credits
Select advisor-approved course in Music Technology		3
Select advisor-approved Music courses		9-10
<b>Total Credit Hours</b>		<b>12-13</b>

## Music, M.M. (Conducting Concentration)

### Learning Outcomes

- Candidates will demonstrate ability to conduct ensembles performing a wide array of musical styles reflective of masters-level work.
- Candidates will be able to demonstrate masters-level knowledge of music history, music theory, and compositional styles by identifying, describing, comparing, and contrasting musical works from the Antiquity through modern times.
- Candidates will be able to demonstrate masters-level knowledge of conducting methods by identifying, describing, comparing, and contrasting rehearsal techniques, musical repertoire, and approaches of expert conductors.

### Admission

The general requirements for admission include the completion of an undergraduate degree in music (or the equivalent) with a grade point average of 3.0 (4.0 scale) on relevant courses and fulfillment of the general requirements for admission to The Graduate School, including the submission of three recommendations. The Master of Music with concentration in Music Theory requires submission of a satisfactory score on the Graduate Record Examination General Test or the Miller Analogies Test. A list of additional admission materials specific to each degree program is available on the School of Music website. Applicants whose native language is not English are also required to submit a satisfactory score on the TOEFL or the IELTS Intl. Academic Course Type 2 exam. Normally, the minimum acceptable score on the TOEFL is 80 (internet-based) or 570 (paper-based). The minimum acceptable overall band score on the IELTS Intl. Academic Course Type 2 exam is 6.5. Applicants for the Master of Music degree whose TOEFL/IELTS score is below the normal minimum standard will be considered on an individual basis for conditional admission. Such applicants must demonstrate exceptional abilities in the major area and evidence through past academic or professional activities strong promise for future professional success. Admission decisions are based upon the applicant's total application portfolio.

### Degree Requirements (32 Hours)

Master of Music with concentrations in composition, conducting, jazz studies, music history, music theory, opera theatre, and piano pedagogy.

Prior to taking any graduate music study, all master's students must take the Graduate Music Diagnostic Examination, and, early in their studies, complete all deficiencies and required courses resulting from the exam. Degree candidates must complete a prescribed program of 32

hours of graduate work and successfully pass an oral comprehensive examination. In addition, candidates in conducting or performance must present one full recital, and those whose performance medium is an orchestral instrument must also perform a concerto; candidates in composition must complete a thesis consisting of a musical work of major proportions; candidates in music history or music theory must complete a written thesis; and candidates in piano pedagogy must present a solo recital or complete a written thesis. Specific program requirements are listed online.

### Master of Music Required Courses

Course	Title	Credits
MUSC 707	Music Bibliography and Research	2
Select advisor-approved course in Music History		3
Select advisor-approved course in Music Theory		3
<b>Total Credit Hours</b>		<b>8</b>

### Conducting Concentration Requirements

#### Major Area (16 Hours)

Course	Title	Credits
Select 6-9 hours of Master's Applied Study from the following:		6-9
MUSC 711	Graduate Applied Music	
MUSC 733	Advanced Conducting	
MUSC 736	Conductors Institute	
MUSC 796	Solo Recital	1
<b>Total Credit Hours</b>		<b>7-10</b>

#### Courses Selected from the Following

- Literature
- Pedagogy
- Score-reading

#### Other Studies in Music (8 Hours)

Course	Title	Credits
MUSC 734	Ensemble	1
Select advisor-approved Music History courses		3
Select advisor-approved Music Theory courses		3
<b>Total Credit Hours</b>		<b>7</b>

## Music, M.M. (Jazz Studies Concentration)

### Learning Outcomes

- Candidates will demonstrate the ability to perform a wide array of jazz styles.
- Candidates will be able to demonstrate masters-level knowledge of music history, music theory, and compositional styles by identifying, describing, comparing, and contrasting musical works from the Antiquity through modern times.
- Candidates will create original jazz works of significant duration and scope, reflective of masters-level compositional ability.

### Admission

The general requirements for admission include the completion of an undergraduate degree in music (or the equivalent) with a grade point average of 3.0 (4.0 scale) on relevant courses and fulfillment of the

general requirements for admission to The Graduate School, including the submission of three recommendations. The Master of Music with concentration in Music Theory requires submission of a satisfactory score on the Graduate Record Examination General Test or the Miller Analogies Test. A list of additional admission materials specific to each degree program is available on the School of Music website. Applicants whose native language is not English are also required to submit a satisfactory score on the TOEFL or the IELTS Intl. Academic Course Type 2 exam. Normally, the minimum acceptable score on the TOEFL is 80 (internet-based) or 570 (paper-based). The minimum acceptable overall band score on the IELTS Intl. Academic Course Type 2 exam is 6.5. Applicants for the Master of Music degree whose TOEFL/IELTS score is below the normal minimum standard will be considered on an individual basis for conditional admission. Such applicants must demonstrate exceptional abilities in the major area and evidence through past academic or professional activities strong promise for future professional success. Admission decisions are based upon the applicant's total application portfolio.

## Degree Requirements (32 Hours)

Master of Music with concentrations in composition, conducting, jazz studies, music history, opera theatre, and piano pedagogy.

Prior to taking any graduate music study, all master's students must take the Graduate Music Diagnostic Examination, and, early in their studies, complete all deficiencies and required courses resulting from the exam. Degree candidates must complete a prescribed program of 32 hours of graduate work and successfully pass an oral comprehensive examination. In addition, candidates in conducting or performance must present one full recital, and those whose performance medium is an orchestral instrument must also perform a concerto; candidates in composition must complete a thesis consisting of a musical work of major proportions; candidates in music history or music theory must complete a written thesis; and candidates in piano pedagogy must present a solo recital or complete a written thesis. Specific program requirements are listed online.

### Master of Music Required Courses

Course	Title	Credits
MUSC 707	Music Bibliography and Research	2
Select advisor-approved course in Music History		3
Select advisor-approved course in Music Theory		3
<b>Total Credit Hours</b>		<b>8</b>

### Jazz Studies Concentration Requirements

#### Major Area (20 Hours)

Course	Title	Credits
Select nine hours of the following:		9
MUSC 713	Advanced Jazz Theory	
MUSC 714	Advanced Jazz Arranging	
MUSC 786	Advanced Jazz Improvisation	
Select one of the following tracks:		11
<b>Composition Track</b>		
Jazz Composition		
Non-jazz Composition		
MUSC 790	Composition Recital	
<b>Performance Track</b>		
MUSC 711	Graduate Applied Music	

MUSC 796	Solo Recital	
MUSC 735J	Chamber Music - Jazz Combo	
<b>Total Credit Hours</b>		<b>20</b>

### Other Studies in Music (4 Hours)

Course	Title	Credits
MUSC 734	Ensemble	0-1
Select advisor-approved Music courses		2

## Music, M.M. (Music History Concentration)

### Learning Outcomes

- Candidates will demonstrate mastery of skills need to generate, write, and produce original research reflective of masters-level work in music history.
- Candidates will be able to demonstrate masters-level knowledge of music theory and compositional styles by identifying, describing, comparing, and contrasting musical works from the Antiquity through modern times.
- Candidates will be able to demonstrate masters-level knowledge of music history by identifying, describing, comparing, and contrasting musical works from the Antiquity through modern times.

### Admission

The general requirements for admission include the completion of an undergraduate degree in music (or the equivalent) with a grade point average of 3.0 (4.0 scale) on relevant courses and fulfillment of the general requirements for admission to The Graduate School, including the submission of three recommendations. The Master of Music with concentration in Music Theory requires submission of a satisfactory score on the Graduate Record Examination General Test or the Miller Analogies Test. A list of additional admission materials specific to each degree program is available on the School of Music website. Applicants whose native language is not English are also required to submit a satisfactory score on the TOEFL or the IELTS Intl. Academic Course Type 2 exam. Normally, the minimum acceptable score on the TOEFL is 80 (internet-based) or 570 (paper-based). The minimum acceptable overall band score on the IELTS Intl. Academic Course Type 2 exam is 6.5. Applicants for the Master of Music degree whose TOEFL/IELTS score is below the normal minimum standard will be considered on an individual basis for conditional admission. Such applicants must demonstrate exceptional abilities in the major area and evidence through past academic or professional activities strong promise for future professional success. Admission decisions are based upon the applicant's total application portfolio.

### Degree Requirements (32 Hours)

Master of Music with concentrations in composition, conducting, jazz studies, music history, music theory, opera theatre, and piano pedagogy.

Prior to taking any graduate music study, all master's students must take the Graduate Music Diagnostic Examination, and, early in their studies, complete all deficiencies and required courses resulting from the exam. Degree candidates must complete a prescribed program of 32 hours of graduate work and successfully pass an oral comprehensive examination. Reading proficiency in a least one foreign language (French, German, or Italian) is required for the Master of Music degree with

concentrations in Music History and Opera Theatre (see the respective degree requirements). This proficiency, which must be demonstrated prior to registration for thesis credit or the comprehensive exam, may be satisfied by earning a grade of “S” in a foreign language reading course (e.g., GERM 615) or by successfully completing an examination given by the appropriate USC foreign language faculty. In addition, candidates in conducting or performance must present one full recital, and those whose performance medium is an orchestral instrument must also perform a concerto; candidates in composition must complete a thesis consisting of a musical work of major proportions; candidates in music history or music theory must complete a written thesis; and candidates in piano pedagogy must present a solo recital or complete a written thesis. Specific program requirements are listed in the Academic Bulletin.

### Master of Music Required Courses

Course	Title	Credits
MUSC 707	Music Bibliography and Research	2
Select advisor-approved course in Music History		3
Select advisor-approved course in Music Theory		3
<b>Total Credit Hours</b>		<b>8</b>

### Music History Concentration Requirements

#### Major Area (12 Hours)

Course	Title	Credits
Select 9 hours of Music History courses		9
MUSC 799	Thesis Preparation	3
<b>Total Credit Hours</b>		<b>12</b>

#### Other Studies in Music (12 Hours)

Course	Title	Credits
MUSC 747	Advanced Music Research	2
Select advisor-approved course in Music Theory		3
Select advisor-approved Music courses		4
Select advisor-approved Non-music elective		3
<b>Total Credit Hours</b>		<b>12</b>

## Music, M.M. (Music Theory Concentration)

### Learning Outcomes

- Candidates will demonstrate the ability to perform musical works representative of a wide array of music styles and genres, and do so in a manner commensurate with masters-degree level musicianship.
- Candidates will be able to demonstrate masters-level knowledge of music history, music theory, and compositional styles by identifying, describing, comparing, and contrasting musical works from the Antiquity through modern times.
- Candidates will be able to demonstrate masters-level knowledge of their primary instrument or voice (including instrument history, repertoire, notable composers, and renowned pedagogues) by identifying, describing, comparing, and contrasting these elements in relation to contemporary practice
- Candidates will demonstrate mastery of skills need to generate, write, and produce original research reflective of masters-level work in music theory.

- Candidates will be able to demonstrate masters-level knowledge of music history by identifying, describing, comparing, and contrasting musical works from the Antiquity through modern times.
- Candidates will be able to demonstrate masters-level knowledge of music theory and compositional styles by identifying, describing, comparing, and contrasting musical works from the Antiquity through modern times.

### Admission

The general requirements for admission include the completion of an undergraduate degree in music (or the equivalent) with a grade point average of 3.0 (4.0 scale) on relevant courses and fulfillment of the general requirements for admission to The Graduate School, including the submission of three recommendations. The Master of Music with concentration in Music Theory requires submission of a satisfactory score on the Graduate Record Examination General Test or the Miller Analogies Test. A list of additional admission materials specific to each degree program is available on the School of Music website. Applicants whose native language is not English are also required to submit a satisfactory score on the TOEFL or the IELTS Intl. Academic Course Type 2 exam. Normally, the minimum acceptable score on the TOEFL is 80 (internet-based) or 570 (paper-based). The minimum acceptable overall band score on the IELTS Intl. Academic Course Type 2 exam is 6.5. Applicants for the Master of Music degree whose TOEFL/IELTS score is below the normal minimum standard will be considered on an individual basis for conditional admission. Such applicants must demonstrate exceptional abilities in the major area and evidence through past academic or professional activities strong promise for future professional success. Admission decisions are based upon the applicant's total application portfolio.

### Degree Requirements (32 Hours)

Master of Music with concentrations in composition, conducting, jazz studies, music history, music theory, opera theatre, and piano pedagogy.

#### Master of Music Required Courses

Course	Title	Credits
MUSC 707	Music Bibliography and Research	2
Select advisor-approved course in Music History		3
Select advisor-approved course in Music Theory		3
<b>Total Credit Hours</b>		<b>8</b>

#### Music Theory Concentration Requirements

##### Major Area (12 Hours)

Course	Title	Credits
Select 9 hours of Music Theory courses		9
MUSC 799	Thesis Preparation	3
<b>Total Credit Hours</b>		<b>12</b>

##### Other Studies in Music (12 Hours)

Course	Title	Credits
MUSC 747	Advanced Music Research	2
Select advisor-approved course in Music History		3
Select advisor-approved electives <sup>1</sup>		7
<b>Total Credit Hours</b>		<b>12</b>

<sup>1</sup> No more than 3 Hours of Non-music electives.

# Music, M.M. (Opera Theatre Concentration)

## Learning Outcomes

- Candidates will demonstrate mastery of skills need to generate, write, and produce original research reflective of masters-level work in music theory.
- Candidates will be able to demonstrate masters-level knowledge of music history by identifying, describing, comparing, and contrasting musical works
- Candidates will be able to demonstrate masters-level knowledge of music theory and compositional styles by identifying, describing, comparing, and contrasting musical works from the Antiquity through modern times.
- Candidates will demonstrate their knowledge and skill through executing level-appropriate tasks related to opera productions across a variety of styles and contexts, including one-act and full opera settings.
- Candidates will be able to demonstrate masters-level knowledge of music history, music theory, and compositional styles by identifying, describing, comparing, and contrasting musical works from the Antiquity through modern times.
- Candidates will be able to demonstrate masters-level knowledge by identifying, describing, and comparing specific methods and practices used in modern opera productions.

## Admission

The general requirements for admission include the completion of an undergraduate degree in music (or the equivalent) with a grade point average of 3.0 (4.0 scale) on relevant courses and fulfillment of the general requirements for admission to The Graduate School, including the submission of three recommendations. The Master of Music with concentration in Music Theory requires submission of a satisfactory score on the Graduate Record Examination General Test or the Miller Analogies Test. A list of additional admission materials specific to each degree program is available on the School of Music website. Applicants whose native language is not English are also required to submit a satisfactory score on the TOEFL or the IELTS Intl. Academic Course Type 2 exam. Normally, the minimum acceptable score on the TOEFL is 80 (internet-based) or 570 (paper-based). The minimum acceptable overall band score on the IELTS Intl. Academic Course Type 2 exam is 6.5. Applicants for the Master of Music degree whose TOEFL/IELTS score is below the normal minimum standard will be considered on an individual basis for conditional admission. Such applicants must demonstrate exceptional abilities in the major area and evidence through past academic or professional activities strong promise for future professional success. Admission decisions are based upon the applicant's total application portfolio.

## Degree Requirements (32 Hours)

Master of Music with concentrations in composition, conducting, jazz studies, music history, music theory, opera theatre, and piano pedagogy.

Prior to taking any graduate music study, all master's students must take the Graduate Music Diagnostic Examination, and, early in their studies, complete all deficiencies and required courses resulting from the exam. Degree candidates must complete a prescribed program of 32 hours of graduate work and successfully pass an oral

comprehensive examination. Reading proficiency in a least one foreign language (French, German, or Italian) is required for the Master of Music degree with concentrations in Music History (p. 381) and Opera Theatre (see the respective degree requirements). This proficiency, which must be demonstrated prior to registration for thesis credit or the comprehensive exam, may be satisfied by earning a grade of "S" in a foreign language reading course (e.g., GERM 615) or by successfully completing an examination given by the appropriate USC foreign language faculty. In addition, candidates in conducting or performance must present one full recital, and those whose performance medium is an orchestral instrument must also perform a concerto; candidates in composition must complete a thesis consisting of a musical work of major proportions; candidates in music history or music theory must complete a written thesis; and candidates in piano pedagogy must present a solo recital or complete a written thesis. Specific program requirements are listed in the Academic Bulletin.

## Master of Music Required Courses

Course	Title	Credits
MUSC 707	Music Bibliography and Research	2
	Select advisor-approved course in Music History	3
	Select advisor-approved course in Music Theory	3
<b>Total Credit Hours</b>		<b>8</b>

## Opera Theatre Concentration Requirements

### Major Area (12-15 Hours)

Select one of the following tracks:

#### Performance Track

Course	Title	Credits
MUSC 545	Survey of the Opera	3
MUSC 711	Graduate Applied Music	1-4
MUSC 778	Advanced Diction	2
MUSC 780	Opera Theater	1
MUSC 781	Role Preparation	1
<b>Total Credit Hours</b>		<b>8-11</b>

#### Directing Track

Course	Title	Credits
MUSC 511V	Applied Music/ Voice	1-2
MUSC 545	Survey of the Opera	3
MUSC 780	Opera Theater	1
MUSC 782	Opera Production	1
<b>Total Credit Hours</b>		<b>6-7</b>

#### Other Studies in Music (9-12 Hours)

Course	Title	Credits
MUSC 581	The Alexander Technique	2
	Select advisor-approved courses from Theatre	
	Select advisor-approved courses from Dance	
<b>Total Credit Hours</b>		<b>2</b>

## Music, M.M. (Piano Pedagogy Concentration)

### Learning Outcomes

- Candidates will demonstrate the ability to perform musical works representative of a wide array of music styles and genres, and do so in a manner commensurate with masters-degree level musicianship.
- Candidates will be able to demonstrate masters-level knowledge of music history, music theory, and compositional styles by identifying, describing, comparing, and contrasting musical works from the Antiquity through modern times.
- Candidates will be able to demonstrate masters-level knowledge by identifying, describing, and comparing specific methods of teaching and predominant educational theories, and the uses of these approaches in the field of piano pedagogy.

### Admission

The general requirements for admission include the completion of an undergraduate degree in music (or the equivalent) with a grade point average of 3.0 (4.0 scale) on relevant courses and fulfillment of the general requirements for admission to The Graduate School, including the submission of three recommendations. The Master of Music with concentration in Music Theory requires submission of a satisfactory score on the Graduate Record Examination General Test or the Miller Analogies Test. A list of additional admission materials specific to each degree program is available on the School of Music website. Applicants whose native language is not English are also required to submit a satisfactory score on the TOEFL or the IELTS Intl. Academic Course Type 2 exam. Normally, the minimum acceptable score on the TOEFL is 80 (internet-based) or 570 (paper-based). The minimum acceptable overall band score on the IELTS Intl. Academic Course Type 2 exam is 6.5. Applicants for the Master of Music degree whose TOEFL/IELTS score is below the normal minimum standard will be considered on an individual basis for conditional admission. Such applicants must demonstrate exceptional abilities in the major area and evidence through past academic or professional activities strong promise for future professional success. Admission decisions are based upon the applicant's total application portfolio.

### Degree Requirements (32 Hours)

Master of Music with concentrations in composition, conducting, jazz studies, music history, music theory, opera theatre, and piano pedagogy.

Prior to taking any graduate music study, all master's students must take the Graduate Music Diagnostic Examination, and, early in their studies, complete all deficiencies and required courses resulting from the exam. Degree candidates must complete a prescribed program of 32 hours of graduate work and successfully pass an oral comprehensive examination. In addition, candidates in conducting or performance must present one full recital, and those whose performance medium is an orchestral instrument must also perform a concerto; candidates in composition must complete a thesis consisting of a musical work of major proportions; candidates in music history or music theory must complete a written thesis; and candidates in piano pedagogy must present a solo recital or complete a written thesis. Specific program requirements are listed online.

### Master of Music Required Courses

Course	Title	Credits
MUSC 707	Music Bibliography and Research	2
	Select advisor-approved course in Music History	3
	Select advisor-approved course in Music Theory	3
<b>Total Credit Hours</b>		<b>8</b>

### Piano Pedagogy Concentration Requirements

#### Major Area (19-21 Hours)

##### Thesis Track

Course	Title	Credits
MUSC 711	Graduate Applied Music	4
MUSC 747	Advanced Music Research	2
MUSC 799	Thesis Preparation	3
<b>Total Credit Hours</b>		<b>9</b>

##### Recital Track

Course	Title	Credits
MUSC 711	Graduate Applied Music	1-4
MUSC 796	Solo Recital	1

#### Other Studies in Music (3-5 Hours)

Course	Title	Credits
	Select 3-5 hours of Advisor-approved Music courses	3-5
<b>Total Credit Hours</b>		<b>3-5</b>

## Music, M.M. (Violin/Viola Pedagogy Concentration)

### Admission

The general requirements for admission are the following: completion of an undergraduate degree in music (or the equivalent) with a grade point average of 3.0 (on a 4.0 scale) on relevant courses, strong violin performance skills as evidenced through an audition, and fulfillment of the general requirements for admission to The Graduate School, including the submission of three recommendations. Applicants whose native language is not English are also required to submit a satisfactory score on the TOEFL or the IELTS Intl. Academic Course Type 2 exam. The minimum acceptable score on the TOEFL is 80 (internet-based) or 570 (paper-based). The minimum acceptable overall band score on the IELTS Intl. Academic Course Type 2 exam is 6.5. Applicants whose scores fall below the published minimum must demonstrate exceptional abilities in the major area and evidence of past academic or professional activities strong promise for future professional success in order to be admitted. Admission decisions are based upon the applicant's total application portfolio.

### Degree Requirements (32 Hours)

Prior to taking any graduate music study, all master's students must take the Graduate Music Diagnostic Examination, and, early in their studies, complete all deficiencies and required courses resulting from the exam. Degree candidates must complete a prescribed program of 32 hours of graduate work and successfully pass an oral comprehensive examination. In addition, candidates in violin/viola pedagogy must complete a final project. Specific program requirements are listed online. Candidates must begin matriculation in Fall semester.



## Master of Music Required Courses

Course	Title	Credits
MUSC 707	Music Bibliography and Research	2
	Select advisor-approved course in Music History	3
	Select advisor-approved course in Music Theory	3
<b>Total Credit Hours</b>		<b>8</b>

## Violin/Viola Pedagogy Concentration Requirements

### Major Area (19 Hours)

Course	Title	Credits
MUSC 573	Performance Pedagogy I	3
MUSC 770	Suzuki String Pedagogy I	3
MUSC 771	Suzuki String Pedagogy II	3
MUSC 784	Suzuki Practicum I	1
MUSC 785	Suzuki Practicum II	1
MUSC 505	Violin Scales and Technique	2
MUSC 700	Independent Study	1-3
MUSC 711	Graduate Applied Music	1-4
<b>Total Credit Hours</b>		<b>15-20</b>

### Other Studies in Music (5 Hours)

Course	Title	Credits
MUSC 734	Ensemble	0-1
	Select advisor-approved Music courses	3

# COLLEGE OF NURSING

Jeannette O. Andrews, *Dean*

Alicia K. Ribar, *Associate Dean for Academics and Graduate Director*

Karen Worthy, *Assistant Dean for Undergraduate Studies*

Robin Dail, *Associate Dean for Faculty Affairs*

Bernardine Pinto, *Associate Dean for Research*

Coretta M. Jenerette, *Associate Dean for Diversity, Equity, and Inclusivity*

Joy P. Deupree, *Associate Dean for Practice and Strategic Partnerships*

The College of Nursing offers the degrees of Master of Science in Nursing (MSN), the Doctor of Nursing Practice (DNP), and the PhD in Nursing Science. Post-Master Certificates of Graduate Study (CGS) in Advanced Practice Nursing and in Nursing Administration and Nursing Informatics are available.

The master's degree programs in nursing and Doctor of Nursing Practice program at The University of South Carolina are accredited by the Commission on Collegiate Nursing Education (<https://www.aacnursing.org/CCNE/>).

Courses are offered through various distance education formats as well as on the Columbia campus. A computer with broadband Internet capability is required.

The frequency with which courses are offered will depend upon projected enrollments and faculty availability. Students and prospective students should meet with an advisor for the respective program to project a curriculum plan of study.

Graduate students in other divisions of the University may enroll in nonclinical courses in the College of Nursing (CON) with the approval of the graduate director of the college and the consent of the course professor.

## General Admission Requirements

Regulations governing admission to graduate study in nursing include those established by both The Graduate School and the College of Nursing. Applicants must complete an application to The Graduate School and a College of Nursing supplement. Specific requirements for admission to each of the academic programs in nursing are listed below in that program's section.

Admission Deadlines are as follows:

PhD priority admission: February 15

Fall admissions: March 1

Spring admissions: August 1

Summer admissions: October 31

## Financial Aid

Applicants requiring financial assistance should review additional information about financial aid provided on The Graduate School's Web site.

Information about financial aid opportunities is shared with all students via the CON website and announcements from the CON Office of Student Affairs. Federal loan and scholarship opportunities as well as private

scholarships are a few of the financial aid offerings available for graduate students in the CON after admission.

## General Requirements

Residence, credit transfer, length of time allowed to complete the program, and other general requirements for graduate degrees in nursing are the same as those established by The Graduate School, except where otherwise noted. CGS students are expected to complete their programs of study in 3 years or fewer; MSN and Post-MSN DNP students are expected to complete their programs of study in 4 years or fewer; Post-BSN DNP students are expected to complete their program of study in 6 years or fewer; and PhD students are expected to complete their program of study in 10 years or fewer.

Current authorization to practice as SC Registered Nurse or possession of an unencumbered license in the state in which clinical practice will occur is required for all graduate clinical courses. The RN license must be issued on the basis of the National Council Licensure Examination (NCLEX-RN<sup>®</sup> exam). Full-time students (9 credit hours or more), graduate assistants, and international students are required to carry health insurance coverage and will be automatically enrolled in the University Plan unless comparable alternative health insurance coverage is on file in the Health Insurance Assistance Office at the Thomson Student Health Center. Part-time students are encouraged to carry health insurance throughout the course of their studies and all students must carry professional liability insurance through the College of Nursing, purchased each semester in conjunction with direct or indirect clinical courses at a cost of approximately \$50 per course. Maintenance of current CPR certification by the American Heart Association (BLS) is required for enrollment in clinical courses.

In addition to meeting the health requirements of the University, students enrolled in direct or indirect clinical nursing courses are required to provide evidence of meeting contractual health requirements and must pass a drug screen and background check. Information on all clinical requirements is available in the College of Nursing Office of Academic Affairs. Maintenance of clinical requirements via CastleBranch is mandatory for enrollment in clinical courses.

## Academic Progression and Dismissal Policy

The College of Nursing abides by the same probation policies outlined by the Graduate School at the University of South Carolina. Additionally, other detailed requirement for progression and academic standing/dismissal are outlined in the College of Nursing Graduate Student program specific handbooks here ([https://www.sc.edu/study/colleges\\_schools/nursing/internal/current\\_students/](https://www.sc.edu/study/colleges_schools/nursing/internal/current_students/)).

## Progression in Thesis or Dissertation Work

Satisfactory progress in thesis, DNP project, or PhD dissertation work results in a grade of T; unsatisfactory progress results in a grade of U. The accumulation of two U grades in NURS 799, NURS 897, or NURS 899, regardless of credit hours enrolled, is grounds for dismissal from the program.

## Programs

- Adult Gerontology-Acute Care Nurse Practitioner, M.S.N.
- Advanced Practice Nursing, Certificate

- Family Nurse Practitioner, M.S.N.
- Master's Entry to Practice, M.S.N.
- Nursing Administration, Certificate
- Nursing Administration, M.S.N.
- Nursing Informatics, Certificate
- Nursing Informatics, M.S.N.
- Nursing Practice, D.N.P.
- Nursing Science, Ph.D.
- Psychiatric Mental Health Nurse Practitioner, M.S.N.

## Adult Gerontology-Acute Care Nurse Practitioner, M.S.N.

The Adult Gerontology Acute Care Nurse Practitioner program (AGACNP) prepares registered nurses to provide direct patient management in acute and complex care settings. Graduates are employed in a variety of acute care settings ranging from critical care, trauma, cardiology, pulmonary, nephrology, gastroenterology, and surgery.

This curriculum prepares nurses to sit for national certification as an Adult-Gerontology Acute Care Nurse Practitioner.

### Learning Outcomes

- Apply theoretical knowledge to the practice of advanced nursing roles.
- Utilize evidence to address population health problems.
- Demonstrate professionalism at the advanced nursing level in the clinical setting.
- Pursue quality, effectiveness, and innovation in shared leadership of interprofessional health teams.

### Requirements for Earning the M.S.N. Degree Include the Following

1. Completion of an approved program of study;
2. Completion of an applied research course, NURS 791, or a thesis, NURS 799;
3. A GPA of 3.00 (on a 4.00 scale) on all courses attempted for graduate credit and all courses numbered 700 and above;
4. A GPA of 3.00 (on a 4.00 scale) on all courses on the approved program of study;
5. Passing a comprehensive assessment during the last semester of the program.

### Courses Requirements

(Total program 46-49 credit hours)

Course	Title	Credits
NURS 700	Theoretical and Conceptual Foundation for Nursing	3
NURS 702	Pharmacologic Mgmt in Pediatric, Adult, & Gerontological Patients Across Hlthcare Delivery Continuum	3
NURS 704	Advanced Health Assessment and Diagnostic Reasoning *	3
NURS 707	Advanced Pathophysiology for Nurses	3

NURS 717	Application of Basic Statistics for Nursing Practice & Service Management	3
NURS 718	Diagnostic Interpretation and Therapeutic Modalities	3
NURS 720	Clinical Application of Population Analysis	3
NURS 772	Introduction of Acute Care Adult and Gerontological Health Problems	3
NURS 773	Principles of Acute Care Adult and Gerontological Health Problems I *	6
NURS 774	Principals of Acute Care Adult and Gerontological Complex Health Problems II **	6
NURS 778	Advanced Practice Role: Adult Gerontology Acute Care NP (AGACNP)	2
NURS 778A	Practicum of Advanced Practice Role: Adult Gerontology Acute Care NP (AGACNP) *	2
NURS 790	Research Methods for Nursing	3
NURS 791 or NURS 799	Seminar in Clinical Nursing Research Thesis Preparation	3-6

**Total Credit Hours** **46-49**

\* Indicates courses with practicum hours.

+ Indicates course on-campus immersion.

## Advanced Practice Nursing, Certificate

The Certificate of Graduate Study in Advanced Practice Nursing (nurse practitioner) is restricted to students who hold a master's degree in nursing. The program of study is designed to augment the student's prior graduate study through advanced practice preparation in one of three emphasis areas: Family Nurse Practitioner, Adult Gerontological Acute Care Nurse Practitioner or Psychiatric Mental Health Nurse Practitioner.

Students who complete the program of study are eligible to apply to take a national certification examination in the applicable nurse practitioner specialty area.

### Learning Outcomes

- Demonstrate professionalism at the advanced nursing level in the clinical setting.
- Pursue quality, effectiveness, and innovation in shared leadership of interprofessional health teams.

### Entry Options

The Advanced Practice Nursing, Certificate program offers two entry points for students:

1. M.S.N. certified and practicing as an APRN (please note after admission a GAP analysis will be done to determine specific plan of study based on the National Organization of Nurse Practitioner Faculties LACE components).
2. M.S.N. not certified as Advanced Practice Nurses

## Requirements for earning the Certificate include:

1. Completion of an approved program of study;
2. A GPA of 3.00 (on a 4.00 scale) on all courses attempted for graduate credit and all courses numbered 700 and above;
3. A GPA of a 3.00 (on a 4.00 scale) on all courses on the approved program of study
4. Minimum 18 Hours for students already certified for advanced practice nursing who need to obtain additional certification.

## Course Requirements

All Advanced Practice Nursing, CGS students will take the following courses<sup>3</sup> and one of the following concentration areas (*Total APRN Core 14 credit hours*)

Course	Title	Credits
NURS 702	Pharmacologic Mgmt in Pediatric, Adult, & Gerontological Patients Across Hlthcare Delivery Continuum <sup>3</sup>	3
NURS 704	Advanced Health Assessment and Diagnostic Reasoning <sup>2,3</sup>	3
NURS 707	Advanced Pathophysiology for Nurses <sup>3</sup>	3
NURS 718	Diagnostic Interpretation and Therapeutic Modalities <sup>3</sup>	3
One of the below courses based on the chosen concentration:		2
NURS 760A	Family Nurse Practitioner Role Practicum <sup>1,3</sup>	
NURS 768A	Advanced Psychiatric Nurse Practicum III: Role Development <sup>1,3</sup>	
NURS 778A	Practicum of Advanced Practice Role: Adult Gerontology Acute Care NP (AGACNP) <sup>1,3</sup>	
<b>Total Credit Hours</b>		<b>14</b>

<sup>1</sup> Indicates courses with practicum hours

<sup>2</sup> Indicates on campus immersion course.

<sup>3</sup> Students pursuing the Certificate of Graduate Study in Advanced Practice Nursing who are certified, practicing and meet the LACE components as Advanced Practice Nurses may not be required to take one or all of these courses. Determination will be done after admission via GAP Analysis.

## Required Concentration Courses for Family Nurse Practitioner

18 specialty credit hours (*Total program 32 Hours*)

Course	Title	Credits
NURS 756	Advanced Primary Care of Children for the FNP	2
NURS 757	Advanced Primary Care of Women for the FNP <sup>2</sup>	2
NURS 758	Acute Problems in Primary Care for the FNP <sup>1</sup>	6
NURS 759	Management of Common Chronic Health Problems for the FNP <sup>1,2</sup>	6
NURS 760	Family Nurse Practitioner Legal, Ethical, and Role Transition	2
<b>Total Credit Hours</b>		<b>18</b>

<sup>1</sup> Indicates courses with practicum hours

<sup>2</sup> Indicates on campus immersion course.

## Required Concentration Courses Adult Gerontology Acute Care Nurse Practitioner

18 specialty credit hours (*Total program 29 Hours*)

Course	Title	Credits
NURS 770	Emergent Diagnostics in Nursing (Only if 718 not required)	1
NURS 772	Introduction of Acute Care Adult and Gerontological Health Problems	3
NURS 786	Management of Acute Care Adult and Gerontological Health Problems I <sup>1</sup>	5 or 6
NURS 787	Management of Acute Adult and Gerontological Health Problems II <sup>1,2</sup>	5 or 6
NURS 778	Advanced Practice Role: Adult Gerontology Acute Care NP (AGACNP)	2
<b>Total Credit Hours</b>		<b>16-18</b>

<sup>1</sup> Indicates courses with practicum hours.

<sup>2</sup> Indicates on campus immersion course.

## Required Concentration Courses for Psychiatric Mental Health Nurse Practitioner

18 specialty credit hours (*Total 32 Program Credit Hours*)

Course	Title	Credits
NURS 761	Neuroscientific Basis for Pharmacological & Nonpharmacological Treatments for Psychiatric Conditions	4
NURS 763	Advanced Psychiatric Nurse Practicum I: Management of Psychiatric/Mental Health Conditions <sup>1</sup>	6
NURS 764	Advanced Psychiatric Nurse Practicum II: Management of Complex Psychiatric/Mental Health Conditions <sup>1</sup>	6
NURS 768	Psychiatric Mental Health Nurse Practitioner: Legal, Ethical, and Role Transition	2
<b>Total Credit Hours</b>		<b>18</b>

<sup>1</sup> Indicates courses with practicum hours.

## Family Nurse Practitioner, M.S.N.

The Family Nurse Practitioner program (FNP) program prepares registered nurses to provide direct patient management in primary care across many settings. Graduates are employed in a variety of primary care settings ranging from emergency departments, federally qualified health centers, urban and rural family practice/primary care practices.

This curriculum prepares nurses to sit for national certification as Family Nurse Practitioner.

### Learning Outcomes

- Apply theoretical knowledge to the practice of advanced nursing roles.
- Utilize evidence to address population health problems.
- Demonstrate professionalism at the advanced nursing level in the clinical setting.
- Pursue quality, effectiveness, and innovation in shared leadership of interprofessional health teams.

## Requirements for Earning the M.S.N. Degree Include the Following

1. Completion of an approved program of study;
2. Completion of an applied research course, NURS 791 (3), or a thesis, NURS 799 (6);
3. A GPA of 3.00 (on a 4.00 scale) on all courses attempted for graduate credit and all courses numbered 700 and above;
4. A GPA of 3.00 (on a 4.00 scale) on all courses on the approved program of study;
5. Passing a comprehensive assessment during the last semester of the program.

## Course Requirements (47-50 Hours)

Course	Title	Credits
NURS 700	Theoretical and Conceptual Foundation for Nursing	3
NURS 720	Clinical Application of Population Analysis	3
NURS 717	Application of Basic Statistics for Nursing Practice & Service Management	3
NURS 790	Research Methods for Nursing	3
NURS 791 or NURS 799	Seminar in Clinical Nursing Research Thesis Preparation	3-6
NURS 702	Pharmacologic Mgmt in Pediatric, Adult, & Gerontological Patients Across Hlthcare Delivery Continuum	3
NURS 704	Advanced Health Assessment and Diagnostic Reasoning <sup>1</sup>	3
NURS 707	Advanced Pathophysiology for Nurses	3
NURS 718	Diagnostic Interpretation and Therapeutic Modalities	3
NURS 756	Advanced Primary Care of Children for the FNP	2
NURS 757	Advanced Primary Care of Women for the FNP <sup>1</sup>	2
NURS 758	Acute Problems in Primary Care for the FNP <sup>2</sup>	6
NURS 759	Management of Common Chronic Health Problems for the FNP <sup>1,2</sup>	6
NURS 760	Family Nurse Practitioner Legal, Ethical, and Role Transition	2
NURS 760A	Family Nurse Practitioner Role Practicum <sup>2</sup>	2
<b>Total Credit Hours</b>		<b>47-50</b>

<sup>1</sup> Indicates course on-campus immersion.

<sup>2</sup> Indicates courses with practicum hours.

## Master's Entry to Practice, M.S.N.

The Master's Entry to Practice (MEPN) program is an entry into practice master's degree that provides students with a previously earned bachelor's degree the opportunity to gain education and experience as

a direct care provider of nursing in a variety of settings. The degree also provides an advantage to adult learners choosing nursing as a second career allowing them to become a nurse in a shorter amount of time and to earn a higher degree as opposed to a second baccalaureate degree.

Graduates of this program are eligible to apply to sit for the National Council Licensure Examination (NCLEX-RN), examination in order to obtain a registered nurse license.

## Learning Outcomes

- Apply theoretical knowledge to the practice of advanced nursing roles.
- Utilize evidence to address population health problems.
- Demonstrate professionalism at the advanced nursing level in the clinical setting.
- Pursue quality, effectiveness, and innovation in shared leadership of interprofessional health teams.

## Requirements for Earning the M.S.N. Degree Include the Following:

1. completion of an approved program of study;
2. completion of an applied research course, **NURS 791**;
3. a GPA of 3.00 (on a 4.00 scale) on all courses attempted for graduate credit and all courses numbered 700 and above;
4. a GPA of a 3.00 (on a 4.00 scale) on all courses on the approved program of study;
5. passing a comprehensive assessment during the last semester of the program.

## Course Requirements (76 hours)

Course	Title	Credits
NURS 700	Theoretical and Conceptual Foundation for Nursing	3
NURS 709	Pathophysiological Concepts for Nursing Practice	3
NURS 711	Pharmacotherapies for Nursing Practice	3
NURS 712	Health Assessment for Nursing Practice <sup>+</sup>	3
NURS 713	Nursing Practice Fundamentals <sup>*,+</sup>	4
NURS 714	Maternal/Newborn Nursing Practice <sup>*,+</sup>	4
NURS 715	Pediatric Nursing Practice <sup>*,+</sup>	4
NURS 720	Clinical Application of Population Analysis	3
NURS 721	Gerontological Nursing Care	2
NURS 723	Medical Surgical Nursing Practice I <sup>*,+</sup>	5
NURS 726	Medical Surgical Nursing Practice II <sup>*</sup>	5
NURS 729	Psychiatric Nursing Practice <sup>*,+</sup>	4
NURS 730	Population Health Nursing	3
NURS 745	Nursing Ethics, Policy & Advocacy	3
NURS 746	Informatics, Technology, and Emerging Issues	3
NURS 747	Leadership and Safety for Nursing Practice	3
NURS 748	Care Coordination and Outcomes Management <sup>*</sup>	3
NURS 750	Transition to Nursing Practice I <sup>*</sup>	3
NURS 751	Transition to Nursing Practice II <sup>*</sup>	3
NURS 789	Statistical and Research Methods for Nursing Practice	3
NURS 791	Seminar in Clinical Nursing Research	3

Select 6 hours of electives <sup>1</sup>	6
<b>Total Credit Hours</b>	<b>76</b>

\* Indicates courses with field study hours

+ Indicates courses with lab hours

<sup>1</sup> All electives must be 500 level or higher and approved by the academic advisor prior to enrollment.

## Nursing Administration, Certificate

The Certificate of Graduate Study in Nursing Administration is for students who hold a master's degree in nursing and choose to pursue additional knowledge in the area of nursing administration. The program's curriculum is designed to prepare professional nurses to enter leadership roles and work within interdisciplinary teams to improve system and population health services in a variety of health care settings.

Graduates of the program may be eligible to sit for certification examination as a nurse manager or nurse executive.

### Learning Outcomes

- Demonstrate professionalism at the advanced nursing level in the clinical setting.
- Pursue quality, effectiveness, and innovation in shared leadership of interprofessional health teams.

### Requirements for Earning the Certificate Include the Following

- Completion of an approved program of study;
- a GPA of 3.00 (on a 4.00 scale) on all courses attempted for graduate credit and all courses numbered 700 and above;
- a GPA of 3.00 (on a 4.00 scale) on all courses on the approved program of study

### Coursework

(Total program 18 credit hours)

Course	Title	Credits
NURS 720	Clinical Application of Population Analysis	3
NURS 734	Conceptual Basis of Health Systems	3
NURS 738	Financing of Health Care	3
NURS 740	Facilitative Processes in Nursing Administration	3
NURS 741	Coordinating Processes in Nursing Administration <sup>1</sup>	3
NURS 742	Integrative Processes in Nursing Administration <sup>1</sup>	3
<b>Total Credit Hours</b>		<b>18</b>

<sup>1</sup> Indicates courses with practicum hours.

## Nursing Administration, M.S.N.

The program's curriculum is designed to prepare professional nurses to enter leadership roles and work within interdisciplinary teams to improve system and population health services in a variety of health care settings.

Graduates of the program may be eligible to sit for certification examination as a nurse manager or nurse executive.

## Learning Outcomes

At the conclusion of the program, the master's graduate will be able to:

- Apply theoretical knowledge to the practice of advanced nursing roles.
- Utilize evidence to address population health problems.
- Demonstrate professionalism at the advanced nursing level in the clinical setting.
- Pursue quality, effectiveness, and innovation in shared leadership of interprofessional health teams.

## Requirements for Earning the M.S.N. Degree Include the Following

1. Completion of an approved program of study;
2. Completion of an applied research course, NURS 791 (3), or a thesis, NURS 799 (6);
3. A GPA of 3.00 (on a 4.00 scale) on all courses attempted for graduate credit and all courses numbered 700 and above;
4. A GPA of a 3.00 (on a 4.00 scale) on all courses on the approved program of study;
5. Passing a comprehensive assessment during the last semester of the program.

### Coursework

Total program 30-33 credit hours

Course	Title	Credits
NURS 700	Theoretical and Conceptual Foundation for Nursing	3
NURS 720	Clinical Application of Population Analysis	3
NURS 717	Application of Basic Statistics for Nursing Practice & Service Management	3
NURS 790	Research Methods for Nursing	3
NURS 791	Seminar in Clinical Nursing Research	3-6
or NURS 799	Thesis Preparation	
NURS 734	Conceptual Basis of Health Systems	3
NURS 738	Financing of Health Care	3
NURS 740	Facilitative Processes in Nursing Administration	3
NURS 741	Coordinating Processes in Nursing Administration <sup>1</sup>	3
NURS 742	Integrative Processes in Nursing Administration <sup>1</sup>	3
<b>Total Credit Hours</b>		<b>30-33</b>

<sup>1</sup> Indicates courses with practicum hours.

## Nursing Informatics, Certificate

The Certificate of Graduate Study in Nursing Informatics (N.I.) is for students who hold a master's degree in nursing and seek additional preparation in the management of information and technology to improve health care quality, patient safety, efficiency, and patient outcomes. Nursing informatics integrates nursing science, computer science, and informatics science to manage and communicate data, information, knowledge and wisdom in nursing practice. Graduates of the program may be eligible to sit for certification examination in nursing informatics.

## Learning Outcomes

- Demonstrate professionalism at the advanced nursing level in the clinical setting.
- Pursue quality, effectiveness, and innovation in shared leadership of interprofessional health teams.

## Requirements for Earning the Certificate Include the Following

- completion of an approved program of study;
- a GPA of 3.00 (on a 4.00 scale) on all courses attempted for graduate credit and all courses numbered 700 and above;
- a GPA of a 3.00 (on a 4.00 scale) on all courses on the approved program of study

## Course Requirements

(Total program 18 credit hours)

Course	Title	Credits
ITEC 764	Project Management for Health Information	3
ITEC 770	Health IT Database Systems	3
NURS 734	Conceptual Basis of Health Systems	3
NURS 738	Financing of Health Care	3
NURS 775	Foundations in Nursing Informatics	3
NURS 777	Nursing Informatics Practicum *	3

\*Indicates courses with practicum hours.

**Total Credit Hours** 18

## Nursing Informatics, M.S.N.

The Masters in Nursing Informatics (N.I.) prepares nurses in the management of information and technology to improve health care quality, patient safety, efficiency, and patient outcomes. Nursing informatics integrates nursing science, computer science, and informatics science to manage and communicate data, information, knowledge and wisdom in nursing practice. Graduates of the program may be eligible to sit for certification examination in nursing informatics.

## Learning Outcomes

- Apply theoretical knowledge to the practice of advanced nursing roles.
- Utilize evidence to address population health problems.
- Demonstrate professionalism at the advanced nursing level in the clinical setting.
- Pursue quality, effectiveness, and innovation in shared leadership of interprofessional health teams.

## Requirements

1. Completion of an approved program of study;
2. Completion of an applied research course, **NURS 791** (3), or a thesis, **NURS 799** (6);
3. A GPA of 3.00 (on a 4.00 scale) on all courses attempted for graduate credit and all courses numbered 700 and above;
4. A GPA of a 3.00 (on a 4.00 scale) on all courses on the approved program of study;

5. Passing a comprehensive assessment during the last semester of the program.

## Course Requirements

(Total program 33-36 credit hours)

Course	Title	Credits
ITEC 764	Project Management for Health Information	3
ITEC 770	Health IT Database Systems	3
NURS 700	Theoretical and Conceptual Foundation for Nursing	3
NURS 720	Clinical Application of Population Analysis	3
NURS 717	Application of Basic Statistics for Nursing Practice & Service Management	3
NURS 790	Research Methods for Nursing	3
NURS 791	Seminar in Clinical Nursing Research	3-6
or NURS 799	Thesis Preparation	
NURS 734	Conceptual Basis of Health Systems	3
NURS 738	Financing of Health Care	3
NURS 775	Foundations in Nursing Informatics	3
NURS 777	Nursing Informatics Practicum <sup>1</sup>	3
<b>Total Credit Hours</b>		<b>33-36</b>

<sup>1</sup> Indicates courses with practicum hours.

## Nursing Practice, D.N.P.

### Objectives

The Doctor of Nursing Practice D.N.P. is a practice degree designed to prepare nurses as clinical practitioners/scholars to assume advanced practice clinical and leadership roles. The D.N.P. program has two entry points, depending upon prior educational experience. The curricular plan is designed for the student who has a B.S.N. or a master's degree in nursing. The curriculum consists of course work equivalent to that of a master's degree in nursing plus additional course work (beyond the master's degree requirements) that extends the leadership skills and provides preparation for a variety of leadership roles in the health care arena.

Doctor of Nursing Practice graduates may be eligible to apply to take national certification examinations in at least one area of advanced practice or leadership areas based on major concentration.

### Learning Outcomes

1. Identify direct and indirect clinical problems in complex health settings and work with interprofessional teams to address them.
2. Differentiate theoretical knowledge as it applies to direct or indirect clinical care.
3. Translate evidence to address population health problems.
4. Integrate data bases and information literacy in designing interventions for advanced practice.
5. Execute evidence-based interventions to improve health care outcomes.

### Entry Options

The DNP program offers two entry points for students:

B.S.N. entry-a bachelor of science in nursing degree from a program that is nationally accredited;  
M.S.N. entry- a bachelor of science in nursing degree and a master's in nursing degree from nationally accredited programs.

## Requirements for Earning the D.N.P. Degree Include

1. Doctoral residency of at least 18 graduate credit hours for three consecutive major semesters. Enrollment in a summer term is not required to maintain continuity, but credits earned during summer terms (including May session) will count toward the 18 hours required for Residency. The residency requirement may be met only after admission to the D.N.P. program;
2. Completion of an approved program of study;
3. Comprehensive assessment through defense of project proposal;
4. Completion of a research utilization / evidence-based practice project and oral defense.

## Course Requirements

All DNP students will take the following courses and one of the following concentration areas (Total DNP Core 27 credits hours):

### All Students Will Take

Course	Title	Credits
NURS 737	Foundations for DNP Development	3
NURS 817	Application of Statistics for Evidence Based Nursing Practice	3
NURS 779	Health Policy <sup>1</sup>	3
NURS 808	Advanced Nursing in Population Health	3
NURS 780	Organizational Theories and Systems in Healthcare	3
NURS 781	Applied Technology in Health Care	3
NURS 819	Evidence and Nursing Practice	3
NURS 897	DNP Project Preparation and Residency <sup>1</sup>	6
<b>Total Credit Hours</b>		<b>27</b>

<sup>1</sup> Indicates practicum course.

### Required Concentration Courses for Post-Master's Entry; Nurse Executive Leadership Concentration

9 to 12 specialty credit hours (total program 36 to 39 credits hours):

Course	Title	Credits
NURS 806	Nurse Executive Leadership I <sup>1</sup>	3
NURS 807	Nurse Executive Leadership II <sup>1</sup>	3
NURS 809	Advanced Healthcare Financing *	3
<b>Total Credit Hours</b>		<b>9</b>

<sup>1</sup> Indicates practicum course

\* MSN level finance course or **NURS 738** is a prerequisite for **NURS 809**.

### Required Concentration Courses for Post-Master's Entry; No Concentration (Active APRN Required)

6 specialty credit hours (total program 33 credits hours):

Course	Title	Credits
NURS 783	Clinical Project Immersion & Proposal Development <sup>1</sup>	3
NURS 805	Advanced Nursing Leadership	3
<b>Total Credit Hours</b>		<b>6</b>

<sup>1</sup> Indicates practicum course.

### Required Concentration Courses for Post-BSN Entry; Nurse Executive Leadership

33 specialty credit hours (total program 60 credit hours):

Course	Title	Credits
NURS 717	Application of Basic Statistics for Nursing Practice & Service Management	3
NURS 720	Clinical Application of Population Analysis	3
NURS 790	Research Methods for Nursing	3
NURS 734	Conceptual Basis of Health Systems	3
NURS 738	Financing of Health Care	3
NURS 740	Facilitative Processes in Nursing Administration	3
NURS 741	Coordinating Processes in Nursing Administration <sup>1</sup>	3
NURS 742	Integrative Processes in Nursing Administration <sup>1</sup>	3
NURS 806	Nurse Executive Leadership I <sup>1</sup>	3
NURS 807	Nurse Executive Leadership II <sup>1</sup>	3
NURS 809	Advanced Healthcare Financing	3
<b>Total Credit Hours</b>		<b>33</b>

<sup>1</sup> Indicates practicum course.

### Required Concentration Courses for Post-BSN Entry; Family Nurse Practitioner Concentration

47 specialty credit hours (total program 74 credit hours):

Course	Title	Credits
NURS 717	Application of Basic Statistics for Nursing Practice & Service Management	3
NURS 720	Clinical Application of Population Analysis	3
NURS 790	Research Methods for Nursing	3
NURS 707	Advanced Pathophysiology for Nurses	3
NURS 702	Pharmacologic Mgmt in Pediatric, Adult, & Gerontological Patients Across Hlthcare Delivery Continuum	3
NURS 704	Advanced Health Assessment and Diagnostic Reasoning <sup>1</sup>	3
NURS 718	Diagnostic Interpretation and Therapeutic Modalities	3
NURS 756	Advanced Primary Care of Children for the FNP	2
NURS 757	Advanced Primary Care of Women for the FNP <sup>1</sup>	2
NURS 758	Acute Problems in Primary Care for the FNP <sup>2</sup>	6
NURS 759	Management of Common Chronic Health Problems for the FNP <sup>1,2</sup>	6
NURS 760	Family Nurse Practitioner Legal, Ethical, and Role Transition	2
NURS 760A	Family Nurse Practitioner Role Practicum <sup>2</sup>	2



NURS 783	Clinical Project Immersion & Proposal Development <sup>2</sup>	3
NURS 805	Advanced Nursing Leadership	3
<b>Total Credit Hours</b>		<b>47</b>

<sup>1</sup> Indicates on campus immersion course.

<sup>2</sup> Indicates practicum course.

### Required Concentration Courses for Post-BSN Entry; Adult Gerontology Acute Care Nurse Practitioner Concentration

46 specialty credit hours (total program 73 credit hours):

Course	Title	Credits
NURS 717	Application of Basic Statistics for Nursing Practice & Service Management	3
NURS 720	Clinical Application of Population Analysis	3
NURS 790	Research Methods for Nursing	3
NURS 707	Advanced Pathophysiology for Nurses	3
NURS 702	Pharmacologic Mgmt in Pediatric, Adult, & Gerontological Patients Across Hlthcare Delivery Continuum	3
NURS 704	Advanced Health Assessment and Diagnostic Reasoning <sup>1</sup>	3
NURS 718	Diagnostic Interpretation and Therapeutic Modalities	3
NURS 773	Principles of Acute Care Adult and Gerontological Health Problems I <sup>2</sup>	6
NURS 774	Principals of Acute Care Adult and Gerontological Complex Health Problems II <sup>1,2</sup>	6
NURS 778	Advanced Practice Role: Adult Gerontology Acute Care NP (AGACNP)	2
NURS 778A	Practicum of Advanced Practice Role: Adult Gerontology Acute Care NP (AGACNP) <sup>2</sup>	2
NURS 783	Clinical Project Immersion & Proposal Development <sup>2</sup>	3
NURS 805	Advanced Nursing Leadership	3
NURS 772	Introduction of Acute Care Adult and Gerontological Health Problems	3
<b>Total Credit Hours</b>		<b>46</b>

<sup>1</sup> Indicates on campus immersion course.

<sup>2</sup> Indicates practicum course.

### Required Concentration Courses for Post-BSN Entry; Psychiatric Mental Health Nurse Practitioner

47 specialty credit hours (Total 74 Program Credit Hours)

Course	Title	Credits
NURS 717	Application of Basic Statistics for Nursing Practice & Service Management	3
NURS 720	Clinical Application of Population Analysis	3
NURS 790	Research Methods for Nursing	3
NURS 707	Advanced Pathophysiology for Nurses	3
NURS 702	Pharmacologic Mgmt in Pediatric, Adult, & Gerontological Patients Across Hlthcare Delivery Continuum	3

NURS 704	Advanced Health Assessment and Diagnostic Reasoning <sup>1</sup>	3
NURS 718	Diagnostic Interpretation and Therapeutic Modalities	3
NURS 761	Neuroscientific Basis for Pharmacological & Nonpharmacological Treatments for Psychiatric Conditions	4
NURS 763	Advanced Psychiatric Nurse Practicum I: Management of Psychiatric/Mental Health Conditions <sup>2</sup>	6
NURS 764	Advanced Psychiatric Nurse Practicum II: Management of Complex Psychiatric/Mental Health Conditions <sup>2</sup>	6
NURS 768	Psychiatric Mental Health Nurse Practitioner: Legal, Ethical, and Role Transition	2
NURS 768A	Advanced Psychiatric Nurse Practicum III: Role Development <sup>2</sup>	2
NURS 783	Clinical Project Immersion & Proposal Development <sup>2</sup>	3
NURS 805	Advanced Nursing Leadership	3
<b>Total Credit Hours</b>		<b>47</b>

<sup>1</sup> Indicates on campus immersion course.

<sup>2</sup> Indicates practicum course.

## Nursing Science, Ph.D.

The Ph.D. degree is designed to prepare graduates for a lifetime of intellectual inquiry through creative scholarship and research. Students in this doctoral program acquire the knowledge and skills to conduct research that will contribute to furthering nursing science, practice, education, and administration.

## Learning Outcomes

1. Utilize a biobehavioral scientific approach in collaboration with an interdisciplinary team in advancing knowledge to improve health for diverse populations.
2. Demonstrate, through the comprehensive examination, an understanding of the history, theory, and philosophy of science that serve as a foundation for a substantive research area.
3. Generate and communicate new knowledge to public and professional audiences to advance nursing and health.
4. Demonstrate conceptual, methodological, analytical and dissemination skills to advance nursing science within the context of planning, implementing, and evaluating research aimed at improving health and healthcare.
5. Incorporate, through program deliverables and the dissertation proposal, concepts of diversity and inclusion in research, advocacy, and policy to promote health equity.

## Admission

The Ph.D. program offers four entry points for students:

- B.S.N. entry - a Bachelor of Science in nursing degree from a program that is nationally accredited (*Total 75 credit hours*);
- M.S.N. entry - a Bachelor of Science in nursing degree and a master's in nursing degree from nationally accredited programs (*Total 57 credit hours*);

- non-M.S.N. master's entry-a Bachelor of Science in nursing degree from a nationally accredited program and a master's degree in another discipline (*Total minimum 57 credit hours*);
- D.N.P. entry - a Doctor of Nursing practice degree from a nationally accredited program (*Total 39 credit hours*).

## Requirements for earning the Ph.D. degree include:

1. doctoral residency of at least 18 graduate credit hours for three consecutive major semesters. Enrollment in a summer term is not required to maintain continuity, but credits earned during summer terms (including May session) will count toward the 18 hours required for residency. The residency requirement may be met only after admission to the PhD program;
2. completion of an approved program of study totaling not less than 39 credits for D.N.P. entry options (at least 30 credits must be earned at the University of South Carolina); not less than 57 credit hours for master's entry options and not less than 75 credit hours for B.S.N. entry option;
3. completion of the admission-to-candidacy examination at least one full academic year prior to the date on which the degree is to be granted;
4. completion of a foreign language and/or research methods requirement, met through a reading knowledge of a foreign language or competency in statistics/research methods specific to the student's proposed course of study;
5. completion of a mentored research experience under the supervision of College of Nursing faculty (NURS 898);
6. completion of a comprehensive examination taken after admission to candidacy and completion of all course requirements except those courses in which the student is currently enrolled;
7. completion of an oral defense of a doctoral dissertation.

## Course Requirements

All Ph.D. students will take the following courses:

Course	Title	Credits
<b>Core Courses:</b>		
NURS 800	Philosophical and Theoretical Foundations of Nursing Science	3
NURS 801	Theory Analysis and Application for Nursing Science	3
NURS 803	Scientific Knowledge in Nursing	3
NURS 804	The Role of the Nurse Scientist	3
NURS 810	Nursing Research Methods I	3
NURS 811	Nursing Research Methods II	3
NURS 813	Nursing Research Methods III	3
NURS 870	Research Proposal Development	3
NURS 898	Research Internship	3
NURS 899	Dissertation Preparation	12
<b>Total Credit Hours</b>		<b>39</b>

DNP entry students must have completed a graduate level statistics course with a grade of B or higher within the past 5 years prior to enrolling in NURS 810.

## Additional B.S.N<sup>1</sup>, M.S.N. and non-M.S.N master's<sup>2</sup> Entry Student Requirements

Course	Title	Credits
NURS 817	Application of Statistics for Evidence Based Nursing Practice	3
Select a minimum of 15 hours of elective courses as required by advisement of Program of Study committee		15
<b>Total Credit Hours</b>		<b>18</b>

- <sup>1</sup> B.S.N. entry students need to complete 18 credit hours of master's level courses which may be from one of the existing nursing majors or emphasis areas or in an individualized program of study. Typically, enrollment in the master's courses occurs before enrollment in the Ph.D. core courses and includes courses in nursing theory, research methods and entry level statistics.
- <sup>2</sup> non-M.S.N. master's entry students who do not have beginning level graduate courses in nursing theory, research, or statistics equivalent to those required in the UofSC College of Nursing Master of Science in Nursing degree program will need to complete these courses prior to beginning the Ph.D. core courses.

## Psychiatric Mental Health Nurse Practitioner, M.S.N.

The Psychiatric Mental Health Nurse Practitioner (PMHNP) program is designed to prepare graduates to provide holistic, mental health care integrating neuroscientific principles of behavior, experience and psychopharmacology with psychotherapy, consultation and trauma-related care across the lifespan. The PMHNP will be prepared to practice in diverse settings including nurse-managed clinics, inpatient psychiatric facilities, home health, private psychiatric practices, addiction centers, general ambulatory clinics and schools.

This curriculum prepares nurses to sit for national certification as Psychiatric Mental Health Nurse Practitioner.

## Learning Outcomes

- Apply theoretical knowledge to the practice of advanced nursing roles.
- Utilize evidence to address population health problems.
- Demonstrate professionalism at the advanced nursing level in the clinical setting.
- Pursue quality, effectiveness, and innovation in shared leadership of interprofessional health teams.

## Requirements for Earning the M.S.N. Degree Include the Following

1. completion of an approved program of study;
2. completion of an applied research course, NURS 791 (3), or a thesis, NURS 799 (6);
3. a GPA of 3.00 (on a 4.00 scale) on all courses attempted for graduate credit and all courses numbered 700 and above;
4. a GPA of 3.00 (on a 4.00 scale) on all courses on the approved program of study;
5. and passing a comprehensive assessment during the last semester of the program.

## Course Requirements

Total program 47-50 credit hours.

Course	Title	Credits
NURS 700	Theoretical and Conceptual Foundation for Nursing	3
NURS 720	Clinical Application of Population Analysis	3
NURS 717	Application of Basic Statistics for Nursing Practice & Service Management	3
NURS 790	Research Methods for Nursing	3
NURS 791 or NURS 799	Seminar in Clinical Nursing Research Thesis Preparation	3-6
NURS 702	Pharmacologic Mgmt in Pediatric, Adult, & Gerontological Patients Across Hlthcare Delivery Continuum	3
NURS 704	Advanced Health Assessment and Diagnostic Reasoning <sup>1</sup>	3
NURS 707	Advanced Pathophysiology for Nurses	3
NURS 718	Diagnostic Interpretation and Therapeutic Modalities	3
NURS 761	Neuroscientific Basis for Pharmacological & Nonpharmacological Treatments for Psychiatric Conditions	4
NURS 763	Advanced Psychiatric Nurse Practicum I: Management of Psychiatric/Mental Health Conditions <sup>2</sup>	6
NURS 764	Advanced Psychiatric Nurse Practicum II: Management of Complex Psychiatric/Mental Health Conditions <sup>2</sup>	6
NURS 768	Psychiatric Mental Health Nurse Practitioner: Legal, Ethical, and Role Transition	2
NURS 768A	Advanced Psychiatric Nurse Practicum III: Role Development <sup>2</sup>	2
<b>Total Credit Hours</b>		<b>47-50</b>

<sup>1</sup> Indicates on campus immersion course.

<sup>2</sup> Indicates practicum course.

# COLLEGE OF PHARMACY

The University of South Carolina College of Pharmacy is accredited by the Accreditation Council for Pharmacy Education and the Southern Association of Colleges and Schools.

The College of Pharmacy offers the M.S. and Ph.D. degrees in pharmaceutical sciences and is composed of two Departments. The Department of Drug Discovery and Biomedical Sciences ([http://www.sc.edu/study/colleges\\_schools/pharmacy/departments/drug\\_discovery\\_and\\_biomedical\\_sciences/](http://www.sc.edu/study/colleges_schools/pharmacy/departments/drug_discovery_and_biomedical_sciences/)) offers advanced degrees with specialization in the areas of medicinal chemistry, pharmaceuticals, and pharmacology. The Department of Clinical Pharmacy and Outcomes Sciences ([http://www.sc.edu/study/colleges\\_schools/pharmacy/departments/clinical\\_pharmacy\\_and\\_outcomes\\_sciences/](http://www.sc.edu/study/colleges_schools/pharmacy/departments/clinical_pharmacy_and_outcomes_sciences/)) offers advanced degrees with specialization in the area of Pharmacy Administration.

A graduate admissions committee reviews all applicants to the M.S. and Ph.D. programs. Review of complete applications begins by March 1st. The application deadline is April 15th. Preference will be given to applicants with a minimum overall grade point average equivalent of 3.0 on a 4.0 scale, and minimum GRE score of 294 (verbal and quantitative sections combined) and a 4 on the analytical section. Applicants whose native language is not English are also required to submit a satisfactory score on an approved test of English language proficiency.

For advanced degrees in the disciplines of medicinal chemistry, pharmaceuticals, or pharmacology, an undergraduate degree in pharmacy or in related physical sciences, such as chemistry, biochemistry, or biology, is recommended. For advanced degrees in pharmacy administration, an undergraduate or professional degree in pharmacy or a health-related discipline is recommended. Requests for information regarding programs, policies, and the admission process can be submitted electronically via the website of the University of South Carolina at <http://www.gradschool.sc.edu/> (<http://www.gradschool.sc.edu/>).

## Programs

- Pharmaceutical Sciences, M.S.
- Pharmaceutical Sciences, Ph.D.

## Pharmaceutical Sciences, M.S.

The University of South Carolina College of Pharmacy offers the MS in Pharmaceutical Sciences with an emphasis in either:

- Drug Discovery and Biomedical Sciences through the Department of Drug Discovery and Biomedical Sciences (DDBS), or
- Pharmacy Administration through the Department of Clinical Pharmacy and Outcomes Sciences (CPOS).

The learning outcomes are similar for both options in that students will demonstrate a proficiency in their respective fields. Specifically, students will be able to:

1. Demonstrate a basic knowledge of the theories, principles and methods underlying the pharmaceutical sciences as they relate to the area of emphasis.

2. Identify a research problem, formulate a research plan, analyze data and communicate findings through oral presentations, abstracts, and papers.
3. Critically analyze and synthesize relevant literature.

## Drug Discovery and Biomedical Sciences

The MS track in Drug Discovery and Biomedical Sciences requires a minimum of 30 hours beyond the baccalaureate degree, including at least 9 credit hours of thesis preparation. The MS degree requirements include an admission-to-candidacy examination, a comprehensive examination, and a thesis.

## Pharmacy Administration

Students who enter the MS program in Pharmacy Administration with a post-baccalaureate degree (BS or PharmD) must successfully complete at least 35 hours of graduate course work, including at least 6 credit hours of thesis. The MS degree requirements include an admission-to-candidacy examination, a comprehensive examination, and a thesis.

## MS Degree, Drug Discovery and Biomedical Sciences Option

1. A research advisor must be chosen by the end of the first year.
2. Admission to candidacy must occur by the end of the third semester, and includes the following: a.) Submission of a program of study form. Satisfactory completion of all coursework taken in the first three semesters will be evaluated by the committee. b.) Submission of a written initial research proposal, followed by an oral presentation and defense of the proposal to the thesis committee.
3. The comprehensive written and oral examination must be completed.
4. A written thesis, along with an oral presentation and defense, is required for the completion of the MS degree.

In addition to the general requirements listed above, candidates for the MS degree are required to complete two departmental seminar courses.

Course	Title	Credits
<b>Required Courses:</b>		
PHAR 700	Principles of Pharmacology, Medicinal Chemistry, and Pharmaceutics	4
PHAR 701	Current Topics in Pharmaceutical Sciences	4
PHAR 712A	Seminar in Pharmaceutical Sciences <sup>1</sup>	1
PHAR 712B	Seminar in Pharmaceutical Sciences <sup>1</sup>	1
PHAR 799	Thesis Preparation	1-6
<b>Select 11 hours of electives <sup>2</sup></b>		<b>11</b>

<sup>1</sup> A maximum of 2 hours credit can be earned for PHAR 712.

<sup>2</sup> Electives will be chosen based on the needs of the graduate student. Areas of emphasis include Biomedicinal Chemistry, Synthetic Medicinal Chemistry, Pharmaceuticals, and Pharmacology. Electives will be chosen based on the area of emphasis and must be approved by the advisory committee and the Graduate Program Director. Electives must be 700 level and above, or any course approved by the Graduate School for Graduate Credit.

## MS Degree, Pharmacy Administration Option

All students must successfully complete at least 35 hours of graduate course work. In addition to the general requirements listed above, candidates for the MS degree are required to complete two departmental

seminar courses (PHAR 711 A-B). All students must submit a thesis based upon original research, meeting all requirements of The Graduate School prior to award of the degree. No more than six hours of credit for PHAR 799 will be allowed for thesis research and writing. Further degree requirements are listed below

Course	Title	Credits
PHAR 711	Seminar in Pharmacy Administration (A-B)	1
PHAR 740	Socio-Economics of Pharmacy Practice	3
PHAR 742	Research Methods in Pharmaceutical and Health Outcomes Sciences	3
PHAR 748	Principles of Pharmacoeconomics	3
ECON 720	Managerial Economics	3
MKTG 701	Marketing Management	3
ACCT 728	Financial Accounting	3
ACCT 729	Managerial Accounting	3
BIOS 700	Introduction to Biostatistics <sup>1</sup>	3
or BIOS 701	Concepts and Methods of Biostatistics	
BIOS 757	Intermediate Biostatistics	3
PHAR 799	Thesis Preparation	1-6

<sup>1</sup> STAT 515/516 may be substituted for BIOS 701/757

## Pharmaceutical Sciences, Ph.D.

### Learning Outcomes

- Students will demonstrate proficiency in understanding principles of medicinal chemistry, pharmacology, and pharmaceuticals. Students will also demonstrate knowledge in techniques of biochemistry, molecular biology, and physiology as applied to pharmaceutical research.
- Students will be able to identify pertinent research problems, and formulate a research plan.
- Students will be able to critically analyze relevant literature, and to communicate scientific findings with oral presentations.
- Students will be able to generate and analyze original research results, and to communicate these results to the scientific community.
- Within five years of graduation with their PhD degree, students will be engaged in professional careers and/or postdoctoral fellowship.
- Over time, graduates of our program will be successful in professional careers.

## Degree Requirements (60-61 Hours Post-baccalaureate)

### Drug Discovery and Biomedical Sciences

The Ph.D. track in Drug Discovery and Biomedical Sciences requires a minimum of 60 hours beyond the baccalaureate degree, or a minimum of 30 hours beyond the master's degree as approved by advisement, including at least 12 credit hours of dissertation preparation. The Ph.D. degree requirements include an admission-to-candidacy examination, a comprehensive examination, and a dissertation.

### Pharmacy Administration

Students who enter the Ph.D. program in Pharmacy Administration with a post-baccalaureate degree (BS or PharmD) must successfully complete at least 61 hours of graduate course work. Students who enter the Ph.D.

program in Pharmacy Administration with a Masters of Science (MS) degree in a health-related field must successfully complete at least 37 hours of graduate course work beyond the MS as approved by the advisor, including at least 12 credit hours of dissertation preparation.

The Ph.D. degree requirements include an admission-to-candidacy examination, a comprehensive examination, and a dissertation.

## In the Department of Drug Discovery and Biomedical Sciences

1. A research advisor must be chosen by the end of the first year.
2. Admission to candidacy must occur by the end of the second year, and includes the following:
  - a. Submission of a doctoral program of study form. Satisfactory completion of all coursework taken in the first two years will be evaluated by the committee.
  - b. Submission of a written initial research proposal, followed by an oral presentation and defense of the proposal to the thesis committee.
3. The comprehensive written and oral examination must be completed by the end of the third year.
4. A written dissertation, along with an oral presentation and defense, is required for the completion of the Ph.D. degree

In addition to the general requirements listed above, candidates for the Ph.D. degree are required to complete four departmental seminar courses:

### Ph.D., Pharmaceutical Sciences (60 Hours)

#### Required Courses

Course	Title	Credits
PHAR 700	Principles of Pharmacology, Medicinal Chemistry, and Pharmaceuticals	4
PHAR 701	Current Topics in Pharmaceutical Sciences	4
PHAR 712A	Seminar in Pharmaceutical Sciences <sup>1</sup>	1
PHAR 712B	Seminar in Pharmaceutical Sciences <sup>1</sup>	1
PHAR 712C	Seminar in Pharmaceutical Sciences <sup>1</sup>	1
PHAR 712D	Seminar in Pharmaceutical Sciences <sup>1</sup>	1
Select 12 hours of electives <sup>2</sup>		12
<b>Total Credit Hours</b>		<b>24</b>

<sup>1</sup> A maximum of 4 hours credit can be earned for PHAR 712.

<sup>2</sup> Electives will be chosen based on the needs of the graduate student. Areas of emphasis include Biomedical Chemistry, Synthetic Medicinal Chemistry, Pharmaceuticals, and Pharmacology. Electives will be chosen based on the area of emphasis and must be approved by the Ph.D. advisory committee and the Graduate Program Director. Electives must be 700 level and above, or any course approved by the Graduate School for Graduate Credit

### Doctoral Directed Research (24 Hours)

Course	Title	Credits
PHAR 896	Doctoral Directed Research <sup>1</sup>	1-6
<b>Total Credit Hours</b>		<b>1-6</b>

<sup>1</sup> Other didactic electives may be applied toward the total hours of credit required if approved by the Ph.D. advisory committee.

**Dissertation Preparation (12 Hours)**

Course	Title	Credits
PHAR 899	Dissertation Preparation	12
<b>Total Credit Hours</b>		<b>12</b>

**Concurrent Pharm.D. and Ph.D. (60 Hours minimum)**

In addition to the general requirements listed above, students pursuing the Pharm.D. and Ph.D. concurrently will take elective courses that are approved for graduate credit and fulfill requirements for the Ph.D. program. Electives in the Pharm.D. curriculum: up to nine credit hours can count toward both degrees, with the following stipulations. The student must have completed at least 90 hours of undergraduate course work, have a minimum GPA of 3.40, and have form GS-59 on file in The Graduate School. A grade of **B** or higher must be earned for the course to count for graduate credit. At least half of the electives must be numbered 700 or above. Courses numbered 500-699 are acceptable only if they have been approved for graduate credit. Graduate courses taught in units other than pharmacy must be approved by the graduate faculty of pharmacy as appropriate for a Ph.D. degree in pharmaceutical sciences. Registration for each course requires approval of the student's advisor, the chair of the student's department, the graduate director of the Ph.D. program, and the dean of The Graduate School. Form GS-59A must be processed for each graduate credit course at the time of registration to permit the registrar's office to properly enroll the student for graduate credit.

**Required Courses**

Course	Title	Credits
PHAR 712A	Seminar in Pharmaceutical Sciences	1
PHAR 712B	Seminar in Pharmaceutical Sciences	1
PHAR 712C	Seminar in Pharmaceutical Sciences	1
PHAR 712D	Seminar in Pharmaceutical Sciences	1
<b>Total Credit Hours</b>		<b>4</b>

**Electives**

Course	Title	Credits
Select up to three graduate-level courses taken as electives for the Pharm.D. <sup>1</sup>		0-9
Select two to five graduate-level courses not taken for the Pharm.D. degree		7-15
<b>Total Credit Hours</b>		<b>7-24</b>

<sup>1</sup> Electives must be approved by the Ph.D. advisory committee as appropriate for one of the following specialty areas.

**Doctoral Directed Research (up to 29 Hours)**

Course	Title	Credits
PHAR 896	Doctoral Directed Research <sup>1</sup>	1-6
<b>Total Credit Hours</b>		<b>1-6</b>

<sup>1</sup> Other didactic electives may be applied toward the total hours of credit if approved by the Ph.D. advisory committee.

**Dissertation Preparation (12 Hours)**

Course	Title	Credits
PHAR 899	Dissertation Preparation	12
<b>Total Credit Hours</b>		<b>12</b>

**In the Department of Clinical Pharmacy and Outcomes Sciences**

The Ph.D. in Pharmaceutical Sciences with an emphasis in Pharmacy Administration prepares the graduate for many careers in academia and the pharmaceutical industry. The program is designed to meet the specific needs and objectives of the student and provide a strong foundation of course work and experiences in the areas of pharmaceutical outcomes research. In addition to the core coursework, students select a minor field to develop additional expertise in economics, pharmacoepidemiology, biostatistics, marketing or health policy. The program has a strong emphasis on developing quantitative, analytical and data management skills and uses a multidisciplinary approach in teaching and research activities.

Students who enter the Ph.D. program in Pharmacy Administration with a post-baccalaureate degree (BS or PharmD) must successfully complete at least 61 hours of graduate course work. Students who enter the Ph.D. program in Pharmacy Administration with a Masters degree in a related field must successfully complete at least 37 hours of graduate course work.

After enrolling in the program, the student must choose a research advisor by the end of the first year of enrollment. Admission to candidacy must occur by the end of the second year after passing a qualifying examination based on all courses completed in the business and analytical core. The comprehensive written and oral examination must be completed by the end of the third year of the program. A written dissertation, along with an oral presentation and defense, is required for the completion of the Ph.D. degree.

**Ph.D. Pharmacy Administration Option (61 Hours Minimum Post-Baccalaureate)****Pharmacy Core (28 hours)**

Course	Title	Credits
PHAR 711A	Seminar in Pharmacy Administration	1
PHAR 711B	Seminar in Pharmacy Administration	1
PHAR 711C	Seminar in Pharmacy Administration	1
PHAR 711D	Seminar in Pharmacy Administration	1
PHAR 740	Socio-Economics of Pharmacy Practice	3
PHAR 741	Pharmaceutical Outcomes Database Development	3
PHAR 742	Research Methods in Pharmaceutical and Health Outcomes Sciences	3
PHAR 748	Principles of Pharmacoeconomics	3
PHAR 899	Dissertation Preparation	12
<b>Total Credit Hours</b>		<b>28</b>

**Business Core (12 hours)**

Course	Title	Credits
ECON 720	Managerial Economics	3
MKTG 701	Marketing Management	3
ACCT 728	Financial Accounting	3
ACCT 729	Managerial Accounting	3
<b>Total Credit Hours</b>		<b>12</b>

**Analytic Core (12 hours)**

Course	Title	Credits
BIOS 700	Introduction to Biostatistics	3
or STAT 515	Statistical Methods I	
BIOS 757	Intermediate Biostatistics	3

or STAT 516	Statistical Methods II	
BIOS 754	Discrete Data Analysis	3
or STAT 518	Nonparametric Statistical Methods	
EPID 701	Concepts and Methods of Epidemiology	3
<b>Total Credit Hours</b>		<b>12</b>

#### Minor/Cognate (9 Hours Minimum)

Students in the Ph.D. in Pharmacy Administration must also take at least 9 hours of minor/cognate graduate level courses in one of the following areas: biostatistics, marketing, health policy, economics, or epidemiology. Minor/cognate courses will be identified and approved by the major advisor and graduate director in consultation with the student.

#### Ph.D. Pharmacy Administration Option (37 Hours Minimum Post-Masters)

Students who enter the Ph.D. program in Pharmacy Administration with a Masters degree in a related field must successfully complete at least 37 hours of graduate course work. As part of the core pharmacy requirements, candidates for the Ph.D. degree in Pharmacy Administration are required to complete four departmental seminar courses (PHAR 711A-D). A maximum of 4 hours credit can be earned for PHAR 711. Students must also take at least 9 hours of minor/cognate courses in one of the following areas: biostatistics, marketing, health policy, economics, or epidemiology. Minor/cognate coursework will be determined by the advisor and graduate director in consultation with the student.

All students are required to submit a dissertation based upon original research, meeting all requirements of The Graduate School prior to award of the degree.

#### Required Courses (28 hours)

Course	Title	Credits
PHAR 711A	Seminar in Pharmacy Administration	1
PHAR 711B	Seminar in Pharmacy Administration	1
PHAR 711C	Seminar in Pharmacy Administration	1
PHAR 711D	Seminar in Pharmacy Administration	1
PHAR 740	Socio-Economics of Pharmacy Practice	3
PHAR 741	Pharmaceutical Outcomes Database Development	3
PHAR 742	Research Methods in Pharmaceutical and Health Outcomes Sciences	3
PHAR 748	Principles of Pharmacoeconomics	3
PHAR 899	Dissertation Preparation	12
<b>Total Credit Hours</b>		<b>28</b>

Additional coursework may be required as part of the program of study for post-MS entrants. Additional coursework will be determined by the advisor and graduate director after considering the skills, competencies and experiences of the post-MS student.

#### Minor/Cognate (9 Hours Minimum)

Students in the Ph.D. in Pharmacy Administration must also take at least 9 hours of minor/cognate graduate level courses in one of the following areas: biostatistics, marketing, health policy, economics, or epidemiology. Minor/cognate courses will be identified and approved by the major advisor and graduate director in consultation with the student.

# ARNOLD SCHOOL OF PUBLIC HEALTH

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G. Thomas Chandler, *Dean*

Alan Decho, *Associate Dean for Research*

James Hardin, *Associate Dean for Faculty Affairs and Curriculum and Interim Chair, Department of Health Services Policy and Management*

Lee Pearson, *Associate Dean for Operations and Accreditation*

Toni Torres-McGehee, *Associate Dean for Diversity, Equity and Inclusion*

Sara J. Corwin, *Associate Dean for Undergraduate Student Affairs*

Jean Neils-Strunjas, *Chair, Department of Communication Sciences and Disorders*

Geoff Scott, *Chair, Department of Environmental Health Sciences*

Anthony Alberg, *Chair, Department of Epidemiology and Biostatistics*

Shawn M. Arent, *Chair, Department of Exercise Science*

Daniela Friedman, *Chair, Department of Health Promotion, Education, and Behavior*

Public Health is an exciting and growing field of study. The field challenges its professionals to confront complex health issues, such as improving access to health care, controlling infectious disease, and reducing environmental hazards, violence, substance abuse, and injury. Professionals in Public Health come from varying educational backgrounds and can specialize in an array of fields. A host of specialists, including teachers, journalists, researchers, administrators, environmentalists, demographers, social workers, laboratory scientists, physicians, and attorneys, work to protect the health of the public. This is a field geared toward serving local, national, and international communities. Public Health professionals are leaders who meet the many exciting challenges in protecting the public's health today and in the future. The Arnold School of Public Health was established by legislative action in 1974 and has been fully accredited by the Council on Education for Public Health (CEPH) since 1979.

The mission of the Arnold School of Public Health is to improve population health and well-being by fostering innovative education and research that promotes health and healthy environments and will use that knowledge to prevent and effectively respond to disease, disability, and environmental degradation in diverse communities. An integral part of the training of students at the school is participation in research activities. Since the state is experiencing rapid demographic and industrial changes, health problems range from those of a traditional rural setting (infectious diseases, infant mortality, access to health care) to those of a modern industrial setting (impact of new industries on air and water quality and the safety of the workplace). The school has been committed to "action research" since its inception. The importance of dealing with operating programs and defined problems has led to close working relationships with human service programs, health care facilities, and governmental agencies throughout the state and region.

The school contains the Prevention Research Center, the Core for Applied Research and Evaluation, the Nutrition Consortium, the Cancer Prevention and Control Program, the Office for the Study of Aging, the Rural and Minority Health Research Center, the Consortium for the Latino Immigration Studies, the Center for Community Health Alignment, the PASOs Program, the Community Health Worker Institute and the Montgomery Speech-Language-Hearing Clinic.

## Degrees Offered

The Arnold School of Public Health offers graduate programs of study leading to the degrees of Doctor of Philosophy (Ph.D.), Master of Public Health (M.P.H.), Master of Science (M.S.), and Master of Science in Public Health (M.S.P.H.). The Department of Exercise Science also offers the Doctor of Physical Therapy (D.P.T.); the Department of Communication Sciences and Disorders offers study that leads to the Master of Science (M.S.) in Speech-Language Pathology in two modalities, full-time face-to-face/residential (MS-Res) and part-time via distance-education (MS-DE); and the Department of Health Services Policy and Management also offers a Master of Health Administration (M.H.A.).

A Master of Social Work/M.P.H. dual degree is offered in cooperation with the College of Social Work. A dual Juris Doctor/M.H.A. is offered in cooperation with the School of Law. Within the Arnold School, a student can earn a dual PhD in Epidemiology and Environmental Health Sciences. The Certificate of Graduate Study in Health Communication is administered by the Department of Health Promotion, Education, and Behavior; the School of Journalism and Mass Communications; and the School of Library and Information Science. The Department of Health Promotion, Education, and Behavior also offers graduate certificates in Global Health and in Aging. The Department of Environmental Health Sciences offers a graduate certificate in Environmental Nanoscience and Risk.

## Admission Requirements

Requirements for admission conform to the general regulations of The Graduate School of the University of South Carolina including satisfactory scores on the Graduate Record Examination, unless otherwise indicated in the program documentation. In addition, applicants must submit official transcripts of their entire academic record, evidence of academic performance at a B or better level, a curriculum vitae or resume, a brief statement of professional goals and objectives, and at least two letters of recommendation. Programs may have additional admission requirements.

## Departments

- Communication Sciences Disorders (p. 400)
- Environmental Health Sciences (p. 406)
- Epidemiology and Biostatistics (p. 411)
- Exercise Science (p. 429)
- Health Promotion, Education, and Behavior (p. 441)
- Health Services Policy and Management (p. 447)
- Public Health Programs (Division of Academic Affairs) (p. 455)

## Communication Sciences Disorders

Department Website (<http://www.sph.sc.edu/comd/>)

Jean Neils-Strunjas, *Chair*

The Department of Communication Sciences and Disorders offers graduate training leading to the master's and doctoral degrees. The master's program is a professional degree program intended to prepare students for the clinical practice of speech-language pathology. The program has been continuously accredited for more than 30 years by the Council for Academic Accreditation of the American Speech-Language-Hearing Association (ASHA). Graduates of the master's program are eligible for their state license to practice speech-language pathology, a teaching certificate from the South Carolina State Department of



Education, and board certification from ASHA (the Certification for Clinical Competence in Speech-Language Pathology). The Department provides two paths to the master's degree in speech-language pathology. The Master of Science (M.S.) in Speech-Language Pathology degree in the residential modality (MS-Res) is the traditional, on-campus program in which students are continuously enrolled on a full-time basis for two calendar years. The Master of Science (M.S.) in Speech-Language Pathology degree in the distance-education modality (MS-DE) is a part-time degree program, offered through distance education, requiring three to four years of study, depending on a student's prior academic training.

The Doctor of Philosophy (Ph.D.) degree in Communication Sciences and Disorders is designed to prepare individuals for careers in research and the scholarly study of the science of human communication and its disorders. Doctoral students, under the direction of a mentor, regularly participate in laboratory activities and pursue a program of scholarly research leading to publication in scientific journals and grant writing. The Ph.D. is an academic degree and focuses on providing students with the skills necessary to be successful university professors at research-1 institutions.

## Academic Requirements for Progression

Students pursuing a graduate degree in the Department of Communication Sciences and Disorders may not receive more than 11 semester hours of grades below B. Upon receipt of the twelfth semester hour of C+ or below, the student becomes academically ineligible to continue in the program. It should be noted that this academic requirement is more stringent than that of The Graduate School, which requires only that students maintain an overall graduate grade point average of 3.0.

## Montgomery Speech-Language-Hearing Clinic

The Montgomery Speech-Language-Hearing Clinic is one of more than 600 practicum sites where students pursuing their master's degree in speech-language pathology receive supervised clinical experience. Clinical services include speech, language, and hearing evaluations and treatment for persons of all ages, including University students and faculty members. The Clinic is located at 1705 College Street, Suite 220, Columbia, SC 29208 and employs three audiologists, nine speech-language pathologists, and four staff members.

## Department Admissions Requirements

Due to the large number of applications received each year, admission to the master's degree programs in speech-language pathology is highly competitive. The mean four-year undergraduate GPA for those admitted during the previous year was 3.75 (on a 4.0-point scale), while the average Verbal and Quantitative scores on the Graduate Record Exam were 154 and 15, respectively. Admission is holistic, and for 2021, submission of GRE scores is not required, but optional.

All applicants to the graduate programs in Communication Sciences and Disorders must have completed college-level coursework in the following four areas before entering our program:

1. a biological science,
2. a social/behavioral science,
3. statistics, and
4. chemistry or physics.

Under no circumstances will a student be permitted to begin our master's degree program unless all four of these prerequisite courses have been completed. Previous coursework in speech-language pathology is not a requirement for admission to the master's degree program and only affects the point of entry into the program.

While students' undergraduate major and post baccalaureate courses are not a consideration for admission, they do affect when students begin their master's program. Students in the MS-Res program begin course work during the fall semester while students in the MS-DE program begin in the summer, provided they have completed a minimum of 25 clock hours of supervised observation plus three semester hours of coursework in each of the following:

- anatomy and physiology of the speech and hearing mechanism
- phonetics
- language development
- articulation disorders.

MS-Res students who have not met these requirements enter the program in the summer; MS-DE students who have not met these requirements enter the program in the fall.

Since the purpose of the Ph.D. program is to prepare communication scientists to fill faculty positions at Research I institutions, applicants should demonstrate an interest in pursuing a career in scholarly teaching and research. Completion of a masters thesis, research presentations at professional meetings, published abstracts and peer review articles are examples of items on an applicant's resume that show evidence of a research interest.

Applicants to the Ph.D. program should specify, in the personal statement accompanying their application, their area of research interest. The department currently has laboratories supporting research in neuroimaging, adult neurogenetics, voice disorders and instrumentation, and child language. For information on this research and these laboratories, go to the department's research web sites: <http://www.sph.sc.edu/comd/research.htm>.

## Programs

- Communication Sciences and Disorders, Ph.D. (p. 404)
- Speech-Language Pathology, M.S. (p. 405)

## Courses

### COMD 500 - Introduction to Speech-Language Pathology and Audiology (3 Credits)

Human communication disorders with an overview of prevention and treatment programs.

### COMD 501 - Anatomy and Physiology of Speech and Hearing Mechanisms (3 Credits)

An intensive study of the anatomy and physiology of the speech and hearing mechanisms.

### COMD 507 - Language Theory and Phonetics (3 Credits)

Study of language theory and international phonetics alphabet transcription.

**COMD 521 - Introduction to Clinical Procedures in Speech Pathology (1 Credit)**

Diagnostic and therapeutic programs for the communicatively handicapped will be observed in the public school and various rehabilitative settings. Discussion and study of basic therapeutic theories and procedures utilized in speech therapy. Introduction to phonetics or equivalent or permission of instructor.

**COMD 525 - Selected Topics (1-3 Credits)**

Presentation of current experimental or innovative programs in diagnosis and treatment of the communicatively impaired. Course is designed to update the practicing clinician in specific areas of expertise. May be repeated for credit. Individual topics to be announced by title. Permission of instructor.

**COMD 526 - Disorders of Articulation: Evaluation and Therapy (3 Credits)**

The diagnosis and treatment of articulation problems in children and adults, including analysis of current research in testing and therapy for articulation disorders.

**Prerequisites:** COMD 501 and COMD 507 or equivalents.

**COMD 560 - Observation of Speech Language Pathology (1-3 Credits)**

Introduction to the clinical process through observation of various diagnostic reports and intervention programs included.

**COMD 570 - Introduction to Language Development (3 Credits)**

The language acquisition process in normal children, including the development of semantics, morphology, syntax, phonology, and pragmatics; American dialects and bilingualism.

**Prerequisites:** COMD 501 and COMD 507.

**Cross-listed course:** LING 570

**COMD 700 - Advanced Seminars in Speech Sound Disorders (3 Credits)**

Study of advanced alternative procedures for the evaluation and management of individuals with significant phonological disturbances.

**COMD 701 - Stuttering: Evaluation and Therapy (1-3 Credits)**

An introduction to the problem of stuttering; its possible causes; the management and training of clients.

**COMD 702 - Cleft Palate-Craniofacial Disorders: Evaluation and Management (1-3 Credits)**

Nature, diagnosis and treatment of cleft palate and craniofacial anomalies.

**COMD 703 - Genetics of Communication Disorders (1 Credit)**

Genetic factors that contribute to disorders of speech, language, and hearing.

**COMD 704 - Disorders of Voice: Evaluation and Therapy (1-3 Credits)**

The diagnosis and treatment of voice disorders in children and adults. The neurological, physiological, and psychological bases of voice disorders will be considered.

**COMD 705 - Adult Speech, Language, and Cognitive Disorders (3 Credits)**

Neuropathological bases for language disorders in adults; includes differential diagnosis and remediation techniques.

**Prerequisite or Corequisite:** COMD 744.

**COMD 706 - Preschool Language Development and Disorders (3 Credits)**

Components of communication, oral language, and speech in preschool children with diverse problems across all aspects of language learning, including factors that serve as precursors to literacy skills as well as evidence-based approaches to language assessment and intervention.

**COMD 707 - Clinical Evaluation in Communicative Disorders (1-3 Credits)**

Assigned readings and reports combined with clinical practice in the evaluation of cases in areas such as aphasia, cerebral palsy, voice disorders, articulation problems, stuttering, or cleft palate.

**COMD 708 - Directed Study in Speech Pathology (3 Credits)**

Directed readings and/or research in speech pathology. May be repeated for credit.

**COMD 709 - Laryngectomy Clinical Management (1-3 Credits)**

Pre- and postoperative clinical management of the laryngeal patient with emphasis on communication and related problems.

**COMD 710 - Selected Topics in Speech Pathology (1-3 Credits)**

Individually assigned directed readings in speech pathology. May be repeated for credit when the topics covered or subject matter is different.

**COMD 711 - Seminar in Speech Pathology (1-3 Credits)**

An in-depth study of selected issues. May be repeated for credit when the topics covered or subject matter is different.

**COMD 712 - Management and Coordination of Programs in Speech Pathology and Audiology (1-3 Credits)**

A study of management systems in funding, scheduling, and case load.

**COMD 713 - Neurogenic Disorders of Speech (1-3 Credits)**

Clinical management of the neurogenic speech disorders. Major emphasis on neuroanatomy and pathophysiology; sign and symptoms, etiology, and the diagnosis and treatment of the major disorders.

**Prerequisite or Corequisite:** COMD 502, COMD 700, AND COMD 724 or equivalent course.

**COMD 714 - Gerontology and Communicative Disorders (1-3 Credits)**

Aging, communicative processes and problems associated with aging, and specific communicative disorders associated with aging. Methods of assessment and rehabilitation will be considered.

**COMD 715 - Augmentative Communication: Assessment and Intervention (1-3 Credits)**

A study of historical perspectives, current issues, assessment, intervention techniques, and training strategies in augmentative communication.

**COMD 716 - Public Health Perspectives in Communication Sciences and Disorders (1 Credit)**

Public health issues and historical context related to speech, language, and hearing from local, national and global perspectives.

**COMD 717 - Professional Issues in Speech-Language Pathology (1 Credit)**

Issues affecting speech-language pathologists including professional education, certification, licensure, legislation, standards, and ethics.

**Prerequisites:** COMD 521 and COMD 712.

**COMD 720 - School-Age Language & Literacy Development and Disorders (3 Credits)**

The relationship between oral and written language and factors that impact reading and writing (phonological awareness, phonics, vocabulary). Reading (word-level, comprehension, fluency) and writing (composition, spelling) development, assessment, intervention and issues related to delivery of literacy services in the schools.

**COMD 721 - Cognitive Rehabilitation (1-3 Credits)**

Traumatic brain injury and implications for speech and language function including diagnostic evaluation and remediation.

**Prerequisite or Corequisite:** COMD 502 or equivalent course.

**COMD 722 - Dysphagia (1-3 Credits)**

Normal function and pathological changes of the swallowing mechanism, including evaluation and therapeutic techniques.

**COMD 723 - Language Disorders in Adolescents (1-3 Credits)**

Diagnosis and treatment of communication problems in adolescent children, including educational psychosocial sequelae.

**COMD 724 - Introduction to Medical Speech-Language Pathology (1 Credit)**

Practical application skills for speech-language pathology in the medical setting.

**COMD 725 - Pediatric Dysphagia (1-3 Credits)**

Anatomical and physiological orientation to oral-pharyngeal swallowing disorders in young children.

**Prerequisite or Corequisite:** COMD 502, COMD 722, AND COMD 724 or equivalent course.

**COMD 726 - Advanced Cognitive Retraining (3 Credits)**

Issues in traumatic brain injury and implications for speech and language function.

**COMD 727 - Advanced Study of Literacy for Speech-Language Pathologists (2 Credits)**

Theories of reading development with regard to their implications for assessment and intervention. Connections between oral and written language skills, including vocabulary as a link between word level and text-level skills. Overall framework for thinking about literacy as a multi-component language skill.

**COMD 735 - Counseling in Speech-Language Pathology (2 Credits)**

The use of counseling skills by speech-language pathologists regarding the impact of communication disorders on the family system, the importance of interpersonal communication in counseling, and the principles and processes of counseling in facilitating behavior change.

**COMD 738 - The Speech Pathologists Role in Working with Children with Autism Spectrum Disorders (2 Credits)**

Speech-language pathologists (SLPs) are key team members in the assessment and treatment of individuals with Autism Spectrum Disorders (ASD), with 90% of school-based SLPs serving children with ASD. This course is intended to prepare students for the assessment and interventions targeting language and communication skills for children with ASD.

**COMD 744 - Neurocognitive Bases of Language Behavior (3 Credits)**

Neurocognitive bases for speech and language in the central nervous system including anatomy and physiology and theoretical constructs of language.

**Prerequisites:** COMD 501.

**COMD 745 - Introduction to Speech Science and Acoustic Measurement (3 Credits)**

The physical and related psychological attributes of speech. Use of electronic instruments and laboratory practices in measurement of acoustic variables. Introduction to information theory.

**Prerequisites:** COMD 501 and COMD 507.

**COMD 748 - Speech Pathology Management of Patients with Tracheostomy & Ventilator Dependency (2 Credits)**

Communication options and dysphagia management for speech-language pathologists working with tracheostomized patients.

**Prerequisites:** COMD 722.

**COMD 750 - Introduction to Audiology and Aural Habilitation (3 Credits)**

Basic anatomy and psycho-physics of hearing, pathologies of hearing loss, introduction to identification procedures including hearing screening and pure-tone audiometry, impact of hearing loss on preschool and school-aged children, and educational, psychological, and medical aspects of auditory habilitation.

**Prerequisites:** COMD 507 and COMD 504.

**COMD 754 - Aural (Re)Habilitation of Children and Adults (3 Credits)**

Effects of hearing loss on a child's development and also on adult function and quality of life (linguistic, intellectual, social, and educational). Communication assessment and case management, including parent and patient training, education, and counseling.

**Prerequisite or Corequisite:** COMD 501, COMD 745, and COMD 750 or their equivalent.

**COMD 755 - Aural Rehabilitation of Adults (3 Credits)**

Comprehensive rehabilitation of hearing-impaired adults with emphasis upon amplification, auditory training, and speech reading in developing communication skills.

**COMD 760 - Cochlear Implants (3 Credits)**

Anatomy and physiology of the normal cochlea and the eighth cranial nerve. Evoked otoacoustic emissions as a diagnostic medium. Cochlear pathology with emphasis on candidacy for cochlear implantation.

**COMD 761 - Habilitation of Individuals with Cochlear Implants (1-3 Credits)**

Clinical techniques for the communication assessment and habilitation of the child post cochlear implantation.

**COMD 762 - Aural Habilitation: Manual Communication (1-3 Credits)**

Basic sign vocabulary for speech-language pathologists' professional use with hearing-impaired clients. Focus on the nature and components of manual language systems.

**COMD 772 - Practicum in Speech Language Pathology and Audiology (1-13 Credits)**

Supervised clinical practice in screening, diagnosis, and therapy.

**COMD 774 - Internship in Speech Pathology (3-13 Credits)**

Supervised internship in diagnosis and treatment of children and adults with communicative disorders in clinical and public school settings in field situations.

**COMD 790 - Introduction to Research in Speech Pathology and Audiology (3 Credits)**

An introduction to research methods applicable to and utilized in speech pathology and audiology. An analysis of basic and applied research.

**COMD 791 - Research Methodology (3 Credits)**

Preparation of research designs, procedures of sampling and use of statistical measures.

**COMD 799 - Thesis Preparation (1-9 Credits)****COMD 800 - Seminar in Speech Pathology (3 Credits)**

An in depth exploration of problems, theories, and research in a specific area of speech pathology. May be repeated for credit when the topic(s) covered is different. Individual topics to be announced with title.

**COMD 801 - Advanced Topics in Speech Pathology (3 Credits)**

A series of lectures, presentations, and discussion sessions in a selected area of speech pathology. May be repeated for credit when the topic(s) covered is different. Individual topics to be announced with title.

**COMD 802 - Contemporary Issues In Speech Pathology (3 Credits)**

Issues of local, state, and national import related to the prevention or solution of problems in speech pathology.

**COMD 803 - Advanced Study of Clinical Phonology (3 Credits)**

Introduction to nonlinear phonological theory (e.g., autosegmental, metrical) and its application for assessment and intervention of children with phonological disorders.

**COMD 805 - Advanced Study of Language Disorders in Adults (3 Credits)**

Theories of language processing, language development, and the effects of neural pathology on the normal language process.

**COMD 820 - Advanced Speech Science (3 Credits)**

Advanced study of the physical and related psychological attributes of sound and measurement of acoustic variables of sound and speech. Review of current research in speech science.

**COMD 821 - Advanced Hearing Science (3 Credits)**

The normal auditory system; middle ear and cochlear physiology as determiners of auditory psychophysics.

**COMD 822 - Normal Bases of Speech Production (3 Credits)**

Processes underlying speech production, including neural control, respiration, phonation, and articulation; theories explaining the processes; measurements of physical properties of speech.

**COMD 823 - Normal Bases of Language (3 Credits)**

Advanced study of the effects of pathology on the normal language processes. Theories of language processing and development over the life span. Effects of focal and diffuse neural pathologies on language processes.

**COMD 899 - Doctoral Research and Dissertation Preparation (1-12 Credits)**

## Communication Sciences and Disorders, Ph.D.

The Ph.D. degree in Communication Sciences and Disorders prepares professionals for academic careers, and therefore its emphasis is on research and the scholarly study of the science of human communication and its disorders. All students in the doctoral program must pursue their studies on a full-time basis, conducting scientific experiments in one or more of the department's laboratories under the guidance of a research mentor. Ph.D. students also gain experience in curriculum development and classroom teaching.

### Learning Outcomes

- Doctoral students will demonstrate entry level competency skills (for university teaching) in principles and methods of teaching college-level coursework.
- Doctoral students will demonstrate entry level competency skills (for university-level research) in the principles and methods of conducting and disseminating research.

### Degree Requirements (57 Post-Masters Hours)

Doctoral students must complete a minimum of 45 semester hours of graduate course work beyond the master's degree in speech-language pathology plus 12 semester hours of dissertation preparation (COMD 899). Students who are nationally certified by the American Speech-Language-Hearing Association generally pursue two years

of academic/research preparation followed by one or more years to complete the dissertation. Master's-level speech-language pathologists who are wishing to pursue their ASHA certification while enrolled in the doctoral program will take slightly longer. Finally, students with bachelor's degrees from other related scientific disciplines (e.g., psychology, linguistics, engineering, exercise science), who aspire to become speech-language-hearing scientists with no interest in clinical practice, take three years of course work (up to 18 additional semester hours, as determined by their doctoral planning committee) prior to the dissertation year. In addition to the courses listed below, all Ph.D. students must take PUBH 700.

### Speech, Language, & Hearing Science (9 Hours Minimum)

Course	Title	Credits
COMD 820	Advanced Speech Science	3
COMD 821	Advanced Hearing Science	3
COMD 822	Normal Bases of Speech Production	3
COMD 823	Normal Bases of Language	3
<b>Total Credit Hours</b>		<b>12</b>

### Advanced Professional Course Work (24 Hours Minimum)

Examples include, but are not limited to the following. Courses in other departments may also be included, as approved by the students Doctoral Planning committee.

Course	Title	Credits
COMD 714	Gerontology and Communicative Disorders	1-3
COMD 726	Advanced Cognitive Retraining	3
COMD 760	Cochlear Implants	3
COMD 800	Seminar in Speech Pathology	3
COMD 801	Advanced Topics in Speech Pathology	3
COMD 802	Contemporary Issues In Speech Pathology	3
COMD 803	Advanced Study of Clinical Phonology	3
COMD 805	Advanced Study of Language Disorders in Adults	3
<b>Total Credit Hours</b>		<b>22-24</b>

### Research/Statistics Preparation (12 Hours minimum)

Course	Title	Credits
BIOS 700	Introduction to Biostatistics	3
BIOS 757	Intermediate Biostatistics	3
EPID 701	Concepts and Methods of Epidemiology	3
COMD 791	Research Methodology	3
<b>Total Credit Hours</b>		<b>12</b>

### Dissertation Preparation (12 Hours)

Course	Title	Credits
COMD 899	Doctoral Research and Dissertation Preparation	12
<b>Total Credit Hours</b>		<b>12</b>

### Additional Information

Upon the completion of a program of study, approved by both the student's academic program committee and The Graduate School, and prior to embarking upon a dissertation, doctoral students must successfully pass written and oral comprehensive examinations.

The doctoral program culminates in the successful defense of the dissertation, consisting of the collection and analysis of original scientific data.

## Speech-Language Pathology, M.C.D.

### Learning Outcomes

- Students will demonstrate knowledge of basic human communication and swallowing processes across the life span.
- Students will demonstrate knowledge of human communication and swallowing disorders and differences across the life span.
- Students will collaborate with other professionals in case management and provide counseling regarding communication and swallowing disorders to clients/patients, family, caregivers, and relevant others. They will adhere to the ASHA Code of Ethics and behave professionally, meeting additional departmental standards for professional responsibility, interactions, and attitude.
- Students will demonstrate knowledge of processes used in research and of the integration of research principles into evidence-based clinical practice.

## Degree Requirements (Minimum 69 Hours)

### Course Work and Clinical Experiences

The department's master's degrees are designed to ensure that its graduates obtain the academic course work and clinical experiences necessary to meet the American Speech-Language-Hearing Association (ASHA) standards for the Certification of Clinical Competence in Speech-Language Pathology (CCC-SLP). As such, the curricula require a minimum of 69 semester hours of academic course work plus the completion of 375 clock hours of supervised clinical practicum. Virtually all master's degree graduates, however, exceed these minimums, with most completing as much as 80 semester hours of study. Courses comprising the master's degree curriculum fall within three basic content areas: Basic Communication Sciences, Professional Coursework, and Clinical Practicum. In addition, the following courses have been verified by the State of South Carolina, Department of Education, Office of Educator Services, to meet the South Carolina Literacy Competencies (Administrators/Speech Language Therapist) for the Read to Succeed pre-service 6-credit requirements:

Course	Title	Credits
COMD 706	Preschool Language Development and Disorders	3
COMD 720	School-Age Language & Literacy Development and Disorders	3
COMD 727	Advanced Study of Literacy for Speech-Language Pathologists	2

**Total Credit Hours** 8

### Basic Communication Sciences

Course	Title	Credits
COMD 501	Anatomy and Physiology of Speech and Hearing Mechanisms	3
COMD 744	Neurocognitive Bases of Language Behavior	3
COMD 745	Introduction to Speech Science and Acoustic Measurement	3
COMD 507	Language Theory and Phonetics	3
COMD 560	Observation of Speech Language Pathology	1-3

COMD 570	Introduction to Language Development	3
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**Total Credit Hours** 16-18

### Professional Course Work

Of the minimum 45 semester hours of professional course work, a minimum of 30 semester hours must be within the area of Speech-Language Pathology. MCD and MSP students must also take PUBH 700.

- Speech Disorders (Minimum 6 semester hours at the graduate level, with 9 semester hours overall at the undergraduate and graduate levels)
- Language Disorders (Minimum 9 semester hours)
- Other Speech Pathology Courses (Minimum 15 semester hours)
- Audiology (Minimum 6 semester hours at the graduate level)
- Cochlear Implants (Minimum 3 semester hours)

### Clinical Practicum

Minimum 24 semester hours.

Course	Title	Credits
COMD 772	Practicum in Speech Language Pathology and Audiology (minimum 12 semester hours total)	12
COMD 774	Internship in Speech Pathology	12
<b>Total Credit Hours</b>		<b>24</b>

## Speech-Language Pathology, M.S.

### Learning Outcomes

- Students will demonstrate knowledge of basic human communication and swallowing processes across the life span.
- Students will demonstrate knowledge of human communication and swallowing disorders and differences across the life span.
- Students will collaborate with other professionals in case management and provide counseling regarding communication and swallowing disorders to clients/patients, family, caregivers, and relevant others. They will adhere to the ASHA Code of Ethics and behave professionally, meeting additional departmental standards for professional responsibility, interactions, and attitude.
- Students will demonstrate knowledge of processes used in research and of the integration of research principles into evidence-based clinical practice.

## Degree Requirements (Minimum 76 Hours)

### Course Work and Clinical Experiences

The Department of Communication Sciences and Disorders offers the Master of Science degree (M.S.) in Speech-Language Pathology in a full-time face-to-face/residential format (MS-Res), as well as in a part-time distance education format (MS-DE). The M.S. degree offered in two pathways (MS-Res and MS-DE) is designed to ensure that its graduates obtain the academic course work and clinical experiences necessary to meet the American Speech-Language-Hearing Association (ASHA) standards for the Certification of Clinical Competence in Speech-Language Pathology (CCC-SLP). As such, the curricula require a minimum of 76 semester hours of academic course work plus the completion of 375 clock hours of supervised clinical practicum. Virtually all master's degree graduates, however, exceed these minimums, with most completing as much as 80 semester hours of study. Courses

comprising the master's degree curriculum fall within three basic content areas: Basic Communication Sciences, Professional Coursework, and Clinical Practicum. In addition, the following courses have been verified by the State of South Carolina, Department of Education, Office of Educator Services, to meet the South Carolina Literacy Competencies (Administrators/Speech Language Therapist) for the Read to Succeed pre-service 6-credit requirements:

Course	Title	Credits
COMD 706	Preschool Language Development and Disorders	3
COMD 720	School-Age Language & Literacy Development and Disorders	3
COMD 727	Advanced Study of Literacy for Speech-Language Pathologists	2
<b>Total Credit Hours</b>		<b>8</b>

### Basic Communication Sciences

Course	Title	Credits
COMD 501	Anatomy and Physiology of Speech and Hearing Mechanisms	3
COMD 744	Neurocognitive Bases of Language Behavior	3
COMD 745	Introduction to Speech Science and Acoustic Measurement	3
COMD 507	Language Theory and Phonetics	3
COMD 560	Observation of Speech Language Pathology	1-3
COMD 570	Introduction to Language Development	3
<b>Total Credit Hours</b>		<b>16-18</b>

### Professional Course Work

Of the minimum 45 semester hours of professional course work, a minimum of 36 semester hours must be within the area of Speech-Language Pathology. MS-Res and MS-DE students must also take **PUBH 700**.

- Speech Disorders (Minimum 6 semester hours at the graduate level, with 9 semester hours overall at the undergraduate and graduate levels)
- Language Disorders (Minimum 9 semester hours)
- Other Speech Pathology Courses (Minimum 15 semester hours)
- Audiology (Minimum 6 semester hours at the graduate level)
- Cochlear Implants (Minimum 3 semester hours)

### Clinical Practicum

Minimum 24 semester hours.

Course	Title	Credits
COMD 772	Practicum in Speech Language Pathology and Audiology (minimum 12 semester hours total)	12
COMD 774	Internship in Speech Pathology	12
<b>Total Credit Hours</b>		<b>24</b>

## Environmental Health Sciences

Department Website (<http://www.sph.sc.edu/enhs/default.htm>)

Geoffrey I. Scott, *Chair*

Dwayne E. Porter, *Associate Chair and Director of Graduate Studies*

The environmental health sciences examine the interactions between humans and their environment. Human activities impact

on environmental quality and environmental factors, and, in turn, are principal determinants of human health. Exploration of these complex interactions often combines elements of both pure and applied sciences, e.g., biology, chemistry, marine sciences, geology, engineering, public health, and medicine.

Faculty members of the Department of Environmental Health Sciences (ENHS) have expertise in a broad range of disciplines necessary to solving the vexing and complex problems in environmental health sciences. Our expertise includes air pollution, nanosciences, mammalian toxicology, environmental and health-related microbiology, aquatic ecology, marine ecotoxicology, ecosystem modeling, risk and impact assessment, exposure analysis, environmental planning and engineering, environmental physiology, industrial hygiene, occupational epidemiology, landscape ecology, remote sensing and GIS, water quality and wastewater treatment, wetlands ecology, resource management, and environmental justice.

The mission of the Department of Environmental Health Sciences is founded on the philosophy that healthy environments enhance the health and well-being of individuals and the communities in which they live.

Thus the broader goals of the department are to:

- develop improved methods for assessing the health and quality of the environment
- promote a clearer understanding of interactions between humans and their natural, home, and work environments
- achieve molecular to landscape levels of resolution for understanding health/environment interactions
- protect the natural resources upon which life depends
- provide scientifically sound information for policymakers to encourage social awareness of and societal actions toward sustaining a healthy relationship with the environment.

The Department of Environmental Health Sciences offers the following degrees: Master of Public Health (MPH), Master of Science (MS), and Doctor of Philosophy (PhD). A common level of core public health training is completed prior to undertaking advanced study and research.

## Programs Overview

### Master's Degrees

#### Master of Public Health (MPH)

The MPH degree is oriented toward development of a broad background in public health and preparation for professional practice. The MPH degree requires 42 credit hours of study and is practice-oriented. MPH students complete a supervised internship (practicum) in lieu of a thesis.

#### Master of Science (MS)

The MS degree is an academic research degree which may be tailored to individual interests and job market needs. The MS degree requires a minimum of 36 graduate hours and combines real-world problem solving and research skills with other technical, health, and related skills to prepare effective environmental health researchers for the public and private sectors. Students complete a research thesis.

### Doctoral Degree

#### Doctor of Philosophy (PhD)

Doctoral students complete a program of study that emphasizes professional development, scientific competence, and research expertise. The PhD requires a minimum of 60 hours of course work beyond the baccalaureate and includes 12 credit hours of dissertation preparation.

Those students entering without a master's degree are required to take additional foundation course work in environmental health sciences equivalent to the master's degree. To achieve doctoral candidate status, students must pass a qualifying examination after the first year of study. Upon completion of all course and language requirements, doctoral candidates must pass an oral and/or written comprehensive examination. All doctoral candidates must prepare and defend a dissertation that represents significant research in their area of advanced study. Doctoral students must demonstrate a reading proficiency in a modern foreign language if deemed necessary by the doctoral advisory committee.

## Department Admission Requirements

### General

Application forms for admission to the MPH, MS and PhD graduate programs in Environmental Health Sciences may be obtained at <http://gradschool.sc.edu/gap> (<http://gradschool.sc.edu/gap/>). Applicants should submit an application packet through the School of Public Health Application Service (<http://www.sophas.org>). Individuals who wish to pursue graduate work in the Department of Environmental Health Sciences must meet or exceed the general admission requirements of The Graduate School and the following departmental requirements:

- grade point average of at least 3.00 on a 4.00 scale
- evidence of previous training/experience in a pure or applied scientific discipline
- minimum score of 310 (new scoring) or 1050 (old scoring) (verbal plus quantitative) on the Graduate Record Examination
- completion of a minimum of 24 hours of science-based courses to include the following for the MPH degree: college algebra, pre-calculus, chemistry (general; quantitative-organic chemistry also desirable), biology (general, plus advanced courses)
- completion of a baccalaureate degree with 120 hours of science-based courses or equivalent for the MS, MPH, and PhD degrees to include:
  - a. a minimum of 60 hours in physical or life sciences, mathematics, engineering, and/or technology
  - b. at least 15 hours of the 60 hours in upper level junior, senior, or graduate level courses
  - c. 21 or more semester hours in communication, humanities, and social sciences.

Applicants must submit the following:

- Graduate Record Examination scores
- official transcripts
- brief statement (maximum of two pages) that describes professional and educational objectives, work experiences, and activities applicable to the proposed plan for graduate study
- three letters of recommendation.

Applicants who do not meet all of the above requirements but who possess overall potential may be considered for conditional admission. Applicants should submit an application packet through the School of Public Health Application Service ([www.sophas.org](http://www.sophas.org)) unless advised otherwise by the Office of Academic Affairs.

### Doctor of Philosophy

Applicants to the Ph.D. program must meet the above requirements and in addition must have at least baccalaureate degree in a pure or applied

scientific discipline applicable to the environmental health sciences and from a university-accredited by a regional accrediting agency. Individuals with prior performance at the master's level are preferred. A personal interview may also be required.

## Programs

- Environmental Health Sciences, M.P.H. (p. 410)
- Environmental Health Sciences, M.S. (p. 410)
- Environmental Health Sciences, Ph.D. (p. 411)

## Courses

### ENHS 515 - Introduction to Public Health and Emergency Preparedness and Response (3 Credits)

Introduction to emergency preparedness and response in relation to environmental and public health. Historical context for the emergence of public health emergency preparedness and demonstration of articulation with community response partner agencies in the post-9/11 era.

### ENHS 592 - Advanced Special Topics in Environmental Health (1-3 Credits)

Emerging issues and topics concerning environmental health. May be repeated as content varies by title up to a total of 9 credit hours.

### ENHS 625 - Medical Mycology (3 Credits)

Advanced study of infectious diseases caused by fungi. Etiology, symptoms, and treatment of fungi related illnesses.

**Cross-listed course:** BIOL 625

### ENHS 660 - Concepts of Environmental Health Science (3 Credits)

Environmental health sciences presenting the earth as a complex system in which people, plants, animals, and non-living physical-chemical components interact.

### ENHS 661 - Parasitology (4 Credits)

Parasites of biological, economic, and public health importance.

**Prerequisites:** 300 level Biology course or equivalent.

**Cross-listed course:** BIOL 531, EPID 661

### ENHS 662 - Industrial Health Programs (3 Credits)

Analysis, planning, and implementation of programs to protect workers' health in industry; legislative and regulatory background.

### ENHS 664 - Environmental Genomics (3 Credits)

"State of the art" molecular techniques that elucidate mechanisms of environmental contaminants in model systems.

### ENHS 665 - Biofilms in Environmental Health and Disease (3 Credits)

Effect of bacterial biofilm process on many diverse areas. Recognition, prevention, and control of biofilm-related problems in the environment, health care, industry, and engineering.

### ENHS 666 - Metals and Human Health (3 Credits)

Trace metal(loid)s, their fate and transport in the environment and their potential impacts on human health.

**Prerequisites:** BIOL 101 or BIOL 110; CHEM 101 and CHEM 102, or equivalent.

### ENHS 670 - Environmental Pollutants and Human Health (3 Credits)

Overview of environmental pollutants and their impact on human health; case studies of environmental catastrophes; principles of ecotoxicology; air, water, and land pollution associated with neurotoxicity, toxicology, and carcinogenesis.

**Prerequisites:** BIOL 101 or BIOL 110; CHEM 101 and CHEM 102.

**ENHS 671 - From Air to Alveoli: Exposure Science (3 Credits)**

A receptor-oriented approach for assessing human exposure to environmental contaminants by inhalation, dermal and ingestion routes. Covers methods for estimating exposures to protect health and well-being, to relate adverse effects to exposures, and to comply with regulations and guidelines.

**ENHS 675 - Infectious Disease Ecology (3 Credits)**

Ecological theories as the basis for environmental change and the (re)emergence of infectious agents that ultimately impact human and ecosystem health.

**ENHS 681 - Occupational Ergonomics I (3 Credits)**

Introduction to ergonomics: hazards identification and analysis; solution design and implementation; human musculoskeletal characteristics, injuries; effects of work on performance, safety, and health. Application to manufacturing and office environments.

**ENHS 740 - Environmental Nanoscience (3 Credits)**

Fundamental principles of environmental nanoscience: unique properties of nanomaterials, syntheses and characterization of nanomaterials, and key processes determining their environmental fate and behavior of nanomaterials.

**ENHS 750 - MPH Capstone Course (2 Credits)**

Synthesis of foundational and ENHS MPH competencies in preparing a high quality grant proposal to address a public health issue.

**Prerequisites:** PUBH 725, PUBH 726, PUBH 730, PUBH 735, ENHS 660.

**ENHS 755 - Marine Conservation and Environmental Health (3 Credits)**

Explores the intersection between conservation and environmental health with a particular focus on coastal and marine case studies.

**ENHS 760 - Fundamentals of Air Pollution (3 Credits)**

Chemical and physical aspects of air pollution and their regulatory problems. An examination of air pollution sources; physical and chemical processes affecting pollutants after emission; pollutants and their effects and the ultimate fate of pollutants. Attention is also given to the legal, administrative, and technical aspects of air pollution control.

**Prerequisite or Corequisite:** ENHS 660.

**ENHS 761 - Ecotoxicology of Aquatic Systems (3 Credits)**

Lethal and sublethal effects of environmental stressors on organisms living in the water column and in sediments of aquatic systems. Practical techniques of aquatic toxicology, risk assessment and modeling.

**ENHS 762 - Fundamentals of Industrial Hygiene (3 Credits)**

Industrial hygiene, including health effects, occupational health standards, and the evaluation and control of occupational health hazards.

**ENHS 763 - Medical Aspects of Occupational Health (3 Credits)**

Emphasizes the medical aspects of exposure to hazardous materials, accidents, and mental and physical stresses on the job. Clinical spectrum of occupational illness with some emphasis on industrial toxicology.

**ENHS 764 - Principles, Methods, and Issues in Air Quality (3 Credits)**

Fate, transformation, and behavior of pollutants in the atmosphere. Exposure and human health impacts of atmospheric particles.

**Prerequisite or Corequisite:** ENHS 660.

**ENHS 765 - Applied Research in the Environmental Health Sciences (3 Credits)**

Current and prospective research associated with the multi-disciplinary areas of environmental health sciences. Critical evaluation of scientific research, and technical writing and oral presentations.

**ENHS 766 - Applied Aquatic Sciences (3 Credits)**

The quantitative application of principles of basic physical, biological, and geochemical principles in assessing and solving environmental problems in lakes, streams, and wetlands. Emphasis on watershed-water quality interactions, trophic state analyses, wasteload impact prediction, toxic chemical fate and transport, wetland values, and classification.

**Prerequisites:** ENHS 660, pre-calculus math, general ecology.

**ENHS 766L - Applied Aquatic Sciences Laboratory (1 Credit)**

Sampling and analysis of the interacting parameters used in assessing water quality and the functioning of aquatic systems.

**Corequisite:** ENHS 766.

**ENHS 767 - Ecological Modeling and Environmental Planning (4 Credits)**

Concepts in systems ecology and ecological modeling. Emphasis on the use of models and computer simulations in examining environmental interactions, predicting environmental impact, and facilitating the process of environmental planning. Lab practice in model development and computer simulation analysis.

**Prerequisites:** MATH 111 or equivalent, ecology, ENHS 660.

**Cross-listed course:** BIOL 768, MSCI 767

**ENHS 768 - Industrial Ventilation and Hazard Control (3 Credits)**

Control of chemical and physical hazards in the occupational environment. Course covers principles and design of health protection systems such as ventilation systems, collection mechanisms, control of physical factors (excluding radioactivity).

**Prerequisites:** college math and ENHS 762 or consent of instructor

**ENHS 769 - Exposure and Risk Assessment (3 Credits)**

Designing, implementing, and analyzing environmental exposures in the field; error analysis; computation of the value of improved information; hazard identification; dose-response evaluation; and risk characterization.

**Prerequisites:** MATH 141, CHEM 111 and CHEM 112, and BIOS 700 or STAT 701.

**ENHS 770 - Microbial Processes and Pollution (3 Credits)**

Microbial processes which alter the fate, bioavailability, and toxicity of environmental pollutants: biotransformations of metals and organic pollutants; resistance mechanisms and roles of microbial biofilms in toxin transfer.

**ENHS 771 - Environmental Health Sciences Seminar (1 Credit)**

Environmental Health Sciences Seminar is a one credit course that provides the opportunity for graduate students within the department and other related departments/programs to enhance and broaden their knowledge in environmental health by exploring current research and case studies.

**ENHS 772 - Human and Ecological Risk Assessment (3 Credits)**

Focuses on history, theory, and practice of predicting, managing, and communicating potential human health and environmental risks of hazardous chemicals. Reviews fundamental components and explores uncertainties, probabilistic approaches, and 'real-world' challenges of risk analysis.

**ENHS 773 - Radiation Health Physics (3 Credits)**

Physics of radiation and associated health hazards; hazard evaluation and measurements; radiation content and protection of the individual. Course covers ionizing radiation, ultraviolet, microwave, lasers, R.F. field, and ultra-sound.

**Prerequisites:** ENHS 660.



**ENHS 774 - Risk Assessment and Interactions of Environmental Toxicants (3 Credits)**

A study of biological interactions and transformation of environmental toxicants at the cellular and subcellular levels, and assessment of cellular damage as it relates to health hazards and risks. Topics to include: environmental toxicants; exposure measurements; factors affecting interactions and toxicity; metabolism of xenobiotics: types and levels of effects and interactions; and human health risks.

**Prerequisites:** ENHS 660.

**ENHS 775 - Resource Management and Environmental Impact Assessment (3 Credits)**

Review of ecological principles as applied to environmental impact assessment. Study of the mandates of the National Environmental Policy Act of 1969. Analysis of several impact assessment methodologies.

**Prerequisites:** BIOL 102 and BIOL 570.

**ENHS 776 - Environmental Regulation and Planning (3 Credits)**

Introduction to environmental planning. Survey of major federal environmental legislation. Review of processes and techniques of environmental planning including zoning, permits, management plans, assessments, and evaluation methods. Case studies of significant environmental projects.

**ENHS 777 - Radiation Biology (3 Credits)**

Fundamentals on the biological effects of ionizing radiation on living systems, especially man; basic biological mechanisms which bring about somatic and genetic effects.

**Prerequisites:** ENHS 660, ENHS 773.

**ENHS 778 - Air Pollution Monitoring and Modeling (3 Credits)**

Sources, sinks, transport, and transformation of air pollutants. Health effects that occur directly or by intermediate transport. Current monitoring methods and modeling techniques for air pollution.

**Prerequisites:** one year each of general chemistry and physics.

**ENHS 779 - Applied Environmental Physiology (4 Credits)**

Lecture and laboratory investigations concerning sublethal and lethal physiological responses of aquatic organisms to a variety of environmental pollutants. Stresses the in-depth understanding of the effects of: bacterial and thermal pollution, pesticides/herbicides, industrial chemicals, hazardous materials, and petroleum hydrocarbons on different physiological mechanisms.

**Prerequisites:** ENHS 660, ENHS 761.

**ENHS 780 - Advanced Seminar in Environmental Modeling (1-2 Credits)**

A critical review of recent advances and case histories in the formulation and use of ecological/ environmental models. Ecosystems analysis and environmental planning.

**ENHS 781 - Occupational Ergonomics II (3 Credits)**

Literature reviews and applications in evaluation of hazards and design of ergonomic interventions including human factors in information processing, design of displays and controls, vibration, macroergonomics, fatigue, and shiftwork.

**Prerequisites:** ENHS 681

**ENHS 787 - Analytical Concepts for Environmental Health Sciences (3 Credits)**

Physical and chemical principles of environmental qualitative and quantitative analysis with emphasis on atmospheric, aquatic, and terrestrial samples. Includes use and limitations of instrumental techniques, sampling strategies, data management and reduction, and quality assurance programs.

**ENHS 788 - Concepts of Hazardous Materials Management I (3 Credits)**

Chemical and physical principles of multimedia contaminant transport, environmental effects of hazardous materials, statutes and regulations classification, treatment and disposal of hazardous materials.

**ENHS 789 - Concepts of Hazardous Materials Management II (3 Credits)**

Chemical and physical properties of hazardous materials; use and storage; disposal options; transportation requirements; site safety considerations; management systems involving hazardous materials.

**Prerequisites:** ENHS 788

**ENHS 790 - Independent Study (1-6 Credits)****ENHS 793 - Special Topics in Environmental Health Sciences (1-6 Credits)**

Content varies by title. Course may be repeated for a total of 6 credit hours.

**ENHS 794 - Introduction to Environmental Science Research (3 Credits)**

The course is intended to develop theoretical and practical knowledge in environmental science research. The learning formats will permit focus on areas of interest as a means to develop the research skills for later projects. Guided by focus, students may work in the laboratory, field, and/or use existing data.

**ENHS 795 - Issues in Coastal Environmental Health (3 Credits)**

Problems associated with coastal population growth and development. Emphasis is on the working group approach to ameliorating impacts on ecosystem and human health.

**ENHS 796 - Introduction to Nanoanalytics (3 Credits)**

Laboratory based course aimed at developing theoretical and practical knowledge in regards to nanoscience in toxicology and in the environment. Students will perform nanoparticle syntheses, characterization, fate and behavior studies or toxicology exposures. Learning formats will permit focus on areas of interest aimed at developing research skills.

**ENHS 797 - Global Environmental Health and Food Security (3 Credits)**

Global environmental health with a focus on food security in developing nations, including crop responses to warming, soil changes, more variable precipitation inputs and expanding geographical range of pests.

**ENHS 798 - Public Health Practice (1-6 Credits)**

Performance of a limited work or service project in a public need setting, pursuit of planned learning objectives related to previously identified aspects of the student's chosen role. Self-monitoring and regular seminars focusing on learning accomplishments.

**Prerequisites:** 9-10 hours of specified courses including BIOS 700, EPID 700.

**ENHS 799 - Thesis Preparation (1-9 Credits)**

**ENHS 860 - Environmental Radiation Surveillance (4 Credits)**

Technical coverage relevant to a practical evaluation of radiation sources and contaminants in the environment.

**Prerequisites:** ENHS 773.

**ENHS 861 - Aerosol Science (3 Credits)**

Physical and chemical principles applied to the behavior and properties of particles suspended in air. Course covers motion under applied forces, electrical properties, diffusion, removal from gas, cloud dynamics, and optical properties.

**ENHS 862 - Special Research Topics in Environmental Health Sciences (3 Credits)**

Discussion and/or laboratory participation involving techniques used in multidisciplinary research areas of environmental health sciences that have not been covered by other courses. May be repeated for credit on different topics.

**Prerequisites:** BIOS 700, EPID 700, ENHS 660.

**ENHS 863 - Advanced Topics in Environmental Planning (3 Credits)**

Detailed analyses of techniques, especially computer simulation modeling, used in environmental assessment and planning. Emphasis will be on the prediction of the ecological effects of development projects. Students will collectively construct a simulation model for the purpose of environmental assessment.

**Prerequisites:** ENHS 767, ENHS 775.

**ENHS 864 - Advanced Graduate Seminar (3 Credits)**

Seminar presentation and group discussion by students, faculty, and guest speakers on current topics in environmental health sciences. May be repeated for credit.

**Prerequisites:** Complete at least two semesters in environmental health sciences and courses to include ENHS 660, ENHS 765.

**ENHS 880 - Ethics & Research Prep (1 Credit)**

Overview of skills and standards, including ethics and research preparation, for Environmental Health Sciences doctoral students.

**ENHS 899 - Dissertation Preparation (1-12 Credits)**

**Prerequisite:** one full year (18 hrs) of graduate study beyond the master's level.

## Environmental Health Sciences, M.P.H.

### Learning Outcomes

- Define environmental stressors and hazards, and identify sources, pathways of exposure, and ecosystem components and human populations most susceptible to exposure, as well as reasons for community vulnerabilities and disparities in environmental hazard exposure.
- Apply principles of toxicology to identify and quantify acute and chronic hazards associated with individual compounds and contaminant mixtures in terms of ecotoxicology and human health.
- Discuss the basic principles of the environmental fate of contaminants and how they are introduced into the air, water, soil, sediments and food and then transported through the environment and how these processes define exposure.
- Apply toxicological hazard and exposure assessment and statistical techniques in assessing the risks associated with environmental stressor in the home, workplace and community environments and natural settings.

- Express knowledge of important local, state and federal laws that regulate and protect environmental quality and health, and explain the responsibilities of agencies, organizations, communities and individuals for protecting, maintain and enhancing the environment.
- Identify approaches for preventing, mitigating and remediating environmental hazards, protecting populations from environmental hazards, and working with communities to address issues of environmental hazards via pollution source identification and management, health promotion, education, ecological forecasting and behavior modification.
- Review, critique, evaluate and synthesize the scientific merit of environmental health research articles, presentations and evaluate the scientific merit and feasibility of environmental health study designs.
- Apply findings, methods and approaches from case studies to contemporary environmental issues
- Develop assessment tools to measure the effectiveness of environmental or risk management approaches used to prevent or minimize exposure or to reduce the environmental hazard.

## Degree Requirements (42-43 Hours)

Curriculum requirements for degrees in the Department of Environmental Health Sciences are listed below.

### Coursework

Course	Title	Credits
PUBH 725	Quantitative Methods for Public Health Practice	5
PUBH 726	Qualitative Methods for Public Health Practice	3
PUBH 730	Public Health Systems, Policy, and Leadership	3
PUBH 735	Practical Applications of Public Health Planning	4
PUBH 678	Transforming Health Care for the Future	1
ENHS 660	Concepts of Environmental Health Science	3
ENHS 761	Ecotoxicology of Aquatic Systems	3
ENHS 770	Microbial Processes and Pollution	3
ENHS 775	Resource Management and Environmental Impact Assessment	3
ENHS 771	Environmental Health Sciences Seminar	1
ENHS 798	Public Health Practice	6
ENHS 750	MPH Capstone Course	2
Select Elective Departmental Major and Cognate Courses		6
<b>Total Credit Hours</b>		<b>43</b>

## Environmental Health Sciences, M.S.

### Learning Outcomes

- Students are expected to demonstrate an overall mastery of the major concepts and applications of public health principles in environmental health sciences.
- Students are expected to understand and be able to discuss the major concepts and applications of environmental health practice specific to their respective research interest
- Student will identify major issues and knowledge gaps in a specific area of the environmental health sciences, develop original hypotheses, design a research program, and defend research findings that make significant contributions to the identified issues and knowledge gaps.

## Degree Requirements (36 Hours)

### Curriculum Requirements

Course	Title	Credits
Select Departmental Courses		12
Select Quantitative and Technical Skills		9
ENHS 660	Concepts of Environmental Health Science	3
EPID 700	Introduction to Epidemiology	3
PUBH 700	Perspectives in Public Health	3
ENHS 799	Thesis Preparation	1-9
<b>Total Credit Hours</b>		<b>31-39</b>

## Environmental Health Sciences, Ph.D.

The Ph.D. program in Environmental Health Sciences is designed to prepare students for research careers in the environmental health sciences; graduates are trained for entry into positions in universities, colleges, research institutes and research-oriented settings. Areas of research emphasis correspond to those of the departmental faculty.

Doctoral students complete a program of study that emphasizes professional development, scientific competence, and research expertise. The Ph.D. requires a minimum of 60 hours of course work beyond the baccalaureate and includes 12 credit hours of dissertation preparation. A limited number of graduate course-work hours from a graduate program may be applied toward the Ph.D. with advisory committee approval. A minimum of 30 hours, including 12 hours of dissertation preparation must be unique to the doctoral program of study. Those students entering without a master's degree are required to take additional foundation course work in environmental health sciences equivalent to the master's degree. To achieve doctoral candidate status, students must pass a qualifying examination after the first year of study. Upon completion of all course and language requirements, doctoral candidates must pass an oral and/or written comprehensive examination. All doctoral candidates must prepare and defend a dissertation that represents significant research in their area of advanced study. Doctoral students must demonstrate a reading proficiency in a modern foreign language if deemed necessary by the doctoral advisory committee. *The specific curriculum for the doctoral degree varies with the discipline* and some programs require additional credit hours. Students enrolled in a doctoral program have eight years from the first term of enrollment in which to complete the degree. Students must be enrolled for at least one (1) credit during the term of graduation.

### Learning Outcomes

- Students are expected to demonstrate an overall mastery of the core concepts of public health as it relates to environmental health sciences and display the ability to extend this understanding to relevancy and application to real-world environmental health sciences issues.
- Students will demonstrate an ability to write competitive research grant proposals.
- Students will demonstrate proficiency in effectively communicating technical and scientific information in oral, written, and web-based formats to scientific and public audience.
- Students will clarify critical gaps in scientific knowledge on environmental health issues and develop and perform original research that will lead to solutions.

- Students are expected to promote and actively participate in the dissemination of environmental health science research results in to further the overall knowledge of the field and broaden and diversify their communication skills.

## Degree Requirements (60 Hours)

Specific curriculum requirements for the Ph.D. in the Department of Environmental Health Sciences are listed below.

### Curriculum Requirements

Course	Title	Credits
EPID 701	Concepts and Methods of Epidemiology	3
PUBH 700	Perspectives in Public Health	3
ENHS 660	Concepts of Environmental Health Science	3
ENHS 899	Dissertation Preparation	1-12
<b>Total Credit Hours</b>		<b>10-21</b>

### Other Program Requirements

Doctoral degree students must complete at least half of the hours on the Program of Study (D-POS) in courses numbered 700 or higher. A dissertation of original research is required. A period of residency, a foreign language or research methods proficiency, a comprehensive examination, and a dissertation defense and examination are also required. The specific curriculum for the doctoral degree varies with the discipline and some programs require additional credit hours. Students enrolled in a doctoral program have eight years from the first term of enrollment in which to complete the degree. Students must be enrolled for at least 1 credit during the term of graduation.

## Epidemiology and Biostatistics

Department Website ([http://www.sph.sc.edu/epid\\_bios/default.htm](http://www.sph.sc.edu/epid_bios/default.htm))

Anthony Alberg, *Chair*

Achieving gains in improving the public's health depends on the ability to identify and solve community health problems. As measurement and research sciences, epidemiology and biostatistics are critical disciplines for the ascertainment and characterization of public health problems. and generating public health action. Combining epidemiology and biostatistics in the same department creates synergies in education and research. However, the two disciplines are unique and thus the Department is comprised of two divisions: the Division of Biostatistics and the Division of Epidemiology.

The Department of Epidemiology and Biostatistics offers the following degrees: Master of Public Health (M.P.H.) (Epidemiology only), Master of Science (M.S.)\*, and Doctor of Philosophy (Ph.D.).

## Program in Epidemiology

The major in epidemiology is designed for students pursuing careers in the study of patterns of diseases, disabling conditions, and other indicators of health in human populations. The field of epidemiology involves the study of the distribution and determinant of health and disease in human populations, and the application of this knowledge to better prevent and treat disease. Epidemiologists attempt to establish the causes of disease by describing the biological, environmental, social, and behavioral factors affecting illness and premature death, as well as factors that contribute to health and well-being. The evidence generated from epidemiologic research is translated into developing

health promotion/disease prevention programs, and formulating health policy. Being an effective epidemiologist requires skills in working in interdisciplinary teams, both in leadership and collaborative roles, whether these teams are focused on advancing research or public health practice.

#### **Master of Public Health (M.P.H.) in Epidemiology (43 Hours)**

Our Master of Public Health (M.P.H.) degree students learn in a multi-faceted educational program; this includes an integrated core curriculum, epidemiologic and biostatistical methods, and experience and training in a public health practice setting.

#### **Master of Science (M.S.) in Epidemiology (43 Hours)**

The Master of Science in Public Health (M.S.) degree is designed for those who wish to acquire skills necessary for doing public health or biomedical research and want to focus on developing research skills for clinical research or the study of determinants of disease and other health-related outcomes. If you intend to further your study by pursuing a Ph.D. in Epidemiology, you will want to choose the M.S. rather than the M.P.H. degree.

## **Program in Biostatistics**

The program in biostatistics is designed for individuals who wish to pursue careers in community health measurement, design and management of health data systems, and the development and application of quantitative methods to health problems. Biostatisticians apply statistical theory, methods, and techniques to the planning, development, and evaluation of health programs and problems. They collect and analyze various types of information; these include demographic and vital statistics, social and business data, health resources statistics, and other forms of social and economic data which are relevant to modern health problems. Biostatisticians design experiments and observational studies, use various computer operating systems and software packages to store and analyze data, develop methods to compare population groups, and prepare inferential and probabilistic statements based on biological, social, and environmental data. Biostatisticians are the theoretical researchers and applied statisticians of public health.

## **Programs Overview**

Doctoral and master's students in programs in the Department of Epidemiology and Biostatistics gain state-of-the-art knowledge and skills that empower them to function effectively and appropriately in identifying, evaluating, and solving public health problems. Upon completion of the program, the students demonstrate:

- knowledge base of the etiology of disease, disability, and other health conditions
- application of epidemiologic and biostatistical methods in identifying the determinants of disease, disability, and other health conditions
- understanding of the design and conduct of research in public health
- skill in data management and analysis and interpretation of research results in studies to describe the distribution of disease, determinants of disease, and clinical trials to advance disease prevention, screening, and treatment.

Departmental faculty are actively involved in research projects funded by the federal government and other sources. Faculty also contribute their expertise to address public health challenges and contribute to health policy at the local, state, national, and global level. Our degree

programs are designed to help students achieve their career goals, whether the goals are an academic research career or a career in public health practice, and whether the preferred setting is in the public sector or in the private sector (such as health systems, pharmaceutical industry, etc.)

## **Master's Degrees**

### **Epidemiology**

The broad objective of the M.P.H. with a major in epidemiology is to prepare an individual to apply epidemiologic skills in a public health setting. The M.S.P.H. with a major in epidemiology focuses on the development of basic research skills for the study of correlates and determinants of disease and other health conditions. Students in both M.P.H. and MSPH programs:

- develop an understanding of the integration of epidemiologic research methods into the principles and philosophy of public health
- develop knowledge of the basic epidemiology of commonly studied diseases and other health conditions and health promoting behaviors
- describe the natural history, biology/pathophysiology, risk factors, methods unique to the specific situation, and strategies for disease prevention and control for several diseases or health conditions or health promoting behaviors
- apply descriptive and analytic epidemiologic methods to investigate and identify factors associated with various health conditions
- understand statistical procedures commonly used in public health research and evaluation
- develop expertise in computer applications and usage necessary for successfully managing or conducting epidemiologic studies
- demonstrate ability to manage and summarize health-related data and statistics and to calculate and appropriately interpret associations and their relevance to public health
- develop skills in presenting demographic, statistical, programmatic, and scientific data accurately and effectively for professional and lay audiences.

In addition, the M.P.H. student will develop an understanding of concepts, methods of implementation, and evaluation of health surveillance systems and demonstrate the ability to integrate epidemiologic concepts and analytic approaches to the study of a specific health problem by working with a mentor in a practice setting, preparing a written report, and giving an oral presentation to professionals who will be using the information generated. The MSPH student will demonstrate the ability to synthesize the current state of knowledge of a specific problem, critically evaluate findings, develop appropriate research questions to advance the field, and develop and implement a simple research protocol aimed at testing an epidemiologic hypothesis or estimating an effect of a risk factor on a health outcome and report results in a form suitable for dissemination to the scientific community. Both the M.P.H. and the MSPH require a minimum of 43 hours.

### **Biostatistics**

The broad objective of the M.P.H. with a major in biostatistics is to provide opportunities for experienced professionals to expand their analytic and investigative skills in the application of biostatistical principles and techniques. The MSPH with a major in biostatistics provides the biostatistical concepts, principles, and skills necessary for scientific inquiry into health conditions and related methodologic developments. Students in both programs develop the capacity to:

- demonstrate the ability to evaluate a given health-related problem and to identify the most appropriate statistical technique for analysis
- display mastery of a variety of traditional and newly developed statistical techniques, including multivariable methods for continuous and categorical data analysis
- demonstrate the ability to interpret the results of a statistical analysis and to communicate such interpretations in an easily comprehensible manner
- demonstrate knowledge of academic and non-academic issues and problems in epidemiology and biostatistics
- demonstrate the ability to structure available data in an easily useable form using a variety of data management software tools
- demonstrate the ability to use a variety of statistical software packages, to create and maintain databases, and to analyze data

In addition, students in the M.P.H. program will demonstrate the ability to apply analytic epidemiologic methods used to investigate health conditions, gain exposure to a wide variety of public health topics, and develop a basic understanding of the philosophy of public health practice, display the ability to apply an existing statistical technique to a current problem or question faced by a health agency, and demonstrate the ability to interpret the results of a statistical analysis, and to explain those results in understandable terms to public health practitioners. Students in the MSPH program will demonstrate the ability to work independently in a research problem outside of the classroom setting, and demonstrate the ability to modify and extend existing statistical techniques to answer questions posed by health related situations, and to synthesize such research results into acceptable research papers. The M.P.H. requires a minimum of 54 credit hours.

#### **Master of Public Health (M.P.H.) in Epidemiology (43 Hours)**

Our Master of Public Health (MPH) degree students learn in a multi-faceted educational program; this includes an integrated core curriculum, epidemiologic and biostatistical methods, and experience and training in a public health practice setting. In Fall 2019, the Arnold School of Public Health will launch our exciting redesigned MPH programs integrated across the public health disciplines. More details are available at - <http://sph.sc.edu/mph>.

#### **Master of Science in Public Health (MSPH) in Epidemiology (43 Hours)**

The Master of Science in Public Health (MSPH) degree is designed for those who wish to acquire skills necessary for doing public health or biomedical research and want to focus on developing research skills for clinical research or the study of determinants of disease and other health-related outcomes. If you intend to further your study by pursuing a Ph.D. in Epidemiology, you will want to choose the MSPH rather than the MSPH degree.

#### **Master of Public Health (M.P.H.) in Biostatistics**

This program is not accepting applications at this time.

#### **Master of Science in Public Health (MSPH) in Biostatistics (45 Hours)**

The Master of Science in Public Health (MSPH) degree in Biostatistics prepares students for involvement in biostatistical research, including applying statistical theory to health problems, formulation of designed population and clinical intervention trials, and adapting existing statistical theory to address newly emerging health-related problems.

## **Doctoral Degrees**

The Doctor of Philosophy is an advanced graduate research degree designed for those who intend to pursue teaching and research careers. The major objective of the Ph.D. degree with a concentration in epidemiology is to prepare an individual to pursue original epidemiologic investigation of diseases of unknown etiology and other health conditions or health behaviors and develop novel methodological approaches. The major objective of the Ph.D. program with a concentration in biostatistics is to prepare an individual to develop and apply biostatistical principles and methods to public health problems.

#### **Doctor of Philosophy (Ph.D) in Epidemiology (54 Hours)**

The Doctor of Philosophy (Ph.D.) is an advanced graduate degree for those who intend to pursue teaching and research careers. The major objectives are to prepare you to:

1. pursue original epidemiologic research,
2. develop novel methodological approaches,
3. teach epidemiologic methods courses, and
4. consult with non-epidemiologists in a collaborative research setting.

#### **Doctor of Philosophy (Ph.D.) in Biostatistics (54 Hours)**

The Doctor of Philosophy (Ph.D.) degree in Biostatistics prepares students for involvement in teaching and independent and collaborative biostatistical research; trains researchers to teach and to pursue original research on analytical approaches to investigating health conditions; and to develop novel biostatistical approaches.

#### **Doctor of Public Health (Dr.P.H.) in Biostatistics (60 Hours)**

The Doctor of Public Health degree in biostatistics is an advanced degree for experienced health professionals. It is designed to prepare practicing professionals in the application of research methods and to provide them with a broad knowledge base for solving public health problems. Students in this degree program will have an application area in which to apply biostatistical methods.

#### **Dual Ph.D. Degree Program in Epidemiology and Environmental Health Sciences**

The Department of Epidemiology and Biostatistics and the Department of Environmental Health Sciences jointly offer a dual Doctor of Philosophy (Ph.D.). Students explore the unique set of requirements in relation to study design, bias, measurement of environmental exposures, and measurement of environmental-related health outcomes. The dual Ph.D. requires course work in epidemiology and environmental health sciences selected by the student in consultation with a joint epidemiology/environmental health sciences advisory committee, and successful completion of dissertation research on a topic spanning both disciplines. The successful applicant will have a faculty member in both departments who has agreed to be his/her mentor, and he/she will have a research area of Interest for which we have faculty expertise in both departments. Detailed program requirements for this highly competitive, rigorous dual degree program are available upon request.

#### **Program Requirements for Epidemiology Degree Programs**

A graduate student handbook and a list of specific courses needed to meet these requirements are available in the department.

## Program Requirements for Biostatistics Degree Programs

A graduate student handbook and a list of specific courses needed to meet these requirements are available in the department.

## Department Admission Requirements

### General Admission Requirements for Epidemiology

Admissions decisions are based on an evaluation of the applicants' entire file in relation to the pool of applicants that year. We also evaluate whether the applicant's needs and goals fit well with our department's strengths and resources. We review master's degree applications once/year for fall matriculation, and we review doctoral student applications twice/year for fall and spring matriculation.

Applicants for graduate degree programs in Epidemiology must meet all requirements of The Graduate School ([https://www.sc.edu/study/colleges\\_schools/public\\_health/apply/graduate\\_applicants/](https://www.sc.edu/study/colleges_schools/public_health/apply/graduate_applicants/)) for admission and the Arnold School of Public Health ([https://www.sc.edu/study/colleges\\_schools/public\\_health/apply/graduate\\_applicants/](https://www.sc.edu/study/colleges_schools/public_health/apply/graduate_applicants/)). All applications are submitted through SOPHAS (<http://www.sophas.org/>), with the following required documents:

- Resume or CV
- Three letters of recommendation from academic and/or professional sources
- Official transcripts from **all** schools or colleges previously attended
- GPA 3.0 or higher (4.0 scale)
- GRE scores 50% or higher for each: Verbal, Quantitative, Analytical Writing
  - MCAT scores may not be substituted for GRE scores.
  - The percentiles above are general guidelines not cut points.
- Personal statement describing your academic and research interests and professional goals.
  - Master's applicants should discuss how they became interested in epidemiology as a career choice.
  - Doctoral applicants must discuss their research area of interest along with the faculty member who has agreed to mentor them.
- Non-US institution transcripts must be verified by World Education Services (WES) or equivalent service. Submit course-by-course evaluation (WES ICAP).
- For those whose native language is not English, we require either a TOEFL (minimum 80) or IELTS (minimum 7.0) score.

## Masters Admission Requirements

The Master of Public Health (M.P.H.) program and the Master of Science (M.S.)\* program matriculate one cohort of students every fall. Admission requirements include a four-year baccalaureate degree or its equivalent from an accredited institution, preferably in the arts, sciences, or medicine. Prior professional work experience is considered an asset but is not a requirement

Students admitted to either the M.P.H. or the M.S. program who do not have academic or professional experience that provides a strong understanding of the biological basis of public health are strongly encouraged to select courses that will provide this understanding.

*\*Note: The Master of Science in Public Health degree in epidemiology will undergo a name change. Effective Fall 2021, the new name for the degree program is Master of Science (M.S.). The curriculum remains the same.*

## Doctoral Admission Requirements

For the Doctor of Philosophy (Ph.D.) program, applicants must have a master's degree in public health from an approved school of public health or related field or an equivalent advanced professional degree.

Before an application is reviewed, students must find an epidemiology faculty member in their research area of interest who agrees to be their mentor. This agreement should be mentioned in the personal statement. A holistic approach to application review process is utilized.

Research experience and publications are not required; however, prior experience is highly encouraged along with publications, including first author.

## Admission Requirements for Biostatistics

Applicants for a graduate degree in Biostatistics must have a degree from an approved college or university. Applicants must meet all requirements of The Graduate School for admission and be recommended to the Graduate School for acceptance by the Department of Epidemiology and Biostatistics.

When we make our admissions decisions, we evaluate the applicant's entire file in relation to the pool of applicants that year. We also evaluate whether the applicant's needs and goals fit well with our department's strengths and resources.

The admission criteria for all degree programs follow those of The Graduate School and the Arnold School of Public Health. Before you can be considered for admission, you must submit an Online Application via <http://www.sophas.org>. Your application must include:

- Completed Application submitted through SOPHAS – <http://www.sophas.org>
- At least two letters of recommendation for the MPH and MSPH programs and at least three letters of recommendation for the PhD program
- An updated Résumé or CV
- Official transcripts for all undergraduate and graduate work previously undertaken
- Official copies of Graduate Record Examination (GRE) scores
- A personal statement that addresses research or practice interests and long-term objectives

Candidates for all graduate programs in Biostatistics must demonstrate proficiency in communicating in English, working with mathematical concepts, and in thinking analytically. While we do not set absolute cut points for grade point average and GRE scores (in part because of variability in test-taking ability that may not reflect competence to do well in the programs, and the fact that the percentile scores vary by year) we value their ability to provide us with global comparative criteria. Therefore, we provide the following as a general guideline for all our programs:

- Grade point average of 3.0
- GRE Verbal score > 151 (International students whose GRE Verbal score is > 146, and whose TOEFL score is at least the minimum defined below, will also be considered)
- GRE Quantitative score > 157 for the M.S.P.H. program and > 161 for the Ph.D. program

Committee members review the entire files carefully. Clear demonstration of competence in one or more domain(s) can supersede specific GRE score(s)

An electronic application packet should be submitted to **SOPHAS** as early as possible, and will not be processed until all the required credentials have been received and verified. Electronic applications can be submitted online. For information on how to apply electronically see the Arnold School of Public Health's admissions website.

International applicants whose native language is not English and who have not earned a degree in an English-speaking country are also required to submit a satisfactory score on the **Test of English as a Foreign Language (TOEFL)** or the University of Cambridge's **International English Language Testing System (IELTS)** Academic Course Type 2 exam. The minimum acceptable score on the TOEFL is 230 (computer-based) or 570 (paper-based) or 75 (Internet-based). The minimum acceptable overall band score on the IELTS Academic Course Type 2 exam is 6.5. Proficiency in English sufficient to undertake graduate study is expected upon entry. Students who do not meet proficiency levels established by The Graduate School and the department will be expected to take additional work to raise their level of performance. Also, any transcript from a non-US institution will need to be verified by **World Education Services (WES)**. WES is an organization that provides international credential evaluation and checks documents for validity and accuracy. WES also offers an analysis of an individual's degrees and transcripts and will provide equivalents for each credential. For more information contact WES at <http://www.wes.org> or 212-219-7330.

## Masters Admission Requirements

Departmental courses are sequenced so that students should begin their program of study in the fall semester. However, applications for spring admission will be accepted.

Applicants to the Master of Science in Public Health (M.S.P.H.) program must have a baccalaureate degree in arts, science or medicine. Applicants should also have completed with a B or greater Calculus-2 and Matrix or Linear Algebra. Prior professional work experience is considered an asset but is not a requirement.

Students admitted to the M.S.P.H. program who do not have academic or professional experience that provides a strong understanding of the biological basis of public health are strongly encouraged to select courses that will provide this understanding.

‡\*Note: *Master of Science in Public Health degrees in biostatistics will undergo a name change. Effective Fall 2021, the new name for the degree program is Master of Science (M.S.). The curriculum remains the same.*

## Doctoral Admission Requirements

Departmental courses are sequenced so that students may begin their program of study in the fall or spring semester. Applications for summer admission will also be accepted.

For the Doctor of Philosophy (Ph.D.) program, preference for admission is given to applicants with breadth and depth of academic preparation in Biostatistics, Statistics, or a closely related field. Applicants must have a master's degree in one of these areas, or a master's degree in some other field and experience in these areas. Applicants should also have completed with a B or greater Vector Calculus and Matrix or Linear Algebra.

## Programs

- Biostatistics, M.P.H. (p. 421)
- Biostatistics, M.S.P.H. (p. 424)
- Biostatistics, Ph.D. (p. 424)
- Epidemiology, M.P.H. (p. 427)
- Epidemiology, M.S.P.H. (p. 427)
- Epidemiology, Ph.D. (p. 428)

## Courses

### BIOS 650 - Quantitative Methods in the Health Sciences (3 Credits)

Designed for professionals and pre-professionals who wish to utilize quantitative methods in public and private decision-making; exploratory data analysis, research methods in natural and controlled environments, and elementary biostatistical methods.

**Prerequisites:** STAT 201.

### BIOS 700 - Introduction to Biostatistics (3 Credits)

Health-related statistical applications. Descriptive statistics, probability, confidence intervals, hypothesis testing, regression, correlation, ANOVA. May not be used as part of a degree program in epidemiology or biostatistics. Three lecture hours and one laboratory hour per week.

### BIOS 701 - Concepts and Methods of Biostatistics (3 Credits)

Descriptive and inferential statistical applications to public health. Probability, interval estimation, hypothesis testing, measures of association. Three lecture hours and one laboratory hour per week. Intended for those who will be involved in research applications of biostatistics.

### BIOS 709 - Basic Software for Public Health (1 Credit)

Working with public health data using statistical software. Effective ways to store, clean, merge, and format public health data for analysis.

### BIOS 710 - Effective Data Management for Public Health (3 Credits)

Statistical data management techniques. Microcomputer applications, communication between microcomputers and mainframe, tape and disk storage, access of large health-related databases.

**Prerequisite or Corequisite:** BIOS 700.

### BIOS 711 - Introduction to R Programming (1 Credit)

Students will learn the software program R for performing data management. The course covers basic to advanced commands for properly formatting output, merging data, working with functions, graphing, using programming loops for preparing data for analysis for public health data.

### BIOS 712 - Introduction to Stata Software (1 Credit)

Students will learn the software program Stata for performing data management. The course covers basic to advanced commands for properly formatting output, merging data, working with functions, graphing, using programming loops for preparing data for analysis for public health data.

### BIOS 714 - Introduction to MS Access for Public Health (1 Credit)

This course focuses the uses of Microsoft Access for data management in public health. The course takes the student through building tables, forms, queries, reports and finishes with automated scripts for each of use with Access.

**BIOS 719 - Advanced SAS Methods for Public Health (1 Credit)**

This course focuses on advanced programming for managing and analyzing data using SAS. Building upon skills learned in BIOS 709 (Introduction to SAS), students will learn data management using PROC SQL. Students will also become familiar with the SAS Macro Language which prepares data for conducting efficient statistical analysis.

**BIOS 745 - Seminar in Biostatistics (1-2 Credits)**

Analysis of current and prospective issues in biostatistics, including historical foundations. Includes student exploration of unsolved problems and examination of central issues in biostatistics.

**BIOS 746 - Introduction to Complex Survey Data Analysis (1 Credit)**

Students will learn the basics of data collection methods, sampling design for linear, logistic, and survival analysis complex models using survey data. Students will also learn about weight adjustments, imputation methods with an emphasis on both applied models and the theory behind them.

**Prerequisites:** BIOS 701 and BIOS 709 or equivalent.

**BIOS 748 - Surgery and Emergency Medicine (2 Credits)**

Specialized medical topics in emergency and surgical medicine.

**BIOS 751 - Health Data Systems (3 Credits)**

Origin and operation of databases serving governmental and institutional policy and management of programs.

**Prerequisites:** BIOS 700, HSPM 700.

**BIOS 752 - Vital Record and Health Survey Data Analysis (3 Credits)**

Accessing, managing, analyzing, and interpreting results from state and national vital records and health survey data sets. Common problems, programming techniques, and analytic considerations.

**Prerequisites:** BIOS 700, BIOS 710, EPID 700.

**BIOS 753 - Community Health Studies (3 Credits)**

Process, skills, and management of undertaking health studies in the human community.

**Prerequisites:** BIOS 700, EPID 700.

**BIOS 754 - Discrete Data Analysis (3 Credits)**

Analysis of discrete data in public health studies. Relative risk, odds ratio, rates and proportions, contingency tables, logistic regression, introduction to other advanced topics. Not for biostatistics majors.

**Prerequisites:** EPID 701, BIOS 710, BIOS 757.

**BIOS 755 - Introduction to Longitudinal Data Analysis (3 Credits)**

Introduction to principles and methods for longitudinal & multi-level modeling. Focus on data analysis and interpretation.

**Prerequisites:** BIOS 757.

**BIOS 757 - Intermediate Biostatistics (3 Credits)**

Public health applications of correlation, regression, multiple regression, single and multi-factor analysis of variance and analysis of covariance.

**Prerequisites:** a course in introductory statistics.

**BIOS 758 - Advanced Linear Models in Biostatistics (3 Credits)**

Public health applications of correlation, regression, multiple regression, single and multi-factor analysis of variance and analysis of covariance. Additional topics in analysis of health data including regression diagnostics, multi-collinearity of observational data, ridge/nonlinear regression, principal components, random/mixed effects, unbalanced designs, repeated measures and sampling and design effects.

**Prerequisites:** BIOS 701.

**BIOS 759 - Theory and Methods of Discrete Data Analysis (3 Credits)**

The concepts, principles, and biostatistical techniques necessary to analyze categorical epidemiological data including dose response curves, life tables, and discrete measures of association. Estimation of parameters for logistic and other commonly used epidemiological models.

**Prerequisites:** EPID 701, BIOS 757.

**BIOS 760 - Biostatistical Methods in Clinical Trials (3 Credits)**

The basic and advanced statistical techniques necessary for the design, conduct, analysis, and interpretation of results of clinical trials.

**Prerequisites:** EPID 741, BIOS 757.

**BIOS 761 - Survival Analysis (3 Credits)**

Methods for the analysis of survival data in the biomedical setting. Underlying concepts; standard parametric and nonparametric methods for one or several samples; concomitant variables and the proportional hazards model.

**Prerequisites:** BIOS 757 or BIOS 758.

**BIOS 762 - Biostatistical Modeling of Genomic Data (3 Credits)**

This course is an introduction to important topics and key concepts in statistical genetics, with emphasis on statistics methods and their applications to human complex diseases. The course will cover major concepts and classical statistical methods for the analysis of family and population based human genetic data.

**Prerequisites:** BIOS 757 or equivalent.

**BIOS 765 - Research Design in the Biomedical Sciences (3 Credits)**

Fundamentals of constructing, analyzing, and interpreting biomedical studies; internal and external validity, sample size determination, completely random designs, blocking crossover designs, factorial designs, confounding, nested designs, repeated measure designs.

**Prerequisites:** EPID 741, BIOS 757.

**BIOS 770 - Applied Longitudinal Data Analysis (3 Credits)**

Modern methods for the analysis of repeated measures, correlated outcomes, and longitudinal data, including repeated measures ANOVA, generalized linear models, random effects, and generalized estimating equations.

**Prerequisites:** BIOS 757 or STAT 701 or STAT 705.

**Cross-listed course:** STAT 771

**BIOS 775 - Biostatistical Aspects of Bioinformatics (3 Credits)**

Bioinformatics analyses related to public health and biomedical research. Gene-gene and gene-environment interaction, phylogeny analysis in disease classification, and clustering for expression data. Data analyses, simulation studies, algorithms, and interpretation of health data.

**Prerequisites:** BIOS 757.

**BIOS 780 - Introduction to Quantile Regression (3 Credits)**

Principles and methods of quantile regression, a robust and distribution-free statistical approach that extends the classical mean regression to the analysis of complex treatment effects.

**Prerequisites:** BIOS 757.

**BIOS 790 - Independent Study (1-6 Credits)**

Directed research on a topic to be developed by M.P.H. or M.S.P.H. student and instructor. May be repeated.

**BIOS 794 - Selected Topics in Biostatistics (1-6 Credits)**

Content varies by title. Course may be repeated for a total of 6 credit hours.



**BIOS 798 - Public Health Practice (1-6 Credits)**

Performance of a limited work or service project in a public need setting, pursuit of planned learning objectives related to previously identified aspects of the student's chosen role. Self-monitoring and regular seminars focusing on learning accomplishments.

**Prerequisites:** 9-10 hours of specified courses including EPID 700, BIOS 700.

**BIOS 799 - Thesis Preparation (1-9 Credits)****BIOS 805 - Categorical Data Analysis (3 Credits)**

Advanced methods for analysis of discrete data. Higher order contingency tables, log-linear and other generalized linear models. Multivariate methods for matched pairs and longitudinal data.

**Prerequisites:** BIOS 759 or STAT 704.

**Cross-listed course:** STAT 770

**BIOS 808 - Environmetrics (3 Credits)**

Statistical methods for environmental and ecological sciences, including nonlinear regression, generalized linear models, spatial analyses/kriging, temporal analyses, meta-analysis, quantitative risk assessment.

**Prerequisites:** BIOS 757 or BIOS 701 or STAT 705.

**Cross-listed course:** STAT 708

**BIOS 809 - Environmetrics II (3 Credits)**

Theoretical underpinnings of environmetrics. Spatial statistics, temporal and longitudinal analysis, hierarchical modeling, and Bayesian inferences for environmental data.

**Prerequisites:** STAT 708 or BIOS 808; STAT 714.

**Cross-listed course:** STAT 709

**BIOS 811 - Survival Analysis II (3 Credits)**

Parametric survival analysis, accelerated failure time model, frailty model, competing risk mode and multi-state model. Techniques motivated by applications in epidemiology and clinical medicine research, applications demonstrated using public health data sets.

**BIOS 815 - Generalized Linear Models (3 Credits)**

Statistical theory and applications extending regression and analysis of variance to non-normal data. An integrated treatment encompassing logistic and other binary regressions, log-linear models, and gamma regression models.

**Prerequisites:** STAT 713 or STAT 513 and STAT 705 or BIOS 757.

**Cross-listed course:** STAT 775

**BIOS 816 - Advanced R Programming in Public Health (3 Credits)**

R is a free and open source software environment for statistical computing and graphics. This course provides the principles and techniques to efficiently design, implement, and execute simulation and data analysis routines in quantitative fields like biostatistics, statistics, engineering, finance, and data science.

**Prerequisites:** BIOS 711.

**BIOS 820 - Bayesian Biostatistics and Computation (3 Credits)**

Bayesian statistical methods including hierarchical modeling and the use of the Markov Chain Monte Carlo (MCMC) methods.

**Prerequisites:** STAT 705 or BIOS 757.

**BIOS 822 - Statistical Methods in Spatial Epidemiology (3 Credits)**

A comprehensive introduction to the statistical methods used in the analysis of geo-referenced spatial health data. Topics range from disease mapping to prospective surveillance.

**Prerequisites:** BIOS 757 and BIOS 759.

**BIOS 825 - Multivariate Biostatistics (3 Credits)**

Analysis of multivariate data as found in biomedical studies: multivariate linear models, principal component analysis, factor analysis, discriminant and cluster analysis. Other special multivariate topics such as principal component regression.

**Prerequisites:** STAT 516 or BIOS 757.

**BIOS 845 - Doctoral Seminar (1-3 Credits)**

May be repeated for credit.

**Prerequisites:** complete at least one semester of course work and consent of instructor.

**BIOS 850 - Binary Dose Response Theory and Methods (3 Credits)**

Threshold, mass action and target theory; empirical dose response functions; methods in current use among health science researchers.

**Prerequisites:** STAT 512.

**BIOS 890 - Independent Study (1-3 Credits)**

Directed research on a topic to be developed by doctoral student and instructor. May be repeated.

**BIOS 894 - Selected Topics in Biostatistics (3 Credits)**

Discussion on current and emerging issues in biostatistics.

**BIOS 898 - Doctor of Public Health Practicum (1-6 Credits)**

Students are required to conduct applied public health methods and strategies as a part of their practicum experience. In particular, the student should successfully implement and interpret the results of biostatistical methods in the organization.

**BIOS 899 - Dissertation Preparation (1-12 Credits)**

**Prerequisite:** one full year (18 hours) of graduate study beyond the master's level.

**EPID 594 - Special Topics in Epidemiology (1-6 Credits)**

This course will introduce epidemiologic concepts and methods using cases studies examining current global health challenges. Students will gain an understanding of the role of epidemiology in understanding the distribution of disease and risk factors, and developing, implementing and evaluating public health interventions globally.

**EPID 661 - Parasitology (4 Credits)**

Parasites of biological, economic, and public health importance. Three lecture and three laboratory hours per week.

**Prerequisites:** 300 level Biology course or equivalent.

**Cross-listed course:** BIOL 531, ENHS 661

**EPID 700 - Introduction to Epidemiology (3 Credits)**

Principles of epidemiology with examples of selected health problems. Health status of populations and conceptual tools for translating epidemiologic findings into public health action. May not be used as part of a degree program in epidemiology or biostatistics.

**EPID 701 - Concepts and Methods of Epidemiology (3 Credits)**

Conceptual foundation of epidemiologic research, quantitative methods, and epidemiologic study design. Intended for those who will be involved in epidemiologic research.

**Prerequisite or Corequisite:** BIOS 701.

**EPID 707 - Ethical Issues in Health Care and Research (3 Credits)**

The ethical dimensions of decision making in health care delivery, administration and epidemiologic research. Provides ethical foundations for discussion of topics in health-related research and practice.

**Cross-listed course:** HSPM 707

**EPID 711 - Epidemiologic Research Methods (3 Credits)**

Theoretical and practical aspects of epidemiologic research methods.

**Prerequisites:** EPID 700

**EPID 720 - Comprehensive Microbiology (6 Credits)**

**Prerequisites:** consent of the instructor.

**EPID 721 - Clinical and Population Research Protocol Development and Implementation (2 Credits)**

The purpose of this course is to develop applied research skills related to the development of appropriate data collection protocols for a given public health issue and context.

**EPID 722 - Scientific Writing and Appraisal of Epidemiologic Studies (2 Credits)**

This course will familiarize students with techniques used to critically assess, interpret, evaluate, and synthesize epidemiologic literature. Students will be introduced to research databases, reference management software, reporting guidelines, and methods for systematic reviews. Students will learn how to effectively communicate research finding via manuscript and oral or poster format.

**Prerequisites:** EPID 700, EPID 701 or PUBH 725.

**EPID 725 - Biologic Basis of Public Health (3 Credits)**

Survey of the biology of human disease processes at cellular, tissue and body system levels: application of biological principles to contemporary public health problems.

**EPID 730 - Public Health Surveillance Systems (3 Credits)**

Introduction to the concepts, implementation, and evaluation of surveillance systems to monitor the health of human populations.

**Prerequisites:** EPID 701, PUBH 725, or equivalent course

**EPID 741 - Intermediate Epidemiologic Methods (3 Credits)**

Application of epidemiologic methods to current health problems through analysis of secondary data. Strategies for investigating etiologic hypotheses, assessment and control of confounding.

**Prerequisites:** EPID 701, PUBH 725, or equivalent.

**Prerequisite or Corequisite:** BIOS 757, BIOS 758 and BIOS 709, BIOS 710.

**EPID 742 - Epidemiological Concepts in Selected Disease or Health Conditions (3 Credits)**

The study of selected disease or health conditions illustrative of the interaction between host/agent/environment and the factors involved; and the application of epidemiologic methods to the investigation of such events. Two lecture and three laboratory hours per week.

**Prerequisites:** EPID 701.

**EPID 743 - Nosocomial Disease Control (3 Credits)**

Specialization in the identification of potential or existing health hazards in institutional settings of the health care system; and includes instruction in the application of scientific knowledge to the daily routines in the implementation of appropriate control behaviors. Two lecture and three laboratory hours per week.

**Prerequisites:** BIOS 700, EPID 700, EPID 742.

**EPID 744 - Cardiovascular Disease Epidemiology (3 Credits)**

Epidemiology of selected groups of cardiovascular diseases (CVD) including etiology, pathophysiology, identification and description of events of CVD, and outcomes.

**Prerequisites:** EPID 701, PUBH 725.

**EPID 745 - Seminar in Epidemiology (1-2 Credits)**

Analysis of current and prospective issues in epidemiology, including historical foundations. Includes student exploration and critical consideration of current research and unsolved problems in epidemiology.

**EPID 746 - Cancer Epidemiology (3 Credits)**

Epidemiology of selected cancers in humans, including etiology, pathophysiology, identification and description of events of cancer and outcomes.

**Prerequisites:** EPID 700.

**EPID 747 - Environmental Epidemiology (3 Credits)**

Emphasis on the epidemiology of selected environmental factors which may affect human health including the identification of health hazards and methods of investigation. Two lecture and three laboratory hours per week.

**Prerequisites:** EPID 700, BIOS 700.

**EPID 748 - Epidemiologic Evaluation of Preventive and Personal Health Care (3 Credits)**

Emphasis is on the use of epidemiologic methods and principles in the selection, design, and implementation of evaluation strategies in preventive and personal health service practice areas. Current models and strategies of evaluation appropriate to public health practice will be analyzed and compared. The student is expected to develop and implement an evaluation design. Two lecture and three laboratory hours per week.

**Prerequisites:** EPID 700, BIOS 700.

**EPID 749 - Infectious Diseases Epidemiology (3 Credits)**

Emphasis on epidemiological principles and methods basic to investigation, prevention and control of a variety of bacterial, viral, parasitic, and fungal diseases of public health importance.

**Prerequisites:** EPID 700 and BIOS 700.

**EPID 750 - Methods in Infectious Disease Epidemiology (3 Credits)**

Quantitative methods for the study of infectious disease dynamics, including study design and analysis, mathematical modeling, computer simulation, and phylogenetic inference.

**Prerequisites:** EPID 741 and EPID 749.

**EPID 751 - Sexually Transmitted Diseases: Their Epidemiology and Control (3 Credits)**

A study of the epidemiology of the various sexually transmitted diseases and their complications, with emphasis on their prevention and control.

**Prerequisites:** EPID 700 and BIOS 700.

**EPID 752 - Epidemiology and Control of Parasitic Diseases of Public Health Importance (3 Credits)**

Study of major parasitic diseases of public health importance. Emphasis on epidemiologic principles and patterns of human morbidity and mortality. Analyzes and evaluates various approaches in prevention and control programs.

**Prerequisites:** EPID 700, BIOS 700, and ENHS 661.

**EPID 753 - AIDS: Epidemiology and Control (3 Credits)**

A study of the epidemiology of Acquired Immunodeficiency Syndrome (AIDS) and its various implications and issues with emphasis on its prevention and control.

**EPID 754 - AIDS Seminar (1 Credit)**

Critical analysis of current scientific literature on various aspects and issues on Acquired Immunodeficiency Syndrome (AIDS).

**EPID 755 - Emerging Infectious Diseases: Epidemiology and Pathobiology (3 Credits)**

Principles and factors in emerging infectious diseases with emphasis on epidemiology, pathobiology, prevention, and control.

**Prerequisites:** EPID 749.

**EPID 757 - Epidemiologic Applications to Occupational Health (3 Credits)**

Introduction to clinical and epidemiologic aspects of occupational health and recognition and prevention of occupational diseases and injury. Epidemiologic applications to occupational health are highlighted and stressed, including design and implementation.

**Prerequisites:** EPID 700 or EPID 701.

**EPID 758 - Application of Epidemiology in Public Health (3 Credits)**

The course consists of the development of research skills in epidemiology in the context of public health.

**Prerequisites:** EPID 701, EPID 741.

**EPID 760 - Epidemiological Methods in Clinical Trials (3 Credits)**

Fundamental and practical issues related to the design, conduct, analysis, and interpretation of results of clinical trials.

**Prerequisites:** EPID 700, BIOS 700, EPID 741.

**EPID 763 - Nutritional Epidemiology (3 Credits)**

Covers methodology for investigating nutrition's role in health, including nutritional assessment and the design and interpretation of research studies. Substantive issues emphasize major public health concerns of the 21st century.

**Prerequisites:** EPID 701, PUBH 725, or equivalent.

**EPID 765 - Reproductive and Perinatal Epidemiology (3 Credits)**

Epidemiology of reproductive and perinatal health with emphasis on current research, controversial issues and methodological approaches.

**Prerequisites:** EPID 701, PUBH 725, or equivalent course, BIOS 701.

**EPID 767 - GIS and Public Health Applications (3 Credits)**

Principles and application of basic and intermediate-level GIS technologies in public health practice and research.

**EPID 768 - Psychiatric Epidemiology (3 Credits)**

Methodologic issues in the epidemiologic study of psychiatric disorder, the epidemiology of major psychiatric outcomes, and issues in the study of special populations.

**Prerequisites:** EPID 701, PUBH 725, or equivalent course.

**EPID 770 - Social Epidemiology (3 Credits)**

Influence of social factors and the distribution of those factors on patterns of health and disease. Including individual-level examinations of the role of social determinants in producing health, as well as more macro-level examinations of patterns of social disparities in health status.

**Prerequisites:** EPID 701, PUBH 725, or equivalent course.

**EPID 777 - Genetic and Epigenetic Epidemiology (3 Credits)**

An introduction to genetic and epigenetic epidemiology and application of epidemiological tools, including statistical analyses, to the study of the genome and the epigenome in human populations.

**EPID 785 - Laboratory Practice in Clinical Microbiology (3-6 Credits)**

Laboratory practice in the subdisciplines of clinical microbiology. May be repeated for a total of 18 hours.

**Prerequisites:** EPID 700, EPID 742, BIOS 700, MBIM 720.

**EPID 788 - Practical Methods for Secondary Data Analysis (3 Credits)**

Introduction to data sources and methods commonly used by epidemiologists and health analysts in state or federal health departments and research settings. Methods include data management and analysis using SAS, data interpretation, survey designs, and innovative record linkages. Instructor reserves the right to waive course requirements.

**Prerequisites:** BIOS 700 BIOS 701; EPID 700 EPID 701; BIOS 757 BIOS 758, BIOS 754.

**Prerequisite or Corequisite:** EPID 741 or other equivalent research methods class.

**EPID 790 - Independent Study (1-6 Credits)**

Directed research on a topic to be developed by M.P.H. or M.S.P.H. student and instructor. May be repeated.

**EPID 794 - Selected Topics in Epidemiology (1-6 Credits)**

Content varies by title. Course may be repeated for a total of 6 credit hours.

**EPID 796 - Integrated Learning Experience (1 Credit)**

Demonstrate synthesis of MPH foundational and concentration competencies to address a public health issue in the form of a high-quality written product.

**EPID 798 - Epidemiology Applied Practicum (2 Credits)**

Apply and test public health concepts, theories, and analytical tools learned in the classroom to real-world public health issues outside of the classroom in any one of a variety of settings.

**Prerequisites:** PUBH 725, PUBH 726, PUBH 730, and PUBH 735.

**EPID 799 - Thesis Preparation (1-9 Credits)****EPID 800 - Advanced Methodological Theory in Epidemiology (3 Credits)**

Advanced epidemiologic methods in the design of epidemiologic studies, with emphasis on causal inference. Theories and frameworks of causation and interactions between causes and graphical visualization tools.

**Prerequisites:** EPID 741.

**EPID 801 - Advanced Analytic Methods in Epidemiology (3 Credits)**

Extension of research design and development issues with focus on grant writing.

**Prerequisites:** EPID 800.

**EPID 802 - Grant Writing for Epidemiologists (3 Credits)**

Extension of research design and development issues with focus on writing a major research grant application.

**Prerequisites:** EPID 741.

**EPID 810 - Seminar in the Epidemiology of Trauma (3 Credits)**

Seminar presentation and group discussion on the major issues in the study of trauma associated with accidents, injuries, or violence.

**Prerequisites:** EPID 741, BIOS 759.

**EPID 820 - Seminar in the Epidemiology of Health Effects of Physical Activity (3 Credits)**

Seminar presentation and group discussion on the major issues in the study of physical activity and exercise and their impact on health.

**Prerequisites:** EPID 700.

**EPID 830 - Seminar in the Epidemiology of Aging (3 Credits)**

Exploration in depth of theories, current health problems, research, and methodological issues in the epidemiology of aging.

**EPID 844 - Advanced Cardiovascular Disease Epidemiology: Evidence Synthesis and Evaluation (3 Credits)**

Epidemiology of cardiovascular disease and its risk factors, with a focus on evidence synthesis through systematic reviews.

**Prerequisites:** EPID 701.

**EPID 845 - Doctoral Seminar (1-3 Credits)**

May be repeated for credit.

**Prerequisites:** complete at least one semester of course work.

**EPID 847 - Advanced Environmental Factors and Human Health (3 Credits)**

Advanced methods encompassing the investigation of environmental factors and how they affect human health. Emphasis on reading and interpreting the peer reviewed scientific literature and developing a systematic literature review and grant proposal.

**Prerequisites:** EPID 700 EPID 701 and BIOS 700 BIOS 701.

**EPID 865 - Methods in Reproductive & Perinatal Epidemiology (3 Credits)**

This course provides an overview of reproductive and perinatal epidemiology and the applications in the field of Maternal and Child Health. It covers the current and emerging topics in this area. Designed for doctoral students with interests in conducting research related to reproductive and perinatal epidemiology.

**Prerequisites:** EPID 700 EPID 701 and BIOS 700 BIOS 701.

**EPID 867 - Geographic Information Systems for Public Health Research (3 Credits)**

Principles and application of basic and intermediate-level GIS technologies in public health research. Designed for doctoral students with interest in conducting health-related research using GIS methods.

**EPID 869 - Clinical Effectiveness (3 Credits)**

Clinical Effectiveness is a broad term that includes clinical trials and interventional study designs. The purpose of this course is to develop skills in the application of epidemiologic methods to clinical effectiveness research, by conceptualizing and designing an intervention study. Students will actively participate in teaching and learning through in-class activities and developing a protocol to test an intervention in a clinical trial design.

**Prerequisites:** EPID 701, PUBH 725, or equivalent course.

**EPID 877 - Advanced Methods and Concepts in Nutrition Research (3 Credits)**

Advanced Methods and Concepts in Nutrition Research addresses aspects of nutrition ranging from nutritional biochemistry to dietetics and community nutrition education. It covers disciplinary breadth encompassing the study of effects of dietary exposures on inflammation, epigenetics, immune function, psychological states and traits, physiologic states, and pathophysiologic processes, including carcinogenesis.

**Prerequisites:** EPID 763.

**EPID 890 - Independent Study (1-3 Credits)**

Directed research on a topic to be developed by doctoral student and instructor. May be repeated.

**EPID 894 - Selected Topics in Epidemiology for Doctoral Students (1-3 Credits)**

Variable credit doctoral level epidemiology course (1-3). The specific epidemiologic topic to be taught is determined by the course instructor in consultation with the department.

**EPID 899 - Dissertation Preparation (1-12 Credits)**

Prerequisite: one full year (18 hrs) of graduate study beyond the master's level.

**PUBH 678 - Transforming Health Care for the Future (1 Credit)**

Foundation for beginning health professions students to gain an understanding of the complexities of the health care system through experiential activities conducted in interprofessional teams and the importance of interprofessional collaboration in order to improve the system.

**Cross-listed course:** SOWK 678

**PUBH 700 - Perspectives in Public Health (3 Credits)**

Seminar-format orientation to history, mission, and core services and disciplines of public health to develop understanding of current public health practice and how many health-related disciplines contribute to achieving public health goals.

**PUBH 710 - Ethics and the Health Sciences (1-4 Credits)**

Students are introduced to formal and informal codes of professional conduct of various health science disciplines and understand the implications of these distinctions for interdisciplinary research, clinical practice, and administration.

**PUBH 725 - Quantitative Methods for Public Health Practice (5 Credits)**

Introduction to epidemiology and biostatistics and their application to public health issues and practice. Covers basic epidemiologic, biostatistical, and data management techniques used to analyze and interpret data in the field of public health.

**PUBH 726 - Qualitative Methods for Public Health Practice (3 Credits)**

An introductory course on why, when, and how to apply qualitative data collection and analysis methods to public health activities with a focus on practice-based application. Identifying, working with, and communicating with a range of community stakeholders are also discussed.

**PUBH 730 - Public Health Systems, Policy, and Leadership (3 Credits)**

A course on public health management and policy process and advocacy to develop effective public health leaders. Included is an emphasis on the relationships between people and their environment and the impact of the environment on human health and well-being.

**Prerequisites:** PUBH 725 and PUBH 726.

**PUBH 735 - Practical Applications of Public Health Planning (4 Credits)**

A practical approach to planning public health programs through the application of planning frameworks and the exploration of fundamental issues in planning, implementing and evaluating programs in various settings addressing diverse populations and issues.

**Prerequisites:** PUBH 725 and PUBH 726.

**PUBH 743 - Foundations of Health Disparities (3 Credits)**

Evolution of health disparities from historical, public, social, economic, and political perspectives.

**PUBH 791 - Special Topics Public Health (1-3 Credits)**

The purpose of this course is to provide the student of public health a clear understanding of public health history as a key component of the environment in which the any health professional must function. The course content will begin in prehistory and have a worldwide perspective through the 1700s. It will then shift to the history of the United States. In the historical, social, economic, and political context that the US public health and health care systems evolved are lessons and understandings that are necessary for this generation of health administrators and health policy makers to advance health for all. The first part of the course will examine the impact of disease on world history through the 18th century. The second and third parts of the course will present, from a historical perspective, the evolution of public health and health care delivery in the United States.

**PUBH 798 - Public Health Practice (1-6 Credits)**

Limited work experience or service project in an approved public health setting.

**Prerequisites:** BIOS 700 or BIOS 701 and EPID 700 or EPID 701.

**PUBH 810 - Ethics in Public Health Research and Practice (1 Credit)**

Foundations of public health ethics with application to practice and to responsible conduct of research in public health disciplines. Enrollment restricted to Doctoral students & post-docs, master's students by permission of instructor.

## Biostatistics, M.P.H.

The goal of the Master of Public Health degree in Biostatistics is to prepare students with prior public health experience, through quality lecture and field practice experiences and other research opportunities, to apply analytical and investigative biostatistical skills in a public health setting.

### Learning Outcomes

- Students will evaluate a public health surveillance system and identify salient gaps and methods to address them.
- Students will determine the appropriate study designs for a give public health problem and context.
- Students will compare and contrast the strengths and limitations of epidemiologic study designs (randomized trials and observational studies), including biases and methods to minimize bias.
- Students will formulate a research question and manage and analyze data from public health administrative or surveillance data or electronic health data repositories.
- Students will develop appropriate data collection protocols for a given public health issue and context.
- Students will critically evaluate epidemiologic scientific literature.

### Admission Requirements for Biostatistics

Applicants for a graduate degree in Biostatistics must have a degree from an approved college or university. Applicants must meet all requirements of The Graduate School for admission and be recommended to the Graduate School for acceptance by the Department of Epidemiology and Biostatistics.

When we make our admissions decisions, we evaluate the applicant's entire file in relation to the pool of applicants that year. We also evaluate whether the applicant's needs and goals fit well with our department's strengths and resources.

The admission criteria for all degree programs follow those of The Graduate School and the Arnold School of Public Health. Before you can be considered for admission, you must submit an Online Application via <http://www.sophas.org>. Your application must include:

- Completed Application submitted through SOPHAS – <http://www.sophas.org>
- At least two letters of recommendation for the MPH and MSPH programs and at least three letters of recommendation for the PhD program
- An updated Résumé or CV
- Official transcripts for all undergraduate and graduate work previously undertaken
- Official copies of Graduate Record Examination (GRE) scores
- A personal statement that addresses research or practice interests and long-term objectives

Candidates for all graduate programs in Biostatistics must demonstrate proficiency in communicating in English, working with mathematical concepts, and in thinking analytically. While we do not set absolute cut points for grade point average and GRE scores (in part because of variability in test-taking ability that may not reflect competence to do well in the programs, and the fact that the percentile scores vary by year) we value their ability to provide us with global comparative criteria. Therefore, we provide the following as a general guideline for all our programs:

- Grade point average of 3.0
- GRE Verbal score > 151 (International students whose GRE Verbal score is > 146, and whose TOEFL score is at least the minimum defined below, will also be considered)
- GRE Quantitative score > 157 for the M.S.P.H. program and > 161 for the Ph.D. program

Committee members review the entire files carefully. Clear demonstration of competence in one or more domain(s) can supersede specific GRE score(s)

An electronic application packet should be submitted to **SOPHAS** as early as possible, and will not be processed until all the required credentials have been received and verified. Electronic applications can be submitted online. For information on how to apply electronically see the Arnold School of Public Health's admissions website.

International applicants whose native language is not English and who have not earned a degree in an English-speaking country are also required to submit a satisfactory score on the **Test of English as a Foreign Language (TOEFL)** or the University of Cambridge's **International English Language Testing System (IELTS)** Academic Course Type 2 exam. The minimum acceptable score on the TOEFL is 230 (computer-based) or 570 (paper-based) or 75 (Internet-based). The minimum acceptable overall band score on the IELTS Academic Course Type 2 exam is 6.5. Proficiency in English sufficient to undertake graduate study is expected upon entry. Students who do not meet proficiency levels established by The Graduate School and the department will be expected to take additional work to raise their level of performance. Also, any transcript from a non-US institution will need to be verified by **World Education Services (WES)**. WES is an organization that provides international credential evaluation and checks documents for validity and accuracy. WES also offers an analysis of an individual's degrees and transcripts and

will provide equivalents for each credential. For more information contact WES at <http://www.wes.org> or 212-219-7330.

### Masters Admission Requirements

Departmental courses are sequenced so that students should begin their program of study in the fall semester. However, applications for spring admission will be accepted.

Applicants to the Master of Science in Public Health (M.S.P.H.) program must have a baccalaureate degree in arts, science or medicine. Applicants should also have completed with a B or greater Calculus-2 and Matrix or Linear Algebra. Prior professional work experience is considered an asset but is not a requirement.

Students admitted to the M.S.P.H. program who do not have academic or professional experience that provides a strong understanding of the biological basis of public health are strongly encouraged to select courses that will provide this understanding.

‡\*Note: Master of Science in Public Health degrees in biostatistics will undergo a name change. Effective Fall 2021, the new name for the degree program is Master of Science (M.S.). The curriculum remains the same.

## Degree Requirements (45 Hours)

A minimum of 45 credit hours is required for the Master of Public Health with a major in Biostatistics. Students are required to have two semesters of calculus or will be expected to make up the deficit beyond the minimum program of study. Additional courses may be required to meet prerequisites or to accommodate electives. All department core courses must be passed with a grade of "B" or better. Failure to do so will necessitate repeating the course; these courses can only be repeated once. Course requirements are given below.

### School of Public Health Core (9 Hours)

Course	Title	Credits
ENHS 660	Concepts of Environmental Health Science	3
HSPM 700	Approaches and Concepts for Health Administration	3
HPEB 700	Concepts and Methods in Health Promotion	3
<b>Total Credit Hours</b>		<b>9</b>

### Department Core (18 Hours)

Course	Title	Credits
BIOS 701	Concepts and Methods of Biostatistics	3
EPID 701	Concepts and Methods of Epidemiology	3
BIOS 757	Intermediate Biostatistics	3
EPID 741	Intermediate Epidemiologic Methods	3
EPID 745	Seminar in Epidemiology	1-2
BIOS 745	Seminar in Biostatistics	1-2
BIOS 710	Effective Data Management for Public Health	3
<b>Total Credit Hours</b>		<b>17-19</b>

### Major Courses (12 Hours)

Course	Title	Credits
BIOS 758	Advanced Linear Models in Biostatistics	3
BIOS 759	Theory and Methods of Discrete Data Analysis	3
STAT 512	Mathematical Statistics	3
Select one of the following:		3

BIOS 751	Health Data Systems
BIOS 752	Vital Record and Health Survey Data Analysis
BIOS 760	Biostatistical Methods in Clinical Trials
BIOS 765	Research Design in the Biomedical Sciences
BIOS 770	Applied Longitudinal Data Analysis
BIOS 775	Biostatistical Aspects of Bioinformatics
BIOS 805	Categorical Data Analysis
BIOS 808	Environmetrics
BIOS 809	Environmetrics II
BIOS 761	Survival Analysis
BIOS 815	Generalized Linear Models
BIOS 820	Bayesian Biostatistics and Computation
BIOS 825	Multivariate Biostatistics
STAT 513	Theory of Statistical Inference
STAT 518	Nonparametric Statistical Methods
STAT 519	Sampling
<b>Total Credit Hours</b>	<b>12</b>

### Practice (6 Hours)

Course	Title	Credits
BIOS 798	Public Health Practice	6
<b>Total Credit Hours</b>		<b>6</b>

### Practicum Requirements for the M.P.H.

Public Health in the United States is practiced in diverse settings that include both public and private agencies. Regardless of the type of agency in which it is practiced, public health includes a philosophy of social justice, concepts of community, and population perspectives. The range of public health activities in populations include preventing epidemics and the spread of disease, protecting against environmental hazards, preventing injuries, promoting and encouraging healthy behaviors, responding to disasters and assisting communities in recovery and assuring quality and accessibility of health services (Public Health in America, APHA, 1995). For epidemiologists and biostatisticians, one important aspect of public health practice is learning to bridge the gap between data collection/analysis and decision-making in addressing the goals of public health.

### Prerequisites

Minimum course prerequisites for the practice experience: completion of at least one of the School of Public Health core courses and the department core. Students must pass the progression examination before beginning the practice.

### Selection of Appropriate Practice Setting, Mentor and Faculty

A variety of public agencies offer practice opportunities for students. Mentors for the practice experience are in most instances individuals whose daily activity focuses primarily on public health practice, such as those who develop, manage, or evaluate programs at the SC Department of Health and Environmental Control. Faculty research projects are not appropriate for the practice experience. Faculty with joint appointments in the School of Public Health and a practice setting may serve as Mentors as long as the practice experience is clearly situated in the practice setting and has a practice focus, and the Mentor is functioning, for the purposes of the student's practice experience, primarily in his or her practice capacity. See 7 below: Developing a Work Task. Assistantships will not be offered to satisfy any academic

requirements, including practice requirements and thesis/dissertation research.

### Academic Credit

Students in the M.P.H. program must satisfactorily complete a total of six credit hours in Public Health Practice. Practice can be taken in more than one semester, and credit hours assigned are variable depending upon the nature and extent of the work tasks undertaken. Three hours of practice work in a regular semester (Fall or Spring terms) requires an average of 10 hours of actual work each week including writing the final report, or 20 hours per week for six credits. In a summer term, three hours of credit would require 20 hours per week and six hours of credit would require 40 hours per week.

### Ethics and Professional Standards

Public Health Practice combines the accomplishment of a task with intentional learning on the part of a student. In Public Health Practice, students are responsible for initiating their work and establishing learning objectives. In Public Health Practice, the student's work is for the host organization's benefit, and must not be used outside its purview without specific permission, usually in writing. The results of this work are "controlled" by the host organization or its representative.

Professional conditions of confidentiality are to be honored according to prevailing practice of the sponsoring organization. In general, information received from an individual or organization belongs to that individual or organization and recipients (i.e., students) are not free to pass along this information to other parties without the consent of the individual or organization.

All practice projects involving human subjects must be reviewed and approved by the appropriate ethics review committee. Research qualifying for exemption (typically secondary data analysis of existing data, observational studies with adults, or evaluation of service/public activities) can be approved by the University Institutional Review Board. The IRB application must be completed online ([https://sc.edu/about/offices\\_and\\_divisions/research\\_compliance/irb/](https://sc.edu/about/offices_and_divisions/research_compliance/irb/)). It will be necessary to register the first time you enter the site. Some projects must also be approved by the agency review committee at which the practicum is conducted. Any necessary approvals must be obtained prior to beginning work on the defined practicum tasks. Some practicum activities related to an ongoing research project may be covered under that project's IRB approval; this should be discussed with the project PI and/or practicum advisor; in most situations, notification of the IRB of a change in protocol is sufficient.

### Financial Support

If financial resources are required for doing a Public Health Practice activity, the responsibility for negotiating these arrangements rests with the sponsoring agency and the student. These costs and responsibilities for coverage are included in the practice proposal. Responsibilities of a graduate assistantship cannot be used to satisfy practice requirements.

### Participant Roles in BIOS 798

Students are expected to:

- Take initiative and responsibility in defining competence to be developed, arranging or selecting an appropriate setting for practice activity, developing clear work and learning objectives and completing work and learning tasks by the dates agreed upon.
- Arrange appropriate meetings with Faculty Advisor and Mentor, including the final oral presentation.

Faculty Advisors are expected to:

- Advise students in developing work and learning proposals.
- Advise students regarding ethics review required of the practice project.
- Participate in meetings with student and Mentor at the location of student's practice.
- Provide ongoing expert advice and guidance as needed or requested.
- Assess learning outcomes and assign pass/fail grade at appropriate times.
- Attend final oral presentation by student.

Mentors are expected to:

- Assist SPH staff and students to define short-term tasks of potential use to his or her organization.
- Review student's "proposal" for usefulness to organization, determine limits of Mentor's role with student, and provide on-site direction to the work component of the practice.
- Provide student logistical support (arranging space, equipment, use of phones, use of computer and/or computer software, secretarial help, making introductions, providing data or helping gain access to it, and general advice within the organization).
- Attend the student's required final oral presentation.
- Assist with assessment of student's work and growth in competence during the practice.

### Developing a Work Task

For some students, a work task may be defined and negotiated for a practice activity prior to establishing specific learning objectives. In this case, discovering the learning potential of a given work task is required. For others who have developed and articulated learning objectives, the requirement is to locate and determine experiences that will enable the student to develop the specified skills.

There is no single proper way to find the "right" setting and task. The challenge is to locate something that needs to be done that some organization and persons within the organization care about, and then determine if that task can be done in the time you have available and if it allows you to pursue your learning objectives.

Experience with organizations that have sponsored SPH students suggests that if six major conditions are present, a sound practice activity can be developed. The conditions are:

- An organization wants or needs something done, and it "controls" or "owns" the work results.
- The student has some previously developed competence or experience that indicates the potential for contributions to the organization and citizenry. This includes knowledge gained in prerequisite courses.
- The student has well thought out and communicated learning objectives that can be pursued in the framework of doing the task.
- The student demonstrates a comprehensive understanding of what is to be done and is able to identify a supportive network of people.
- A Mentor is identified who both wants the work done and wants to assist the student in pursuing the designated learning objectives.
- The student seeks advice and monitoring from his/her Faculty Advisor.

The draft Work Task Proposal contains a minimal checklist of items that are considered important in preparing a work task proposal for Public Health Practice. Complete this draft first and discuss it with your Practice Faculty Advisor. The Public Health Practice Agreement form should be completed before the start of the practicum.

Individual sessions should be arranged by the student as needed with the Faculty Advisor or Mentor. It is recommended that the student schedule regular conferences with the Faculty Advisor.

### Final Report and Oral Presentation

The student must write a final report on his/her practice experience and give an oral presentation based on this report. The report should address the objectives set down in the student's practice plan. The faculty and the Mentor must approve the final version of the Practice Report. The student should provide a spiral bound copy of the report to the faculty, Mentor, and the department (a formal copy is not submitted to the Graduate School).

The student is responsible for arranging the time and place of the oral presentation. The Faculty Advisor and Mentor must be present at the presentation. The student should make a general announcement in the School of Public Health at least a week before the presentation so that anyone who wishes can attend the oral presentation.

## Biostatistics, M.S.P.H.

A minimum of 44 credit hours is required for the Master of Science with a major in Biostatistics. Students are required to have two semesters of calculus or will be expected to make up the deficit beyond the minimum program of study. Additional courses may be required to meet prerequisites or to accommodate electives. All department core courses must be passed with a grade of "B" or better. Failure to do so will necessitate repeating the course; these courses can only be repeated once. Course requirements are given below.

### Learning Outcomes

- Students will demonstrate the ability to evaluate a given health related problem and to identify the most appropriate statistical technique (e.g., t-test, contingency table, correlation) for analysis.
- Students will demonstrate the ability to interpret the results of a statistical analysis and to communicate such interpretations in an easily comprehensible manner.
- Display a mastery of traditional and newly developed statistical techniques, including multi-variable methods for continuous and categorical data analysis.
- Students will demonstrate the ability to use statistical software packages to obtain, manage, and analyze public health data.
- Students will demonstrate the ability to finish a thesis and communicate the results.

## Requirements

### School of Public Health Core (3 Hours)

Course	Title	Credits
PUBH 700	Perspectives in Public Health	3
<b>Total Credit Hours</b>		<b>3</b>

### Department Core (16 Hours)

Course	Title	Credits
BIOS 701	Concepts and Methods of Biostatistics	3
EPID 701	Concepts and Methods of Epidemiology	3
BIOS 745	Seminar in Biostatistics	1
BIOS 757	Intermediate Biostatistics	3
BIOS 758	Advanced Linear Models in Biostatistics	3
BIOS 709	Basic Software for Public Health	1
BIOS 711	Introduction to R Programming	1
BIOS 712	Introduction to Stata Software	1
<b>Total Credit Hours</b>		<b>16</b>

### Major Courses (16 Hours)

Course	Title	Credits
BIOS 746	Introduction to Complex Survey Data Analysis	1
BIOS 759	Theory and Methods of Discrete Data Analysis	3
BIOS 761	Survival Analysis	3
BIOS 770	Applied Longitudinal Data Analysis	3
STAT 512	Mathematical Statistics	3
STAT 513	Theory of Statistical Inference	3
Select one of the following: <sup>1</sup>		3
BIOS 760	Biostatistical Methods in Clinical Trials	
BIOS 765	Research Design in the Biomedical Sciences	
BIOS 775	Biostatistical Aspects of Bioinformatics	
BIOS 780	Introduction to Quantile Regression	
BIOS 805	Categorical Data Analysis	
BIOS 811	Survival Analysis II	
BIOS 815	Generalized Linear Models	
BIOS 820	Bayesian Biostatistics and Computation	
BIOS 825	Multivariate Biostatistics	
EPID 741	Intermediate Epidemiologic Methods	
STAT 518	Nonparametric Statistical Methods	
STAT 519	Sampling	
<b>Total Credit Hours</b>		<b>19</b>

<sup>1</sup> The student may choose an elective from outside of this list, with the permission of their advisor.

### Thesis (6 Hours)

Course	Title	Credits
BIOS 799	Thesis Preparation	6
<b>Total Credit Hours</b>		<b>6</b>

## Biostatistics, Ph.D.

The Doctor of Philosophy prepares students, through quality lecture and practical experiences and other research opportunities, for involvement in teaching and independent and collaborative biostatistical research; and trains researchers to teach and to pursue original research on analytical approaches to investigating health conditions, and to develop novel biostatistical approaches. The following objectives are premised upon having successfully met all of the objectives delineated previously that are common to the M.P.H. and M.S. degrees.



## Learning Outcomes

- Students will display a mastery of advanced biostatistical techniques.
- Students will demonstrate the ability to teach topics in biostatistics in a formal classroom setting.
- Students will demonstrate the ability to consult with clients outside of the university setting and provide them with statistical assistance on a health-related problem.
- Students will demonstrate the ability to finish a dissertation and communicate the results.

## Admissions

Applicants for a graduate degree in Biostatistics must have a degree from an approved college or university. Applicants must meet all requirements of The Graduate School for admission and be recommended to the Graduate School for acceptance by the Department of Epidemiology and Biostatistics.

When we make our admissions decisions, we evaluate the applicant's entire file in relation to the pool of applicants that year. We also evaluate whether the applicant's needs and goals fit well with our department's strengths and resources.

The admission criteria for all degree programs follow those of The Graduate School and the Arnold School of Public Health. Before you can be considered for admission, you must submit an Online Application via <http://www.sophas.org>. Your application must include:

- Completed Application submitted through SOPHAS – <http://www.sophas.org>
- At least two letters of recommendation for the MPH and MSPH programs and at least three letters of recommendation for the PhD program
- An updated Résumé or CV
- Official transcripts for all undergraduate and graduate work previously undertaken
- Official copies of Graduate Record Examination (GRE) scores
- A personal statement that addresses research or practice interests and long-term objectives

Candidates for all graduate programs in Biostatistics must demonstrate proficiency in communicating in English, working with mathematical concepts, and in thinking analytically. While we do not set absolute cut points for grade point average and GRE scores (in part because of variability in test-taking ability that may not reflect competence to do well in the programs, and the fact that the percentile scores vary by year) we value their ability to provide us with global comparative criteria. Therefore, we provide the following as a general guideline for all our programs:

- Grade point average of 3.0
- GRE Verbal score > 151 (International students whose GRE Verbal score is > 146, and whose TOEFL score is at least the minimum defined below, will also be considered)
- GRE Quantitative score > 157 for the M.S.P.H. program and > 161 for the Ph.D. program

Committee members review the entire files carefully. Clear demonstration of competence in one or more domain(s) can supersede specific GRE score(s)

An electronic application packet should be submitted to **SOPHAS** as early as possible, and will not be processed until all the required credentials have been received and verified. Electronic applications can be submitted online. For information on how to apply electronically see the Arnold School of Public Health's admissions website.

International applicants whose native language is not English and who have not earned a degree in an English-speaking country are also required to submit a satisfactory score on the **Test of English as a Foreign Language (TOEFL)** or the University of Cambridge's **International English Language Testing System (IELTS)** Academic Course Type 2 exam. The minimum acceptable score on the TOEFL is 230 (computer-based) or 570 (paper-based) or 75 (Internet-based). The minimum acceptable overall band score on the IELTS Academic Course Type 2 exam is 6.5. Proficiency in English sufficient to undertake graduate study is expected upon entry. Students who do not meet proficiency levels established by The Graduate School and the department will be expected to take additional work to raise their level of performance. Also, any transcript from a non-US institution will need to be verified by **World Education Services (WES)**. WES is an organization that provides international credential evaluation and checks documents for validity and accuracy. WES also offers an analysis of an individual's degrees and transcripts and will provide equivalents for each credential. For more information contact WES at <http://www.wes.org> or 212-219-7330.

### Doctoral Admission Requirements

Departmental courses are sequenced so that students may begin their program of study in the fall or spring semester. Applications for summer admission will also be accepted.

For the Doctor of Philosophy (Ph.D.) program, preference for admission is given to applicants with breadth and depth of academic preparation in Biostatistics, Statistics, or a closely related field. Applicants must have a master's degree in one of these areas, or a master's degree in some other field and experience in these areas. Applicants should also have completed with a B or greater Vector Calculus and Matrix or Linear Algebra.

## Degree Requirements (42 Post-Masters Hours)

### Coursework

Course	Title	Credits
PUBH 700	Perspectives in Public Health	3
<b>Total Credit Hours</b>		<b>3</b>

### Courses in Statistics (9 Hours)

Course	Title	Credits
STAT 712	Mathematical Statistics I	3
STAT 713	Mathematical Statistics II	3
STAT 714	Linear Statistical Models	3
<b>Total Credit Hours</b>		<b>9</b>

### Seminar and Practica (9 Hours)

Course	Title	Credits
BIOS 845	Doctoral Seminar (1 credit per semester for 3 semesters) <sup>1</sup>	3
BIOS 890	Independent Study (Teaching Practicum)	3

BIOS 890	Independent Study (Consulting Practicum)	3
<b>Total Credit Hours</b>		<b>9</b>

<sup>1</sup> One credit hour of EPID 845 may be substituted.

## Department Core (9 Hours)

Course	Title	Credits
Select 800-level Biostatistics		9
<b>Total Credit Hours</b>		<b>9</b>

## Electives (9 Hours)

### Cognate (3 Hours)

Course	Title	Credits
Select three of the following:		9
BIOS 758	Advanced Linear Models in Biostatistics	
BIOS 759	Theory and Methods of Discrete Data Analysis	
BIOS 760	Biostatistical Methods in Clinical Trials	
BIOS 761	Survival Analysis	
BIOS 765	Research Design in the Biomedical Sciences	
BIOS 770	Applied Longitudinal Data Analysis	
BIOS 775	Biostatistical Aspects of Bioinformatics	
BIOS 780	Introduction to Quantile Regression	
BIOS 794	Selected Topics in Biostatistics	
BIOS 805	Categorical Data Analysis	
BIOS 811	Survival Analysis II	
BIOS 815	Generalized Linear Models	
BIOS 820	Bayesian Biostatistics and Computation	
BIOS 822	Statistical Methods in Spatial Epidemiology	
BIOS 825	Multivariate Biostatistics	
BIOS 890	Independent Study	
BIOS 894	Selected Topics in Biostatistics	

**Total Credit Hours** 9

## Dissertation (12 Hours)

Course	Title	Credits
BIOS 899	Dissertation Preparation	12
<b>Total Credit Hours</b>		<b>12</b>

Note: With the exception of Master's core courses (EPID 701, BIOS 701, BIOS 710, and BIOS 757, and their equivalents), up to 12 hours may be transferred from previous graduate coursework, with the approval of the student's advisor and the Graduate Director.

To fulfill the Graduate School's requirement that all doctoral programs have a minimum of 60 hours post-baccalaureate, an additional 9 hours must appear on the program of study. These may include the Master's core courses listed above.

The requirement to take PUBH 700 may be waived with Graduate Director approval if a student has taken a similar course during his/her master's degree program. If this requirement is waived, the student will be required to take 3 additional Biostatistics/Statistics credit hours to replace this course.

## Dissertation Requirements for the Ph.D.

### Dissertation Proposal

All doctoral students must complete a research project culminating in a dissertation. The dissertation must be based on original research, typically addressing a basic research problem. The first step in that process is the development of the dissertation proposal, and its oral defense before the student's doctoral committee. The committee must approve the proposal in writing before the student can proceed with the research.

### Ethics and Professional Standards

All dissertation research involving human subjects must be reviewed and approved by the appropriate ethics review committee. Research qualifying for exemption (typically secondary data analysis of existing data, observational studies with adults, or evaluation of service/public activities) can be approved by the University Institutional Review Board. The IRB application must be completed online at [http://www.orc.research.sc.edu/eIRB\\_migration\\_info.html](http://www.orc.research.sc.edu/eIRB_migration_info.html) ([https://sc.edu/about/offices\\_and\\_divisions/research\\_compliance/irb/](https://sc.edu/about/offices_and_divisions/research_compliance/irb/)). It will be necessary to register the first time you enter the site. Some projects must also be approved by the review committee at the agency where the dissertation research is conducted. Any necessary approvals must be obtained prior to beginning work on the defined research. Some dissertation activities related to an ongoing research project may be covered under that project's IRB approval; this should be discussed with the project PI and/or dissertation advisor; in most situations, notification of the IRB of a change in protocol is sufficient.

### Deadlines

The dissertation must be read, critically evaluated, and approved by all members of the Dissertation Committee. In accordance with graduate School guidelines, the following deadlines must be met. The specific dates for a semester are available on the U.S.C. Graduate School home page <http://www.gradschool.sc.edu>.

1. The first complete draft of the dissertation must be in the hands of the Dissertation Committee at least 60 days before the end of the semester (Graduate Studies Bulletin); the approximate dates are October 15, March 15, and June 15 for fall, spring and summer sessions respectively. This is approximately six weeks before the filing date for the dissertation, and should be at least one month before the scheduled defense. The dissertation defense should be scheduled at this time; the Graduate Director must approve the scheduled time (see guidelines for scheduling in section 4 below).
2. The final copy is to be submitted to each committee member at least 30 days prior to the end of the semester (Graduate Studies Bulletin) or at least one week prior to the dissertation defense, whichever is earlier.
3. The dissertation defense must be held at least one week before the Graduate School filing date, which is 20 days before the end of the semester.
4. The student must file the final dissertation, with the designated number of copies, by the filing date. The Graduate Director of the student's program, or the administrative assistant for education, will give preliminary approval to title page and general format. Final approval is given by the Graduate School when the thesis is filed at a scheduled appointment.

### Dissertation Defense and Examination

1. The candidate must publicly present the dissertation in a 45-60 minute presentation. Announcements of this presentation should be posted and sent to the EPID-BIOS listserv at least one week

before the defense; at least one announcement must be posted on the seminar bulletin board outside the Department Office. The dissertation defense should be scheduled in an available classroom and not during the scheduled class time of any department core course. Department faculty are strongly encouraged to attend dissertation defenses.

- The dissertation defense should be scheduled in an available classroom and not during the scheduled class time of any department core course. Department faculty are strongly encouraged to attend dissertation defenses.
- The candidate must pass an oral comprehensive examination that shall be administered immediately following the presentation and evaluated by his/her Dissertation Examination Committee. This examination will focus on the technical and scientific aspects and the scholarly delineation of the dissertation topic, and may cover any other subject matter relevant to the student's field of study.

### Final Version and Copies

All Dissertation Committee members must approve the final version of the dissertation and sign the title page before the student submits it to the Graduate School. The student should provide each Dissertation Committee member a copy of the dissertation as submitted to the Graduate School, bound in a manner acceptable to the committee. These copies are in addition to the minimum number required by the Graduate School and any personal copies. Students are responsible to make sure the dissertation meets the Graduate School requirements (see: <http://gradschool.sc.edu/thesisdissertation/dissertation.htm>).

## Epidemiology, M.P.H.

### Overview

The mission of the Master of Public Health (M.P.H.) degree in epidemiology is to prepare students to apply epidemiologic skills in a practice setting. Students will learn and develop skills in planning and conducting epidemiological studies; developing and evaluating surveillance programs; developing culturally appropriate protocols for data collection; performing data analysis and presenting results orally and in writing. Upon graduation, students will be competitive for positions available at state health or governmental health departments, private industry, clinical, or university settings.

Upon completion of the M.P.H. degree program, students will have successfully mastered:

- CEPH<sup>†</sup> M.P.H. foundational public health knowledge competencies (n=12)
- The 22 CEPH M.P.H. foundational competencies (n=22)
- Epidemiology learning outcomes listed below (n=6)

### Learning Outcomes

- Students will evaluate a public health surveillance system, identify salient gaps, and methods to address them.
- Students will determine the appropriate study designs for a given public health problem and context.
- Students will compare and contrast the strengths and limitations of epidemiologic study designs (randomized trials and observational studies), including biases and methods to minimize bias.
- Students will formulate a research question and manage and analyze data from public health administrative or surveillance data, or electronic health data repositories.

- Students will develop appropriate data collection protocols for a given public health issue and context.
- Students will critically evaluate epidemiologic scientific literature.

<sup>†</sup> CEPH Council of Education for Public Health is the accrediting body for all schools and programs in public health.

## Degree Requirements (43 Hours)

### School of Public Health Core (16 Hours)

Course	Title	Credits
PUBH 725	Quantitative Methods for Public Health Practice	5
PUBH 726	Qualitative Methods for Public Health Practice	3
PUBH 730	Public Health Systems, Policy, and Leadership	3
PUBH 735	Practical Applications of Public Health Planning	4
PUBH 678	Transforming Health Care for the Future	1
<b>Total Credit Hours</b>		<b>16</b>

### Department Core (15 Hours)

Course	Title	Credits
EPID 721	Clinical and Population Research Protocol Development and Implementation	2
EPID 722	Scientific Writing and Appraisal of Epidemiologic Studies	2
EPID 741	Intermediate Epidemiologic Methods	3
BIOS 709	Basic Software for Public Health	1
BIOS 719	Advanced SAS Methods for Public Health	1
BIOS 757	Intermediate Biostatistics	3
EPID 796	Integrated Learning Experience	1
EPID 798	Epidemiology Applied Practicum	2
<b>Total Credit Hours</b>		<b>15</b>

### Major Courses (6 Hours)

Course	Title	Credits
EPID 730	Public Health Surveillance Systems	3
EPID 788	Practical Methods for Secondary Data Analysis	3
<b>Total Credit Hours</b>		<b>6</b>

### Electives (6 Hours)

- Electives may be chosen from epidemiology courses or courses in the University that support the overall educational goals of the student. The Faculty Advisor must approve all elective courses.

## Epidemiology, M.S.P.H.

### Overview

The mission of the M.S.\* degree program in epidemiology is to prepare students for involvement in epidemiologic research that addresses the distribution and determinants of disease and other health-related conditions and behaviors. Students will develop a working knowledge in epidemiologic methods and in identifying the determinants of disease and other health conditions. Students will gain skills conducting ethical population-based research, analyzing data, interpreting results of data analyses, and effectively communicating public health information and epidemiologic data both orally and in writing. Upon graduation, students will be competitive for doctoral programs and master's level trained

positions in epidemiology available at state health or governmental health departments, clinical, private industry, or university settings.

## Learning Outcomes

- Students will formulate research questions and develop evidence-based hypotheses that are testable with quantitative data.
- Students will develop protocols for primary data collection and for documentation of secondary data analyses.
- Students will synthesize and critically evaluate public health literature.
- Students will choose and apply appropriate quantitative analysis methods to answer a specific research question using a public health dataset.
- Students will communicate epidemiological findings effectively in oral and written formats.
- Students will demonstrate proficiency in at least one software package (SAS, R, etc.) to manage a public health dataset.
- Students will demonstrate proficiency in quantitative analysis of health disparities and health inequities.

## Degree Requirements (43 Hours)

### School of Public Health Core (3 Hours)

Course	Title	Credits
PUBH 700	Perspectives in Public Health	3
<b>Total Credit Hours</b>		<b>3</b>

### Department Core (22 Hours)

Course	Title	Credits
BIOS 701	Concepts and Methods of Biostatistics	3
EPID 701	Concepts and Methods of Epidemiology	3
EPID 721	Clinical and Population Research Protocol Development and Implementation	2
EPID 722	Scientific Writing and Appraisal of Epidemiologic Studies	2
EPID 741	Intermediate Epidemiologic Methods	3
BIOS 757	Intermediate Biostatistics	3
BIOS 709	Basic Software for Public Health	1
BIOS 714	Introduction to MS Access for Public Health	1
BIOS 719	Advanced SAS Methods for Public Health	1
BIOS 754	Discrete Data Analysis	3
<b>Total Credit Hours</b>		<b>22</b>

### Major Courses (9 Hours)

Course	Title	Credits
EPID 788	Practical Methods for Secondary Data Analysis	3
Select two other epidemiology classes from the course listing		6
<b>Total Credit Hours</b>		<b>9</b>

### Elective (3 Hours)

- Electives may be chosen from courses in the University that support the overall educational goals of the student. Typically, the elective course is chosen from the list of EPID courses, in addition to the two major courses. The Faculty Advisor must approve all elective courses.

## Thesis (6 Hours)

Course	Title	Credits
EPID 799	Thesis Preparation	6
<b>Total Credit Hours</b>		<b>6</b>

## Epidemiology, Ph.D.

The Doctor of Philosophy prepares students, through quality instruction, practical experiences and other research opportunities, for involvement in teaching and independent and collaborative epidemiological research; and trains researchers to teach and to pursue original research for investigating health-related conditions. Students will develop comprehensive knowledge in epidemiologic methods, applied biostatistics and at least one content area of epidemiology. Students will develop advanced skills in designing and conducting ethical population-based research, analyzing complex data, interpreting results of in-depth data analyses, effectively communicating results to scientific and lay audiences both orally and in writing, teaching, and grant writing.

Upon graduation, our students will have a solid foundation in epidemiologic research to improve health and be competitive for positions as postdoctoral fellows, principal investigators, instructors, and leading epidemiologists to be employed by organizations in academia, government (state or federal), private industry, or clinical settings.

The Ph.D. requires 54 credit hours beyond a master's degree, which includes 12 credit hours of dissertation preparation. A limited amount of graduate course work from a graduate program may be applied toward the Ph.D. with advisory committee and Graduate Director approval. A minimum of 30 hours must be unique to the University of South Carolina on the doctoral program of study, excluding 12 credits of dissertation preparation.

The following learning outcomes are premised upon having successfully met all the objectives previously that are common to the M.P.H. and M.S.\* degrees.

## Learning Outcomes

- Students will demonstrate in-depth expertise in at least one substantive content area of epidemiology.
- Students will formulate hypotheses of scientific significance, and design a study employing appropriate epidemiologic methods to address the hypotheses.
- Students will apply knowledge of relevant mechanistic pathways (e.g., physiological, genetic, behavioral, and social) to advance understanding of disease etiology.
- Students will critically appraise epidemiologic studies for internal and external validity and develop skills to synthesize published epidemiologic evidence.
- Students will apply a broad range of advanced statistical approaches to analyze epidemiological data.
- Students will apply the methods and principles of sound epidemiologic and ethical practice (including those related to data collection, processing, management, documentation, and security) in the design and conduct of epidemiologic research.
- Students will demonstrate the ability to prepare a competitive research grant application in the format specified by relevant government agencies and/or private foundations.

- Students will effectively communicate epidemiologic concepts methods results and implications to diverse audiences in oral and written formats.
- Students will effectively teach epidemiologic concepts and methods.

\*Note: The Master of Science in Public Health degree in epidemiology will undergo a name change. Effective Fall 2021, the new name for the degree program is Master of Science (M.S.). The curriculum remains the same.

## Degree Requirements (54 Hours)

### Prerequisites

Coursework for the Ph.D. in epidemiology assumes that the applicant has taken sufficient courses in the biological or social sciences and has solid preparation at the master's level in epidemiology. For students holding a master's degree in a discipline other than epidemiology, preparatory course requirements are set by the Academic Advisor, in consultation with the Graduate Director and Admissions Committee. At a minimum, applicants must master the content and skills taught in the following master's level courses: EPID 701, BIOS 701, EPID 741, BIOS 757, and BIOS 709. Other courses are required on a case-by-case basis.

### Coursework

Course	Title	Credits
PUBH 700	Perspectives in Public Health	3
replaced with elective if student has M.P.H.		
EPID 800	Advanced Methodological Theory in Epidemiology	3
EPID 801	Advanced Analytic Methods in Epidemiology	3
EPID 802	Grant Writing for Epidemiologists	3
EPID 845	Doctoral Seminar (1 credit taken 3 times)	3
EPID 890	Independent Study (Teaching Practicum)	3
EPID 890	Independent Study (Consulting Practicum)	3
Two Epidemiology courses		6
Three Biostatistics courses		9
Two electives		6
EPID 899	Dissertation Preparation	12
<b>Total Credit Hours</b>		<b>54</b>

## Exercise Science

Department Website (<http://www.sph.sc.edu/exsc/>)

Shawn M. Arent, Ph.D., *Chair*

The mission of the Department of Exercise Science is to expand and disseminate the body of knowledge concerning the relationship between physical activity and human health. A key objective of the Department of Exercise Science is to expand the body of knowledge in the exercise sciences by conducting and publishing research that contributes to an understanding of the following:

- effects of acute and chronic exercise on human function and health
- physiologic and biochemical mechanisms that underlie responses and adaptations to exercise
- physiologic responses to acute and chronic exercise in special populations including children, females, the elderly, chronic disease patients, and those with neurological and/or orthopedic impairments

- neuromuscular and neurophysiological processes associated with motor skill development
- developmental and aging aspects of motor function
- appropriate methods of designing and delivering physical activity programs for purposes of health enhancement, neuromuscular rehabilitation, and perceptual-motor functioning
- behavioral and psychosocial aspects of physical activity.

The Department of Exercise Science offers the following degrees: Master of Science in Athletic Training, Master of Science in Advanced Athletic Training, Master of Public Health, Master of Science, Doctor of Philosophy, and Doctor of Physical Therapy.

## Program Overviews

### Master's Degrees

#### Master of Science in Athletic Training/Advanced Athletic Training

The UofSC AT Program is housed in the Department of Exercise Science in the Arnold School of Public Health. The UofSC AT Program has maintained its accreditation through the Commission on Accreditation of Athletic Training Education (CAATE) since 1996.

The UofSC AT Program provides students with the theoretical knowledge and understanding of the athletic training profession in the context of the larger health care system as well as its current procedures and techniques in sport injury management. Students gain this knowledge through required coursework and clinical experiences as they prepare to make successful contributions to the athletic training profession. The program combines formal classroom instruction and clinical experiences in a process that culminates in the student graduating with eligibility to sit for the Board of Certification (BOC) examination. Students who graduate from the program and subsequently pass the BOC examination will be qualified to be employed as an athletic trainer in a variety of settings, including NFL, MLB, NBA, professional soccer, Division 1 (FBS) colleges, secondary schools, youth sports, orthopedic clinics, hospitals, wellness centers, industry, NASCAR, Cirque du Soleil, US Military, performing arts, and many other places/settings.

#### Master of Public Health in Physical Activity and Public Health ( MPH-PAPH )

The Master of Public Health in Physical Activity and Public Health is the first academic program in the nation designed to prepare professionals to increase physical activity and improve health in populations. The MPH-PAPH program provides students with the essential knowledge, skills and experiences to design, implement and evaluate physical activity interventions. With the MPH-PAPH degree, there are many career opportunities in the areas of: health and wellness, active transportation to school, corporate wellness, transportation and community design, parks and recreation, chronic disease prevention, community-based physical activity interventions, policy and environmental change, and preparation for working in local and state health departments.

#### Master of Science (M.S.)

The Master of Science [JO1] (p. ) (MS) degree in Exercise Science provides students with foundational content in exercise physiology, research methods and statistics and offers flexibility to select coursework in specific areas of interest, including: applied physiology, neuro-rehabilitation, and sports performance. With the MS in Exercise Science, there are many career opportunities in the areas of: strength and conditioning, sport science, performance nutrition, clinical exercise physiology, cardiac rehabilitation, physical rehabilitation, corporate fitness, health and wellness, research and preparation for

additional graduate training (e.g., PhD, DPT, MD, PA). There are many opportunities to participate in ongoing research through assistantships and independent study courses. Students have the option of completing a thesis (focus on research training) or a project (focus on clinical or applied skills training).

## Doctoral Degrees

### Doctor of Philosophy (Ph.D.)

The Ph.D. program in exercise science is designed to prepare students for research careers in the exercise sciences; graduates are trained for entry into positions in universities, colleges, research institutes and research-oriented clinical settings. Areas of research emphasis correspond to those of the departmental faculty. The Ph.D. degree requires an approved program of up to 60 hours beyond the baccalaureate degree. Students with a master's or DPT degree admitted to the PhD program in Exercise Science, may complete the PhD program in Exercise Science by completing a minimum of 30 additional credit hours (including 12 credit hours of dissertation preparation). Students completing the PhD must meet minimum core requirements including at least 6 hours in Department of Exercise Science or specific area of emphasis, 6 hours in statistics and research design and 12 hours of dissertation preparation. Programs of study are developed by the student's advisory committee and must conform to requirements described in the Graduate Studies Bulletin. Additional information may be found in the Handbook for Graduate Students in Exercise Science.

### Doctor of Physical Therapy (D.P.T.)

The Physical Therapy Program at the University of South Carolina offers students a unique opportunity to develop clinical physical therapy skills in an intimate learning environment. The 3 year Clinical Doctoral program starts in August of each year and admits a small class size that allows students an opportunity to get individualized instruction and closely interact with instructors. Students complete a research project focused on clinical practice and learn the value of evidence-based practice. Following completion of the DPT, students are eligible to sit for the national physical therapy licensure exam.

## Program Requirements for Exercise Science Degree Programs

A listing of specific courses needed to meet these requirements is available in the department's Handbook for Graduate Students in Exercise Science. Areas of research emphasis in all degree programs correspond to those of the departmental faculty.

## Department Admission Requirements

Admission to the MS in AT program must be completed through ATCAS: <http://atcas.liasoncas.org/>

Application forms for admission to the M.S. and Ph.D. graduate programs in Exercise Science may be obtained at <http://gradschool.sc.edu/gap> (<http://gradschool.sc.edu/gap/>).

Applicants to the D.P.T. Program should submit an application through the Physical Therapy Centralized Application Service (<http://www.ptcas.org>).

Applicants to the MPH program should submit an application packet through the School of Public Health Application Service (<http://www.sophas.org>).

Graduate assistantships are not ordinarily available to students enrolled in the Doctor of Physical Therapy program. In some instances students

may be offered a graduate assistantship during their final two years of study. All graduate assistantships must be related to the student's research and approved by the program director.

## Master of Public Health (MPH) in Physical Activity and Public Health

Applicants to the MPH-PAPH must meet the general requirements of the University of South Carolina Graduate School. Applicants must also have completed an undergraduate program with appropriate preparation in the field in which graduate work is to be undertaken. A demonstration of a broad educational background reinforced with public health interests and experiences in physical activity must be included.

International applicants to the Master of Public Health in Physical Activity program are required to take the Graduate Record Examination (GRE) in order to meet admission requirements. Applicants whose native language is not English are also required to submit a satisfactory score on the TOEFL or the IELTS Intl. Academic Course Type 2 exam. The minimum acceptable score on the TOEFL is 230 (computer-based) or 570 (paper-based). The minimum acceptable overall band score on the IELTS Intl. Academic Course Type 2 exam is 6.5.

Applicants must include an official transcript from each school or college previously attended (all prior postsecondary school study must be represented). In addition, there must be at least three letters of recommendation and a detailed written statement indicating the applicant's area of interest and career goals, along with a current and complete resume.

Other requirements include:

- graduated with a rank in the upper half of the class (GPA>3.00)
- acceptable GRE score of at least 900, combined verbal and quantitative sections (the 2004-05 incoming class averaged 460 on the verbal section and 562 on the quantitative section)
- an official transcript from each school or college previously attended (all prior postsecondary school study must be represented)
- a minimum of three letters of recommendation
- a detailed written statement describing the area of interest and specific career goals.

## Master of Science (M.S.)

### Admission Requirements

- A four-year baccalaureate degree or its equivalent in exercise science, kinesiology, biology, chemistry, pre-med, nutrition, health sciences, physiology, psychology, public health, physical therapy, medical doctor, from an accredited institution
- Academic prerequisites: Human Anatomy and Physiology
- Grade point average of 3.00/4.00 or higher
- Satisfactory GRE scores
- For international applicants, a satisfactory score on the Test of English as a Foreign Language (TOEFL) - minimum score of 80 internet-based, 230 computer-based, or 570 paper-based or the International English Language Testing System (IELTS) Academic Course Type 2 exam - minimum overall band score of 6.5. This requirement may be waived for applicants that have earned a prior degree from a US institution.

### Application Requirements

- Resume or CV
- Statement of Purpose and Objectives describing your academic and research interests, relevant work experiences, academic/professional goals and objectives
- At least three letters of recommendation from academic and/or professional sources (at least one of these letters must be from an academic source)
- Official transcripts from all schools or colleges previously attended
- Non-US institution transcripts must be verified by World Education Services (WES) or equivalent evaluation service. Please submit a comprehensive course-by-course evaluation (WES ICAP)
- GRE scores
- TOEFL or IELTS scores are required for those whose native language is not English

## Doctor of Philosophy (Ph.D.)

Applicants for the Ph.D. program in exercise science must have an earned baccalaureate degree in exercise science or related discipline from an accredited institution and should participate in a personal interview with the departmental admissions committee. A comprehensive academic profile is used in arriving at admission decisions. The following materials and standards are required:

- Graduate School application with stated desired area of research emphasis with the required, nonrefundable application fee
- Graduate Record Examination scores of 50th percentile or better on all three sections are preferred
- transcripts of all previous college/university work
- letters of recommendation from at least three professors with knowledge of the applicant's academic performance
- a writing sample addressing future professional goals and specific research interests
- current curriculum vitae.

## Doctor of Physical Therapy (D.P.T.)

Applicants for the D.P.T. degree in the Department of Exercise Science must have an earned baccalaureate degree from an accredited institution. Applicants are reviewed for admission by a faculty committee and are formally approved by the Graduate School. The following materials and standards are required:

- Completed PTCAS Application
- Graduate Record Examination scores of 300 or better required on combined verbal and quantitative sections, and 3.5 on the writing section.
- Two letters of recommendation from individuals familiar with the applicant's academic and/or clinical skills
- Official transcripts from all previous college/university work (upon acceptance to the DPT Program)
- \$80 supplemental application fee paid through the USC Marketplace

The applicant's transcripts, regardless of major, must demonstrate successful completion or enrollment in the following prerequisites:

Course	Title	Credits
General Physics	<sup>1</sup>	8
Statistics		3
Chemistry	<sup>1</sup>	8

Anatomy and Physiology	<sup>1</sup>	8
Biology	<sup>1</sup>	8
<b>Total Credit Hours</b>		<b>35</b>

<sup>1</sup> Courses must include a laboratory.

## Programs

- Advanced Athletic Training, M.S. (p. 437)
- Athletic Training, M.S. (p. 438)
- Exercise Science, M.S. (p. 439)
- Exercise Science, Ph.D. (p. 439)
- Physical Activity and Public Health, M.P.H. (p. 439)
- Physical Therapy, D.P.T. (p. 440)

## Courses

### ATEP 700 - Introduction to Therapeutic Interventions in Athletic Training (3 Credits)

This course is designed to address the basic knowledge and techniques needed to plan, operate, document, and evaluate therapeutic interventions used in treatment of athletic injuries/illnesses. Includes basic knowledge and techniques of therapeutic interventions; modalities and rehabilitation used by athletic trainers.

### ATEP 701 - Principles of Evidenced-Based Medicine (3 Credits)

Development of essential skills for integrating evidence into healthcare practice. Students will learn how to explore critical questions by accessing, interpreting, evaluating, and integrating relevant research literature in healthcare.

### ATEP 702L - Principles of Athletic Training Lab (1 Credit)

Foundational knowledge and skills for athletic trainers in injury prevention, care and recognition, emergency management and their role as a healthcare provider within the larger context of a changing healthcare system.

### ATEP 711 - Clinical Experiences in Athletic Training I (3 Credits)

A 350-hour clinical education experience to develop clinical skills of the practicing Athletic Training professional in a mentor guided model. Improvement in a selected area of clinical practice, specifically assessment, treatment and rehabilitation of lower/upper extremity injuries will be measured via formative and summative assessment that employs quantitative measures.

### ATEP 712 - Clinical Experiences in Athletic Training II (3 Credits)

A 150-hour clinical education experience to develop the clinical skills of the practicing Athletic Training professional in a mentor guided model. Improvement in a selected area of clinical practice, specifically assessment, treatment and rehabilitation of non-orthopedic conditions will be measured via formative and summative assessment that employs quantitative measures.

**Prerequisites:** ATEP 711.

### ATEP 713 - Clinical Experiences in Athletic Training III (3 Credits)

A 150-hour clinical education experience to develop the clinical skills of practicing Athletic Training professionals in a mentor guided model. Improvement in selected areas of clinical practice, specifically prevention and management of medical emergencies in athletic settings will be measured via formative and summative assessment that employs quantitative measures.

**Prerequisites:** ATEP 712.

**ATEP 714 - Clinical Experiences in Athletic Training IV (3 Credits)**

A 350-hour clinical education experience to develop the clinical skills of the practicing Athletic Training professional in a mentor guided model. Improvement in a selected area of clinical practice, specifically behavioral health and wellness of patients will be measured via formative and summative assessment that employs quantitative measures.

**Prerequisites:** ATEP 713.

**ATEP 715 - Clinical Experiences in Athletic Training V (6 Credits)**

A 450-hour clinical education immersive experience to develop clinical skills of the practicing Athletic Training professional in a setting preferred by the student. Improvement in a selected area of clinical practice will be measured via formative and summative assessment that employs quantitative measures.

**Prerequisites:** ATEP 714.

**ATEP 730 - Behavioral Health and Wellness (3 Credits)**

Integration of physiological, psychological, and social constructs in relationship to physical performance and clinical decision making to enhance patient care. Specific focus will be on understanding individual differences in behavior in the areas of physical fitness, nutrition, and mental health.

**ATEP 732 - Emergency Management Practices in Athletic Training (3 Credits)**

Examination of common injuries and illnesses that can cause medical emergencies in sport and physical activity. The majority of the class will be analyzing research related to these conditions to determine prevention and treatment strategies. Education, gender issues, politics, and media will also be a platform for class discussions.

**ATEP 733 - Evidence Based Practice in Medical Emergencies (3 Credits)**

Examination of common injuries and illnesses that lead to medical emergencies (e.g., sudden death) in sport and physical activity. Critical analysis of research to determine prevention and treatment strategies.

**ATEP 734 - Evidence-Based Approach to Evaluation, Treatment, and Rehabilitation (3 Credits)**

Advanced study of principles of evidence-based medicine and the interpretation of clinical research that assesses evaluation, treatment, and rehabilitation of injuries.

**ATEP 735 - Contemporary Issues in Athletic Training (3 Credits)**

Examination of issues shaping the athletic training profession with an emphasis on practical application and professional development.

**ATEP 736 - Advanced Treatment and Rehabilitation of Athletic Injuries (3 Credits)**

Advanced study of the treatment of athletic injuries focusing on the concepts and principles of a comprehensive rehabilitation program, including therapeutic exercise and therapeutic modalities.

**ATEP 737 - Current Research in Athletic Training Education (3 Credits)**

Examination of current literature in athletic training education as it pertains to the clinical and didactic experiences of athletic training students, clinical instructors, and practicing professionals.

**ATEP 738 - Advanced Athletic Training Practicum I (1-3 Credits)**

Provides advanced practical experience and the integration of evidence-based practice in the sports medicine settings. Course content will focus on graduate research project and topics related to athletic training education.

**ATEP 739 - Advanced Clinical Practicum in Athletic Training II (1-3 Credits)**

Provides advanced practical experience and the integration of evidenced-based practice on the sports medicine settings. Course content will focus on graduate research project and topics related to athletic training administration and management.

**ATEP 740 - Evidence Based Practice in Weight Management Assessment (3 Credits)**

Critical analysis of the current literature on weight control and health, metabolism, energy balance, and roll of diet and exercise in prevention and/or treatment in weight management in the physically active population.

**ATEP 741 - Advanced Clinical Skills in Athletic Training (3 Credits)**

This course is designed to assess the advanced clinical skills of graduate athletic training students in their ability to evaluate, manage and prevent athletic injuries. The content of this course will focus on advanced athletic training clinical skills and evidence-based practice.

**ATEP 748 - Evaluation and Therapeutic Intervention of Lower Extremity Injuries (4 Credits)**

Study of the lower extremities as they relate to the prevention; recognition, evaluation and assessment; immediate care; and treatment, rehabilitation and reconditioning of injuries and illnesses to athletes and others engaged in physical activity.

**ATEP 748L - Evaluation & Therapeutic Intervention of Lower Extremity Injuries Lab (1 Credit)**

Integration of knowledge and skills for orthopedic/physical assessment of common injuries to the lower body.

**Corequisite:** ATEP 748.

**ATEP 749 - Evaluation and Therapeutic Intervention of Head, Neck and Spine Injuries (4 Credits)**

Study of the Head, Neck and Spine as they relate to the prevention; recognition, evaluation and assessment; immediate care; and treatment, rehabilitation and reconditioning of injuries and illnesses to athletes and others engaged in physical activity.

**ATEP 749L - Evaluation & Therapeutic Intervention of Head, Neck, & Spine Injuries Lab (1 Credit)**

Integration of knowledge and skills for orthopedic/physical assessment of common injuries to the head, neck and spine.

**Corequisite:** ATEP 749.

**ATEP 750 - Evaluation and Therapeutic Intervention of Upper Extremity Injuries (4 Credits)**

Study of the upper extremities as they relate to the prevention; recognition, evaluation and assessment; immediate care; and treatment, rehabilitation and reconditioning of injuries and illnesses to athletes and others engaged in physical activity.

**ATEP 750L - Evaluation & Therapeutic Intervention of Upper Extremity Injuries Lab (1 Credit)**

Integration of knowledge and skills for orthopedic/physical assessment of common injuries to the upper body.

**Corequisite:** ATEP 750.

**ATEP 770 - Research Methods & Prospectus Writing in Athletic Training (3 Credits)**

The study of applicable methods and tools of research in athletic training. Introduction of methods of research in athletic training, encompassing aspects of study planning, research design, participant sampling, measurement, data analysis, ethics, and reporting in sports medicine.



**ATEP 796 - Athletic Training Administration (3 Credits)**

Examination of fundamental principles of administration and assessment of the delivery of athletic training services in the context of the larger health care system. Specific focus business management principles associated with athletic training clinical practice and as well as leadership and professional development to achieve the best patient outcomes.

**ATEP 797 - Clinical Pathology and Pharmacology in Athletic Training (2 Credits)**

Examination of injury, illness and/or disease of various body systems; specific understanding of medical diagnostics, interventions (including pharmacology) and participation considerations for the athletic population are addressed.

**ATEP 797L - Clinical Pathology & Pharmacology in Athletic Training Lab (1 Credit)**

Integration of knowledge and skills for athletic trainers in the physical assessment of common injury, illness and/or disease of various body systems.

**Corequisite:** ATEP 797.

**ATEP 798 - Project in Athletic Education (3 Credits)**

Independently executed project designed to expand the student's knowledge of athletic training.

**ATEP 799 - Thesis Preparation (1-9 Credits)****EXSC 507 - Exercise, Sport, and Nutrition (3 Credits)**

The relationship between exercise, sport performance, and nutrient metabolism.

**Prerequisites:** EXSC 223, EXSC 224, EXSC 330, EXSC 330L.

**EXSC 531 - Clinical Exercise Physiology (3 Credits)**

Scientific bases of clinical exercise programming. The fitness instructor's role in encouraging changes in exercise behavior.

**Prerequisites:** EXSC 223, EXSC 224, EXSC 330, EXSC 330L.

**Corequisite:** EXSC 531L.

**EXSC 531L - Clinical Exercise Physiology Lab (0 Credits)**

**Prerequisite:** EXSC 223, EXSC 224, EXSC 330, EXSC 330L.

**EXSC 541 - Physiological Basis for Strength and Conditioning (3 Credits)**

Investigation on the physiological basis for strength and conditioning. Principles of strength and conditioning through lecture based learning, demonstrations, and through laboratory activities.

**Prerequisites:** C or better in EXSC 330.

**EXSC 555 - Current Topics in Exercise Science (1-3 Credits)**

Content varies by title. Course may be repeated for a total of 6 credit hours.

**EXSC 562 - Impairments of the Human Motor System (3 Credits)**

Role of motor development in the growth and development of individuals exhibiting impaired motor control.

**Prerequisites:** biology, anatomy, physiology, or the equivalent.

**EXSC 563 - Physical Activity and the Physical Dimensions of Aging (3 Credits)**

The effects of age and physical activity on physical and motor functions of elderly individuals.

**Prerequisites:** EXSC 223, EXSC 224, EXSC 351, EXSC 330, EXSC 330L.

**EXSC 585 - Women's Health and Physical Activity (3 Credits)**

Sex differences in diseases, physiological function of sex hormones, hormonal changes in a woman's life, specific women's health issues, and role of physical activity and exercise in prevention and treatment of conditions and diseases specific to women or related to sex hormones. Restricted to 30 students, Special Permission by Instructor.

**EXSC 608 - Apps, Wearables and Technology for Lifestyle Behavior Change and Weight Loss (3 Credits)**

The course will increase students' understanding of the theoretical foundations, scientific evidence and practical application of technology-assisted lifestyle interventions, with an emphasis on behavioral weight control for adults.

**Prerequisites:** C or better in EXSC 410.

**EXSC 620 - Nutrition and Immunology (3 Credits)**

Examination of the interrelationships that link human nutrition to the immune system in health and disease. Topics will include basic immunology, overview of nutritional sources, deficiencies and excesses, and the impact on public health issues such as exercise, disease and aging.

**Prerequisites:** EXSC 330.

**EXSC 626 - Cardiorespiratory Exercise Physiology (3 Credits)**

Examination of the anatomy and function of the cardiovascular and respiratory systems of the exercising human organism, including acute adjustments and chronic adaptations to the systems.

**Prerequisites:** EXSC 330.

**EXSC 666 - Cardiorespiratory Exercise Physiology (3 Credits)**

Examination of the anatomy and function of the cardiovascular and respiratory systems of the exercising human organism, including acute adjustments and chronic adaptations to the systems.

**Prerequisites:** EXSC 330.

**EXSC 669 - Skeletal Muscle Physiology: Form and Function (3 Credits)**

Skeletal muscle physiology and exercise through select laboratory experiences and discussion of related research literature.

**Prerequisites:** C or better in both EXSC 330 and EXSC 330L.

**EXSC 695 - Writing and Presenting in Research (3 Credits)**

The research process in Exercise Science through participation, presentation, and discussion of current research.

**Prerequisites:** EXSC 224.

**EXSC 700 - Physical Activity and Health: Epidemiology, Research and Practice (3 Credits)**

An introduction to exercise science with emphasis on the relationships between exercise and health for promotion of physical activity in clinical and public health settings.

**EXSC 706 - Assessment of Motor Behavior (3 Credits)**

Assessment of infant, child, adolescent, and adult motor behavior.

**EXSC 710 - Behavioral Aspects of Physical Activity (3 Credits)**

Psychosocial and behavioral factors in physical activity. Topics include mental health effects of exercise, behavior change theories applied to mental health effects of exercise, behavior change theories applied to physical activity, and physical activity determinants and interventions.

**Cross-listed course:** HPEB 713

**EXSC 723 - Genetics in Health Sciences (3 Credits)**

The part lecture and part discussion course will explore genetic research in the health sciences, with emphasis on human genetic association studies, clinical utility for personalized medicine, direct-to-consumer genetic testing, and ethical issues. Students will receive hands-on experience searching, interpreting, and summarizing genetic studies on a topic of their choice.

**EXSC 727 - Controlled Trials in Exercise Science (3 Credits)**

This course covers planning, organizing and implementing randomized controlled trials of physical activity or exercise interventions. It is primarily aimed to meet the needs of graduate students in exercise science and others in related fields.

**EXSC 731 - Mechanisms of Motor Skill Performance (3 Credits)**

A study of theories and mechanisms involved in human movement. Focus is on analysis of principles and systems of gross motor control and learning.

**EXSC 732 - Measurement of Body Composition and Associated Health Behaviors (3 Credits)**

Overview of measurement theory and measures to assess body composition and associated health behaviors (i.e., physical activity, sedentary behavior, sleep, diet).

**Prerequisites:** BIOS 700, BIOS 701, or PUBH 725; for MPH-PAPH students, EXSC 700.

**EXSC 742 - Clinical Exercise Testing (1 Credit)**

Study of the procedures involved in screening and testing persons with varying levels of functional work capacity.

**EXSC 743 - Laboratory Measurements for Exercise Testing (1 Credit)**

Biological and physiological assessment of exercise responses and adaptation.

**Prerequisites:** EXSC 742.

**EXSC 744 - Administration of Exercise Programs (1 Credit)**

Study of the procedures necessary for proper administration of exercise testing, fitness, and rehabilitation programs.

**Prerequisites:** EXSC 531.

**EXSC 754 - Community-Based Physical Activity Interventions (3 Credits)**

Role of the physical activity specialist within the community health department. Development, initiation, and evaluation of campaigns, resources, community capacity building, and coalitions to promote physical activity.

**Prerequisites:** EXSC 700 or HPEB 700.

**EXSC 755 - Special Topics in Exercise Science (3 Credits)**

A study of selected issues in exercise science. Content varies by title.

**EXSC 771 - Data Acquisition in Exercise Science (3 Credits)**

Fundamental concepts of computerized data acquisition in the exercise science laboratory.

**EXSC 775 - Neural Basis of Skilled Motor Behavior (3 Credits)**

Current and historical perspectives on the neural basis of skilled motor behavior.

**Prerequisites:** EXSC 731.

**EXSC 777 - Endocrinology of Exercise and Health (3 Credits)**

The course examines the endocrine system, its interaction with the nervous system, and how they affect human biology before, during, and after exercise. Special attention will be paid to this system's influence on the relationship between physical activity and health.

**Prerequisites:** At least one undergraduate or graduate course in statistics and molecular or cellular biology.

**EXSC 778 - Exercise and Childhood Obesity (3 Credits)**

Causes and treatment of childhood obesity with special reference to the role of exercise in prevention and early intervention.

**EXSC 779 - Exercise Physiology of Children and Youth (3 Credits)**

Principles of exercise physiology applied specifically to children and youth. Particular emphasis on physiological foundations of physical fitness and methods for teaching physical fitness concepts.

**EXSC 780 - Physiology of Exercise (3 Credits)**

Physiological responses to exercise: skeletal muscle structure and function, cardiorespiratory function, physiological determinants of exercise performance, and training adaptations. Didactic and laboratory included.

**EXSC 781 - Physiology, Exercise, and Disease (3 Credits)**

The input and response to exercise in diseased populations. Diseases to be examined include cardiovascular disease, age-related diseases, pulmonary, renal, and other conditions.

**Prerequisites:** EXSC 780.

**EXSC 782 - Mechanical Analysis of Motor Skills (4 Credits)**

Biomechanical principles underlying motor control and selected techniques used to quantify human movement.

**EXSC 783 - Research Seminar in Exercise Physiology (1-3 Credits)**

Presentation and discussion of current research topics in exercise physiology.

**EXSC 784 - Cardiovascular/Pulmonary Testing and Programming (3 Credits)**

Techniques used in exercise testing (including principles of electrocardiology) and in design and delivery of exercise programs for enhancing the health of normal and cardiopulmonary-diseased populations.

**Prerequisites:** EXSC 781.

**EXSC 785 - Advanced Exercise Physiology Laboratory (3 Credits)**

Laboratory procedures for measurement of physiological, biochemical, and molecular responses to exercise.

**Prerequisites:** EXSC 780.

**EXSC 786 - Experimental Design for Translational Laboratory Science (3 Credits)**

This course establishes the framework for experimental projects in molecular biology and physiology that impact human health: how to set up a molecular system, design experiments within that system, determine and use the correct set of controls, and ultimately how to interpret molecular data in light of human/public health.

**Prerequisites:** At least one undergraduate or graduate course in statistics and molecular or cellular biology.

**EXSC 787 - Research Methods and Design for Exercise Science (3 Credits)**

The major goal of this course is to provide an in-depth examination of: research concepts, terminology, experimental, non-experimental, and epidemiological designs, internal and external validity, methods for establishing causality investigating associations, and application of designs to test hypotheses in research of exercise science-related outcomes.

**EXSC 790 - Independent Study (1-3 Credits)**

Topics to be assigned and approved by advisor, graduate director, and department head.

**EXSC 795 - Internship in Exercise Science (3 Credits)**

Clinical practice in an applied area of exercise science. Requirements include at least 20 hours fieldwork per week with intensive supervision.

**EXSC 796 - MPH Capstone Course (2 Credits)**

This course is designed to provide students with a culminating seminar focused on the synthesis of foundational and MPH-PAPH competencies in preparing a high quality grant proposal to address a public health problem.

**Prerequisites:** PUBH 725, PUBH 726, PUBH 730, PUBH 735, B or better in EXSC 700, EXSC 710, EXSC 780.

**EXSC 797 - Public Health Practice (1-5 Credits)**

The focus of this course is the performance of a limited work or service project in an approved public need setting and the demonstration of at least 5 competencies related to previously identified aspects of the student's chosen role.

**Prerequisites:** PUBH 725, PUBH 726, PUBH 730, PUBH 735, B or better in EXSC 700, EXSC 710, EXSC 780.

**EXSC 798 - Project in Exercise Science (3 Credits)**

Independently executed project designed to expand the student's knowledge of exercise science.

**EXSC 799 - Thesis Preparation (1-9 Credits)****EXSC 801 - Ethical Conduct in Public Health Research (1 Credit)**

The course will provide an overview of ethical issues scientists encounter conducting and disseminating public health research. Topics include the history of ethics in public health, working with human participants, conflicts of interests, spin, and creating safe and healthy workplaces.

**EXSC 802 - Predoctoral Fellowship Writing Course with Special Emphasis on NIH F31 (1 Credit)**

The course is designed to enable predoctoral students to gain grant writing experience, develop into productive, independent research scientists, and to obtain mentored research training while conducting dissertation research.

**EXSC 808 - Neuro Repair - Rehabilitation (3 Credits)**

Examination of neural repair and rehabilitation from a clinical perspective.

**EXSC 831 - Mechanisms of Motor Skill Performance II (3 Credits)**

Advanced study of the theories and mechanisms of human movement and motor performance. Focus is on analysis of principles and systems regulating gross motor control and learning.

**EXSC 832 - Research Practicum in Motor Learning/Motor Performance (3 Credits)**

Scientific investigation of specific research problems in motor learning/motor performance.

**EXSC 862 - Analysis of Motor Impairments (3 Credits)**

The study of neuromuscular bases of movement and associated impairments of motor function. Current assessment and programming techniques designed to assist in remediating motor impairment will be emphasized.

**EXSC 863 - Physical Activity and the Aging Process (3 Credits)**

The study of the aging process and its effects upon the physical activity patterns of the adult. Emphasis is on the mechanisms of aging as they directly influence movement.

**EXSC 871 - Data Acquisition in Exercise Science II (3 Credits)**

Advanced techniques of interfacing data acquisition equipment to the laboratory computer.

**EXSC 880 - Myology and Exercise (3 Credits)**

Study of muscle contraction mechanics, energetics, and metabolism and the relationship of these processes to physical training, athletics, and rehabilitation.

**EXSC 881 - Advanced Cardiorespiratory Exercise Physiology (3 Credits)**

Study of mechanisms for cardiovascular and respiratory responses to acute exercise and adaptations to these systems with chronic physical activity.

**EXSC 882 - Physical Activity and Health: Epidemiology and Research Methods (3 Credits)**

An examination of physical activity/exercise habit patterns as they relate to health status. Emphasis on the chronic effects of exercise.

**EXSC 883 - Chronic Disease Rehabilitation Through Exercise (3 Credits)**

The study of the treatment of chronic diseases with special reference to exercise as a mode of therapy.

**Prerequisites:** EXSC 531 and EXSC 780 or the equivalent.

**EXSC 899 - Dissertation Preparation (1-12 Credits)****PHYT 701 - Human Musculoskeletal and Gross Anatomy (5 Credits)**

Intensive study and analysis of the morphologic, functional and imaging anatomy of the human body. Emphasis on the relationship of form and function as a basis for understanding of human movement.

**PHYT 702 - Musculoskeletal and Gross Anatomy Dissection (3 Credits)**

In depth, hands on study and analysis of the major gross anatomical structures, their relationships to each other and the clinical importance through cadaveric dissection.

**PHYT 720 - Fundamentals of Physical Therapy (4 Credits)**

An overview of the profession and basic skills needed by the physical therapist related to patient evaluation and management.

**PHYT 721 - Health Promotion & Wellness in Physical Therapy (2 Credits)**

Presents the role of the physical therapist in health promotion and wellness for patients/clients and the community.

**PHYT 731 - Mechanisms of Motor Skill Performance (3 Credits)**

A study of theories and mechanisms involved in human movement. Focus is on analysis of principles and systems of gross motor control and learning.

**PHYT 740 - Professional Issues in Physical Therapy (2 Credits)**

PHYT 740 is designed to allow you to enhance patient interaction through the development of professional communication skills, to explore professional ethics and the APTA Core Values, and to foster a professional identity.

**PHYT 741 - Clinical Documentation in Physical Therapy (1 Credit)**

Enhance patient interaction through the development of professional communication skills, to develop appropriate documentation skills, and to foster a professional identity.

**PHYT 750 - Orthopedic Physical Therapy I (4 Credits)**

Principles of physical therapy evaluation and treatment of people with orthopedic disorders involving the cervical spine and/or upper extremity.

**PHYT 751 - Orthopedic Physical Therapy II (3 Credits)**

Principles of physical therapy evaluation and treatment of people with orthopedic disorders involving the lumbar spine and/or lower extremity.

**PHYT 752 - Orthopedic Integration in Physical Therapy (4 Credits)**

An advanced course to enhance physical therapy students' knowledge of orthopedic examination tests and manual therapy interventions. Emphasis will be placed on diagnostic accuracy of special tests (sensitivity, specificity, likelihood ratios, reliability and validity), interpretation of the results, proper execution, and integration of manual techniques into clinical practice.

**PHYT 753 - Research Proposal Development (1 Credit)**

Fundamentals of developing a research proposal.

**PHYT 754 - Manual Therapy I (3 Credits)**

Joint and soft tissue mobilization and manipulation techniques.

**PHYT 755 - Manual Therapy II (3 Credits)**

Techniques will include spinal mobilization, mobilization with movement, manipulation, muscle energy, taping, soft tissue mobilization and integration of techniques into clinical practice.

**PHYT 756 - Integumentary Physical Therapy (2 Credits)**

Physical therapy management of patients with integumentary disorders.

**PHYT 757 - Pharmacology for the Physical Therapist (2 Credits)**

Management of the physical therapy patient on selected medications.

**PHYT 758 - Patient Education in Physical Therapy (1 Credit)**

Role of the physical therapist in professional and patient education.

**PHYT 759 - Therapeutic Exercise (2 Credits)**

Therapeutic exercise for the orthopedic patient: selection of techniques, rate of progression and modification.

**PHYT 760 - Orthotics and Prosthetics (2 Credits)**

Management of patients with amputations, prosthetics, and orthotics.

**PHYT 761 - Pain Mechanisms and Treatment (2 Credits)**

This course will address the theoretical models for understanding the basis for pain. Pain assessment and physical therapy pain management will be addressed. Emphasis will be placed on the development of clinical decision-making and problem solving.

**PHYT 763 - Biophysical Agents in Physical Therapy (1 Credit)**

This course studies theoretical and practical applications for safe, effective use of biophysical agents commonly used in physical therapy settings using evidence based practice.

**PHYT 764 - Cultural Competence in Health Care (3 Credits)**

Cultural competencies necessary for the delivery of health care to patients of diverse ethno-cultural heritages.

**PHYT 765 - Geriatric Physical Therapy (2 Credits)**

Fundamental principles for assessment, treatment and overall foundations of geriatric physical therapy based upon the best available evidence.

**PHYT 766 - Essentials of Cardiopulmonary Physical Therapy (3 Credits)**

Physical therapy management of patients/clients with acute and chronic cardiac and/or pulmonary dysfunction.

**PHYT 770 - Acute Care Physical Therapy (3 Credits)**

Cognitive and motor skills required in the management of the acute care physical therapy patient.

**PHYT 777 - Special Topics in Physical Therapy (1-3 Credits)**

A study of selected issues in the field of physical therapy. Course content varies by title. May be repeated for credit as topics vary for a maximum of 6 credit hours total.

**PHYT 782 - Functional Anatomy (4 Credits)**

Biomechanical principles underlying motor control and selected techniques used to quantify human movement.

**PHYT 785 - Seminar in Physical Therapy (1 Credit)**

Critical review of professional literature pertaining to clinical practice in physical therapy. Repeatable for credit.

**PHYT 786 - Research Seminar in Physical Therapy (1 Credit)**

Presentation and discussion of current research topics in physical therapy.

**PHYT 787 - Seminar and Research in Physical Therapy (1 Credit)**

Presentation of physical therapy research, article reviews, and clinical in-services. This course deals with the scientific research process with direct application to the discipline of Physical Therapy.

**PHYT 788 - Evidence-Based Practice in Physical Therapy (2 Credits)**

Research design and analysis techniques necessary for applying evidence-based practice to the clinical physical therapy setting.

**PHYT 790 - Independent Study (1-3 Credits)**

Topics to be approved by advisor and graduate director. Pass/fail grading.

**PHYT 806 - Differential Diagnosis and Clinical Reasoning for Physical Therapists (2 Credits)**

Students will gain knowledge and expertise to competently screen for systemic diseases, interpret clinical findings and differentially diagnose movement related impairments from medical conditions that can mimic symptoms of neuromusculoskeletal problems. Emphasis will be placed on Skills necessary to identify patient/client problems that require referral to another health professional.

**PHYT 807 - Neuroplasticity and Genetics in Physical Therapy (1 Credit)**

A study of neuroplasticity and genetics in relation to motor rehabilitation. Focus is on the analysis and application of key constructs in the design and implementation of rehabilitation interventions in individuals with neurologic diagnoses.

**PHYT 808 - Neuro Repair - Rehabilitation (3 Credits)**

Examination of neural repair and rehabilitation from a clinical perspective.

**PHYT 809 - Neuromuscular Assessment and Treatment I (3 Credits)**

Neurological conditions and interventions commonly used in physical therapy practice.

**PHYT 810 - Neuromuscular Assessment and Treatment II (4 Credits)**

Neurological conditions and interventions commonly used in physical therapy practice.

**PHYT 811 - Pediatric Physical Therapy (3 Credits)**

Assessment and evaluation of selected pediatric conditions.

**PHYT 815 - Management of Physical Therapy Practice (2 Credits)**

Theory and application of management supervision and leadership skills necessary for the practice of physical therapy.

**PHYT 850 - Clinical Experience in Physical Therapy I (6 Credits)**

A 320 hour clinical education experience to develop physical therapy management skills of orthopedic patients.

**PHYT 851 - Clinical Experience in Physical Therapy II (4 Credits)**

Supervised clinical experience in a physical therapy setting.

**PHYT 852 - Clinical Experience in Physical Therapy III (6 Credits)**

Supervised clinical experience in a physical therapy setting.

**PHYT 853 - Clinical Experience in Physical Therapy IV (6 Credits)**

Supervised clinical experience in a physical therapy setting.

**PHYT 860 - Clinical Experience in Physical Therapy IVa (1 Credit)**

An 80 hour clinical education experience to demonstrate professional behaviors while safely managing a partial caseload.

**PHYT 861 - Clinical Experience in Physical Therapy IVb (5 Credits)**

A 400 hour clinical education experience to develop physical therapy management skills in a setting preferred by the student.

**Prerequisites:** PHYT 860.

**PHYT 888 - Research Project in Physical Therapy (1-6 Credits)**

Clinically based research project in physical therapy.

**PHYT 899 - Dissertation Preparation (1-12 Credits)**

CL: 2020.

## Advanced Athletic Training, M.S.

The masters program in advanced athletic training (AT) is designed to offer advanced studies and clinical experiences in athletic training to BOC certified athletic trainers, while also providing health care to student athletes and physical active populations in the state of South Carolina.

The USC AT Program provides students with the theoretical knowledge and understanding of the allied health profession of athletic training as well as current procedures and techniques in sport injury management. Students gain this knowledge through required coursework and clinical experiences as they prepare to make successful contributions to the athletic training profession. The program combines formal classroom instruction and clinical experiences to enhance a certified athletic trainer's clinical skills.

## Learning Outcomes

- **Patient Centered Care:** Students demonstrate the ability to serve as an advocate for a patient's best interest, to educate the patient about health-related concerns and intervention options, to recognize any conflicts of interests that could adversely affect the patient's health, and to facilitate collaboration among the patient, physician, family and other members of the patient's social network or healthcare system to develop an effective treatment plan that includes agreed-upon implementation steps, short-term goals and long-term goals.
- **Interprofessional Education & Collaborative Practice:** Students demonstrate the ability to interact with other health professionals in a manner that optimizes the quality of care provided to individual patients.
- **Evidence-Based Practice:** Students demonstrate the ability to integrate the best available research evidence with clinical expertise and consideration of patient values and circumstances to optimize patient outcomes. Students will demonstrate an overall mastery of concepts related to their respective area of research; and display the ability to extend this understanding to relevancy and clinical application.
- **Quality Improvement & Overall Professionalism:** Students demonstrate the ability to identify a quality improvement objective, specify changes that are expected to produce an improvement, and quantitatively confirm that an improvement resulted from

implementation of the change (e.g., improved patient outcomes from administration of a specific intervention or utilization of a specific protocol). Students demonstrate an ability to adhere to the NATA Code of Ethics and the Board of Certification Standards of Practice and exhibit professionalism in all aspects of clinical practice and personal conduct.

## Admission

In addition to The Graduate School's application requirements, applicants must submit a sample of expository writing to include future goals and specific research interests.

## Degree Requirements (33-36 Hours)

### Athletic Training (24 Hours)

Successful completion of 24 graduate hours in athletic training selected from the following:

Course	Title	Credits
ATEP 733	Evidence Based Practice in Medical Emergencies	3
ATEP 734	Evidence-Based Approach to Evaluation, Treatment, and Rehabilitation	3
ATEP 735	Contemporary Issues in Athletic Training	3
ATEP 736	Advanced Treatment and Rehabilitation of Athletic Injuries	3
ATEP 737	Current Research in Athletic Training Education	3
ATEP 738	Advanced Athletic Training Practicum I	1-3
ATEP 739	Advanced Clinical Practicum in Athletic Training II	1-3
ATEP 740	Evidence Based Practice in Weight Management Assessment	3
ATEP 741	Advanced Clinical Skills in Athletic Training	3
PUBH 700	Perspectives in Public Health	3
<b>Total Credit Hours</b>		<b>26-30</b>

### Physical Education Pedagogy, Motor Behavior, Exercise Science, or Public Health Elective (3 Hours)

Course	Title	Credits
Select advisor-approved	Physical Education Pedagogy, Motor Behavior, Exercise Science, or Public Health Elective <sup>1</sup>	3
<b>Total Credit Hours</b>		<b>3</b>

<sup>1</sup> Thesis option is not required to take this elective.

## Project or Thesis

Satisfactory completion of either

Course	Title	Credits
ATEP 798	Project in Athletic Education	3
or ATEP 799	Thesis Preparation	
<b>Total Credit Hours</b>		<b>3</b>

## Comprehensive Assessment

Successful completion of a master research project/thesis.

## Additional Qualitative/Quantitative Research Methodology (6 Hours)

Course	Title	Credits
PEDU 770	Research Methods in Physical Education	3
Select one of the following:		3
BIOS 700	Introduction to Biostatistics	
BIOS 701	Concepts and Methods of Biostatistics	
BIOS 754	Discrete Data Analysis	
BIOS 757	Intermediate Biostatistics	
BIOS 760	Biostatistical Methods in Clinical Trials	
<b>Total Credit Hours</b>		<b>6</b>

## Athletic Training, M.S.

The Masters of Science in Athletic Training is a CAATE-accredited professional program that culminates in students eligible to sit for the BOC examination. The mission of the MS in Athletic Training program is to:

1. provide interdisciplinary approaches to medicine through designed clinical educational experiences for students in a variety of settings and interactions with different health care professionals,
2. teach students to access, interpret, and integrate relevant research into their clinical decision making through didactic and clinical education that focuses on evidence-based medicine, and
3. enhance professional development of students through community engagement and recognize the role of the athletic trainer as a healthcare provider within the larger context of a changing healthcare system.

## Learning Outcomes

- Students will demonstrate the ability to synthesize and integrate knowledge, skills, and clinical decision-making into client/patient care.
- Students will demonstrate the ability to apply contemporary principles and practices of healthcare informatics.
- Students will demonstrate diagnostic skills, create care plans, and incorporate interventions for patients with health conditions commonly seen in athletic training practice to maximize the patient's participation and health-related quality of life.
- Students will demonstrate the knowledge and skills necessary to evaluate and immediately manage acute conditions and emergency situations.
- Students will demonstrate the ability to recognize, refer, and support patients with behavioral health conditions.
- Students will demonstrate an understanding of health care administration and quality improvement.
- Students will demonstrate the ability to maintain current cultural competence.
- Students will practice in a manner that is professional and in alignment with ethical standards of the profession.
- Students will develop the skills to become a lifelong learner guided by professional competence, professional development, and advocates of the profession.
- Students will develop their ability to provide patient education to patients, support systems, and stakeholders.

## Program Admission Requirements

Program admission requirements include the successful completion of a bachelor of science degree in a related field from an accredited institution and the following coursework:

Course	Title	Credits
	Biology with lab	4
	Chemistry with lab	4
	Physics with lab	4
	Anatomy and Physiology	8
	Exercise Physiology	4
	Psychology	3
	Nutrition	3
	Statistics	3
<b>Total Credit Hours</b>		<b>33</b>

## Degree Requirements (66 Hours)

Course	Title	Credits
First year		
<b>Summer</b>		
BMSC 740	Human Anatomy for Health Sciences	6
ATEP 700	Introduction to Therapeutic Interventions in Athletic Training	3
ATEP 701	Principles of Evidenced-Based Medicine	3
ATEP 702L	Principles of Athletic Training Lab	1
<b>Credit Hours 13</b>		
<b>Fall</b>		
ATEP 748	Evaluation and Therapeutic Intervention of Lower Extremity Injuries	4
ATEP 748L	Evaluation & Therapeutic Intervention of Lower Extremity Injuries Lab	1
ATEP 730	Behavioral Health and Wellness	3
ATEP 711	Clinical Experiences in Athletic Training I	3
<b>Credit Hours 11</b>		
<b>Spring</b>		
ATEP 712	Clinical Experiences in Athletic Training II	3
ATEP 749	Evaluation and Therapeutic Intervention of Head, Neck and Spine Injuries	4
ATEP 749L	Evaluation & Therapeutic Intervention of Head, Neck, & Spine Injuries Lab	1
ATEP 797	Clinical Pathology and Pharmacology in Athletic Training	2
ATEP 797L	Clinical Pathology & Pharmacology in Athletic Training Lab	1
PUBH 678	Transforming Health Care for the Future	1
<b>Credit Hours 12</b>		
Second Year		
<b>Summer</b>		
ATEP 750	Evaluation and Therapeutic Intervention of Upper Extremity Injuries	4
ATEP 750L	Evaluation & Therapeutic Intervention of Upper Extremity Injuries Lab	1
ATEP 796	Athletic Training Administration	3
ATEP 713	Clinical Experiences in Athletic Training III	3

Credit Hours 11		
<b>Fall</b>		
ATEP 714	Clinical Experiences in Athletic Training IV	3
ATEP 732	Emergency Management Practices in Athletic Training	3
ATEP 741	Advanced Clinical Skills in Athletic Training	3
EXSC 742	Clinical Exercise Testing	1
Credit Hours 10		
<b>Spring</b>		
ATEP 715	Clinical Experiences in Athletic Training V	6
PUBH 700	Perspectives in Public Health	3
Credit Hours 9		
<b>Total Credit Hours</b>		<b>66</b>

## Exercise Science, M.S.

### Learning Outcomes

- Master of Science students will evaluate scientific literature, create a research plan and analyze and interpret research results.
- Master of Science students will explain, analyze and evaluate physiological changes that occur during exercise and how environmental conditions influence these responses.
- Master of Science students will explain, analyze, and evaluate the relationships between physical activity, behavior, and health.

## Degree Requirements (33 Hours)

### Required Courses (18-21 Hours)

For all Exercise Science M.S. Students

Course	Title	Credits
BIOS 700	Introduction to Biostatistics	3
EXSC 799	Thesis Preparation	3
	or EXSC 798	6
	Project in Exercise Science	
PUBH 700	Perspectives in Public Health	3
EXSC 780	Physiology of Exercise	3
	or EXSC 781	
	Physiology, Exercise, and Disease	
EXSC 787	Research Methods and Design for Exercise Science	3
Select one of the following:		3
EXSC 700	Physical Activity and Health: Epidemiology, Research and Practice	
EXSC 710	Behavioral Aspects of Physical Activity	
EXSC 731	Mechanisms of Motor Skill Performance	
EXSC 777	Endocrinology of Exercise and Health	

### Electives (12 or 15 Hours)

## Exercise Science, Ph.D.

### Learning Outcomes

- PhD students will demonstrate mastery of research germane to their area(s) of specialization.

- PhD students will develop skills in conducting and disseminating research.

## Degree Requirements (60 Post-Baccalaureate Hours or a minimum of 30 graduate hours)

Requirements	Credit Hours
Exercise Science	6-12+
School of Public Health Core	3-9
Research/Statistical Methods	6-12
Electives	3-12+
Dissertation	12

## Physical Activity and Public Health, M.P.H.

### Learning Outcomes

- Students will be able to explain the physiological responses to an acute bout of exercise and the physiological adaptations to chronic aerobic and resistance exercise.
- Students will be able to explain the health effects of physical activity and the scientific basis for current public health physical activity guidelines for persons in varying demographic groups.
- Students will be able to apply evidence-based strategies to develop a physical activity intervention.
- Students will be able to evaluate an evidence-based physical activity intervention.
- Students will be able to differentiate among and appropriately use measurement and surveillance techniques to assess physical activity at the population level.

## Degree Requirements (45 Hours)

### Courses

Course	Title	Credits
PUBH 725	Quantitative Methods for Public Health Practice	5
PUBH 726	Qualitative Methods for Public Health Practice	3
PUBH 730	Public Health Systems, Policy, and Leadership	3
PUBH 735	Practical Applications of Public Health Planning	4
PUBH 678	Transforming Health Care for the Future	1
EXSC 780	Physiology of Exercise	3
EXSC 700	Physical Activity and Health: Epidemiology, Research and Practice	3
EXSC 710	Behavioral Aspects of Physical Activity	3
EXSC 754	Community-Based Physical Activity Interventions	3
HPEB 710	Evaluation of Health Promotion Programs	3
EXSC 732	Measurement of Body Composition and Associated Health Behaviors	3
EXSC 796	MPH Capstone Course	2
EXSC 797	Public Health Practice	1-5
Select an elective		3

# Physical Therapy, D.P.T.

## Learning Outcomes

- Students and graduates practice in a safe manner that minimizes the risk to patient self and others.
- Students and graduates demonstrate professional behaviors in all situations and practices in a manner consistent with established legal and professional standards and ethical guidelines.
- Students and graduates are able to: 1) communicate in ways that are congruent with situational needs; 2) adapt delivery of physical therapy services with consideration for patients' differences, values, preferences, and needs; 3) participate in self assessment to improve clinical and professional performance; and 4) apply current knowledge, theory, clinical reasoning, and the patient's values and perspectives in patient management.
- Students and graduates are able to: 1) determine with each patient encounter the patient's need for further examination or consultation by a physical therapist or referral to another health care professional (screening); 2) perform a physical therapy examination using evidence-based tests and measures; 3) evaluate data from the patient examination (history, systems review, and tests-measures) to make clinical judgments; 4) determine a diagnosis and prognosis that guides future patient management; 5) establish a physical therapy plan of care that is safe, effective, patient centered, and evidence-based; 6) perform physical therapy interventions in a competent manner; and 7) educate others using relevant and effective teaching methods.
- Students and graduates will produce quality documentation in a timely manner to support the delivery of physical therapy services and collect and analyzes data from selected outcomes measures in a manner that supports accurate analysis of individual patient and group outcomes.

## Degree Requirements (121 Post-Baccalaureate Hours)

### Foundational Core (25 Hours)

Course	Title	Credits
PHYT 701	Human Musculoskeletal and Gross Anatomy	5
PHYT 702	Musculoskeletal and Gross Anatomy Dissection	3
PHYT 731	Mechanisms of Motor Skill Performance	3
PHYT 782	Functional Anatomy	4
EXSC 780	Physiology of Exercise	3
PHPH 750	Fundamental Neuroscience I	4
PUBH 700	Perspectives in Public Health	3
<b>Total Credit Hours</b>		<b>25</b>

### Clinical Core (63 Hours)

Course	Title	Credits
PUBH 678	Transforming Health Care for the Future	1
PHYT 720	Fundamentals of Physical Therapy	4
PHYT 750	Orthopedic Physical Therapy I	4
PHYT 751	Orthopedic Physical Therapy II	3
PHYT 752	Orthopedic Integration in Physical Therapy	4
PHYT 740	Professional Issues in Physical Therapy	2
PHYT 754	Manual Therapy I	3

PHYT 756	Integumentary Physical Therapy	2
PHYT 757	Pharmacology for the Physical Therapist	2
PHYT 759	Therapeutic Exercise	2
PHYT 760	Orthotics and Prosthetics	2
PHYT 761	Pain Mechanisms and Treatment	2
PHYT 763	Biophysical Agents in Physical Therapy	1
PHYT 765	Geriatric Physical Therapy	2
PHYT 766	Essentials of Cardiopulmonary Physical Therapy	3
PHYT 770	Acute Care Physical Therapy	3
PHYT 777	Special Topics in Physical Therapy	1-3
PHYT 788	Evidence-Based Practice in Physical Therapy	2
PHYT 806	Differential Diagnosis and Clinical Reasoning for Physical Therapists	2
PHYT 809	Neuromuscular Assessment and Treatment I	3
PHYT 810	Neuromuscular Assessment and Treatment II	4
PHYT 811	Pediatric Physical Therapy	3
PHYT 815	Management of Physical Therapy Practice	2
<b>Total Credit Hours</b>		<b>57-59</b>

### Clinical Experiences (20 Hours)

Course	Title	Credits
PHYT 850	Clinical Experience in Physical Therapy I	6
PHYT 851	Clinical Experience in Physical Therapy II	4
PHYT 852	Clinical Experience in Physical Therapy III	6
PHYT 860	Clinical Experience in Physical Therapy IVa	1
PHYT 861	Clinical Experience in Physical Therapy IVb	5
<b>Total Credit Hours</b>		<b>22</b>

### Research Core (13 Hours)

Course	Title	Credits
PHYT 753	Research Proposal Development	1
PHYT 787	Seminar and Research in Physical Therapy (5 hours required)	1
PHYT 888	Research Project in Physical Therapy (7 hours required)	1-6

### Sequence of Study

The DPT program is a lock-step program in which required courses must be taken in sequence, as listed below, unless prior permission to vary the order is received from the program director.

Course	Title	Credit Hours
<b>First Year</b>		
<b>Fall</b>		
PHYT 701	Human Musculoskeletal and Gross Anatomy	5
PHYT 731	Mechanisms of Motor Skill Performance	3
PHYT 740	Professional Issues in Physical Therapy	2
PHYT 753	Research Proposal Development	1
PHYT 782	Functional Anatomy	4
PHYT 787	Seminar and Research in Physical Therapy	1
<b>Credit Hours</b>		<b>16</b>



<b>Spring</b>		
PHYT 702	Musculoskeletal and Gross Anatomy Dissection	3
PHYT 720	Fundamentals of Physical Therapy	4
PHYT 750	Orthopedic Physical Therapy I	4
PHYT 761	Pain Mechanisms and Treatment	2
PHYT 754	Manual Therapy I	3
PHYT 787	Seminar and Research in Physical Therapy	1
<b>Credit Hours</b>		<b>17</b>

<b>Summer</b>		
PHYT 741	Clinical Documentation in Physical Therapy	1
PHYT 751	Orthopedic Physical Therapy II	3
PHYT 759	Therapeutic Exercise	2
PHYT 763	Biophysical Agents in Physical Therapy	1
PHYT 850	Clinical Experience in Physical Therapy I	6
<b>Credit Hours</b>		<b>13</b>

**Second Year****Fall**

EXSC 780	Physiology of Exercise	3
PHPH 750	Fundamental Neuroscience I	4
PHYT 721	Health Promotion & Wellness in Physical Therapy	2
PHYT 756	Integumentary Physical Therapy	2
PHYT 787	Seminar and Research in Physical Therapy	1
PHYT 788	Evidence-Based Practice in Physical Therapy	2
PHYT 785	Seminar in Physical Therapy	1
PHYT 815	Management of Physical Therapy Practice	2
<b>Credit Hours</b>		<b>17</b>

**Spring**

PHYT 757	Pharmacology for the Physical Therapist	2
PHYT 760	Orthotics and Prosthetics	2
PHYT 765	Geriatric Physical Therapy	2
PHYT 770	Acute Care Physical Therapy	3
PHYT 787	Seminar and Research in Physical Therapy	1
PHYT 807	Neuroplasticity and Genetics in Physical Therapy	1
PHYT 809	Neuromuscular Assessment and Treatment I	3
PUBH 678	Transforming Health Care for the Future	1
<b>Credit Hours</b>		<b>15</b>

**Summer**

PHYT 766	Essentials of Cardiopulmonary Physical Therapy	3
PHYT 806	Differential Diagnosis and Clinical Reasoning for Physical Therapists	2
PHYT 851	Clinical Experience in Physical Therapy II	4
PHYT 888	Research Project in Physical Therapy	1-6
<b>Credit Hours</b>		<b>10-15</b>

**Third Year****Fall**

PHYT 752	Orthopedic Integration in Physical Therapy	4
PHYT 787	Seminar and Research in Physical Therapy	1
PHYT 810	Neuromuscular Assessment and Treatment II	4
PHYT 811	Pediatric Physical Therapy	3

PUBH 700	Perspectives in Public Health	3
PHYT 888	Research Project in Physical Therapy	1-6
<b>Credit Hours</b>		<b>16-21</b>

**Spring**

PHYT 852	Clinical Experience in Physical Therapy III	6
PHYT 888	Research Project in Physical Therapy	1-6
<b>Credit Hours</b>		<b>7-12</b>

**Summer**

PHYT 860	Clinical Experience in Physical Therapy IVa	1
<b>Credit Hours</b>		<b>1</b>

**Total Credit Hours** **112-127**

## Health Promotion, Education, and Behavior

Department Website (<http://www.sph.sc.edu/hpeb/default.htm>)

Daniela B. Friedman, *Chair*

Programs leading to degrees in health promotion, education, and behavior focus on understanding how policy, environmental, institutional, and individual actions can improve the public's health. This work, usually done in partnership with organizations and communities, uses principles and methods from the social and behavioral sciences to promote health in diverse settings across South Carolina, the US, and the globe. Health promotion, education, and behavior is an activist field with a deep commitment to improving the health and welfare of the most disadvantaged people in our world. The field recognizes the importance of learning not just what should and can be done to improve the public's health, but also how it can be done in a way that is cost-effective, embedded in community structures and culture, and at a large enough scale to have real impact. Programs in health promotion, education, and behavior prepare practice and research professionals through courses, practical experiences, and research projects that emphasize understanding of learning, motivation, behavior change, program planning and evaluation, community development, organizational behavior, applied communications, and socio-political processes at multiple levels of societal organization. Students are prepared to engage in professional activities that will:

- influence individuals to adopt or maintain healthful practices through skill development, social support enhancement, and environmental and policy change
- foster teaching and communication skills in all those engaged in health promotion
- advocate changes in organizations and the environment which will facilitate healthful practices
- develop appropriate and effective programs aimed at promoting good health through change in behaviors at the intrapersonal, interpersonal, organizational, community, and public-policy levels
- enhance the health promoter's role as a model, advocate, and leader in public health
- evaluate health promotion programs to ensure they are meeting societal goals and program objectives
- develop and disseminate new knowledge through systematic research and evaluation

- inform people about health, wellness, illness, and disability, and ways in which they can protect and improve their health, including more efficient use of the health care delivery system.

The Department of Health Promotion, Education, and Behavior offers programs that Professional Online Master of Public Health, lead to the degrees of Master of Public Health, combined degree Master of Social Work/Master of Public Health (in cooperation with the College of Social Work (p. 458)), Doctor of Philosophy, and to the Graduate Certificate in Health School of Journalism and Mass Communication (p. 340) (in cooperation with the Communications School of Library and Information Science (p. 347)), Graduate and the Certificate in Global Health, and Graduate Certificate in Aging.

## Department Admission Requirements

See the Arnold School's website for details: <http://www.sph.sc.edu/futurestudents/index.htm>. ([https://www.sc.edu/study/colleges\\_schools/public\\_health/](https://www.sc.edu/study/colleges_schools/public_health/)) Admission requirements follow those of The Graduate School (p. 8) and include:

- a completed application
- official transcripts from all post-secondary schools and colleges previously attended, including non-degree courses taken
- evidence of academic performance at a **B** or better level on academic transcripts
- satisfactory GRE scores, within the last five years. While there is no minimum guideline for the master's programs, the average GRE (combined verbal and quantitative) for incoming students is approximately 300. For the M.S.P.H., a minimum verbal score of 150 is required. For the doctoral programs, a minimum of 300 (combined verbal and quantitative) is required
- three letters of recommendation from academic and/or professional sources
- a letter of intent which describes professional goals and objectives. Master's degree applicants should describe how the applicant became interested in the field of health promotion, education, and behavior. Doctoral applicants should describe research interests and professional goals.
- satisfactory score on the TOEFL or the IELTS Intl. Academic Course Type 2 exam for applicants whose native language is not English. The minimum acceptable score on the TOEFL is 80 (Internet-based) or 570 (paper-based). The minimum acceptable overall band score on the IELTS Intl. Academic Course Type 2 exam is 6.5.
- current resume or curriculum vitae.
- Doctoral and MSPH applicants should be supported by at least two HPEB faculty members willing to serve as mentors in order to be admitted into the program.

## Graduate Certificate Programs

Applicants to the Graduate Certificate programs must have, at a minimum, a bachelor's degree and meet the general requirements of The Graduate School. Applicants may request that significant professional experience be substituted for standardized test scores.

## Programs

- Aging, Certificate (p. 443)
- Global Health, Certificate (p. 443)
- Health Communication, Certificate (Public Health) (p. 444)

- Health Promotion, Education, and Behavior, M.P.H. (p. 445)
- Health Promotion, Education, and Behavior, Ph.D. (p. 446)

## Courses

Course	Title	Credits
HPEB 501	Human Sexuality Education	3
HPEB 502	Applied Aspects of Human Nutrition	3
HPEB 511	Health Problems in a Changing Society	3
HPEB 512	Southern Discomfort: Public Health in the American South	3
HPEB 513	Race, Ethnicity, and Health: Examining Health Inequalities	3
HPEB 521	The Total School Health Program	3
HPEB 540	Drug Prevention	3
HPEB 542	Tobacco Prevention and Control in Public Health	3
HPEB 547	Consumer Health in Contemporary Society	3
HPEB 550	Behavioral Concepts and Processes for the Health Professional	3
HPEB 551	Medical Anthropology: Field Work	3
HPEB 552	Medical Anthropology	3
HPEB 553	Community Health Problems	3
HPEB 555	Managing Stress	3
HPEB 560	Cooking Up a Storm: Food, Globalization, Localization, and Health in the South	3
HPEB 620	Nutrition Through the Life Cycle	3
HPEB 621	Maternal and Child Health	3
HPEB 627	Lesbian, Gay, Bisexual and Transgender (LGBT) Health	3
HPEB 631	Health Promotion for Elementary and Middle School Teachers	3
HPEB 640	Behavioral Economics in Public Health	3
HPEB 653	Nutrition Assessment and Counseling	3
HPEB 654	Maternal and Child Nutrition	3
HPEB 674	Social Networks, Social Capital, and Health	3
HPEB 679	Addressing Childhood Obesity through Community Approaches	2
HPEB 680	Laboratory Techniques in Physiological Measurement	3
HPEB 683	Contemporary Topics in Sexual Health	3
HPEB 684	HIV/STI Prevention	3
HPEB 690	Independent Study	1-6
HPEB 700	Concepts and Methods in Health Promotion	3
HPEB 701	Theoretical Foundations of Health Promotion	3
HPEB 702	Planning Health Promotion Programs	3
HPEB 703	Public Health Education Seminar	1-3
HPEB 704	Health Education Research Seminar	1
HPEB 705	Contemporary Concepts of Health and Health Education	3
HPEB 706	Consultation in Health Systems	3
HPEB 707	Health Promotion Research Methods	3
HPEB 708	Health Education Methods	3
HPEB 709	Stress and Support Concepts and Management	3
HPEB 710	Evaluation of Health Promotion Programs	3

HPEB 711	Applied Health Communication	3
HPEB 712	Changing Health Practices	3
HPEB 713	Behavioral Aspects of Physical Activity	3
HPEB 715	Qualitative Research Methods in Public Health	3
HPEB 720	Coordinating the School Health Program	3
HPEB 722	Health Education Curriculum Development	3
HPEB 726	Prevention of Teen Pregnancy	3
HPEB 730	Programs for Patient Education	3
HPEB 731	Health Promotion for Older Adults	3
HPEB 742	Alcohol, Drugs, and Public Health Policy	3
HPEB 748	Community Health Development	3
HPEB 750	Health Implications of Stress and Disease	3
HPEB 751	Physical Activity and Health	3
HPEB 752	Nutrition and Public Health	3
HPEB 753	Obesity and Eating Disorders	3
HPEB 754	EXSC 700 or HPEB 700 or consent of instructor	3
HPEB 760	Health Education in Occupational Worksites	3
HPEB 769	Interdisciplinary Perspectives on Child Abuse and Neglect	3
HPEB 770	Health Education in Developing Countries	3
HPEB 771	Socio-Cultural Perspectives on Population Health	3
HPEB 772	Current Trends in Developing World Health	3
HPEB 773	International Public Health Seminar	1
HPEB 779	Injury Prevention and Control	3
HPEB 782A	Teaching Internship (Health)	3
HPEB 782B	Teaching Internship (Health)	9
HPEB 790	Independent Study	1-6
HPEB 792	Selected Topics in Health Education	1-6
HPEB 796	Health Education Project	1-6
HPEB 797	Applied Practice Experience	5
HPEB 798A	Public Health Practicum Seminar	3
HPEB 798B	Public Health Practicum Fieldwork	3
HPEB 799	Thesis Preparation	1-9
HPEB 802	Implementing and Monitoring Health Promotion Interventions	3
HPEB 810	Applied Measurement in Health Education Research	3
HPEB 811	Advanced Public Health Communication: Theory and Methods	3
HPEB 815	Theory-Driven Analysis	3
HPEB 818	Advanced Evaluation of Health Promotion Programs	3
HPEB 820	Public Health Advocacy and Policy	3
HPEB 824	Social and Physical Environment Interventions in Health Promotion	3
HPEB 899	Dissertation Preparation	1-12

## Aging, Certificate

The Certificate of Graduate Study in Aging program addresses the educational needs of full-time and part-time students who will be engaged in the planning, administration and provision of services for older adults. Students earning master's or doctoral degrees in related

disciplines are offered the opportunity to obtain specialized preparation for career paths in the expanding fields of gerontology and geriatrics.

The certificate provides graduate students with opportunities to learn from gerontology educators within several USC academic units. The program is administered by HPEB in the Arnold School of Public Health.

All programs of study are approved by The Graduate School.

## Learning Outcomes

- Students will be able to interpret the impact of biological, social, and psychological changes on the physical, psychological, and social well-being of older adults.

## Program Benefits

The Certificate in Gerontology distinguishes you as a knowledgeable, skilled, and committed professional in the field of gerontology. The program

- enhances professional marketability,
- builds skills and competencies,
- fulfills continuing education requirements for many professionals, and
- develops an interdisciplinary perspective on aging.

## Career Opportunities

This certificate program provides you with the knowledge and skills to effectively meet the needs of the aging population in a wide range of careers. There are opportunities in nursing, teaching, service, social work, public health, mental health administration, and research that focus on the needs and interests of older adults. These opportunities also exist within government programs and agencies; public and private institutions that provide health, education, and social services; research centers; special interest groups; colleges and universities; and corporate human services divisions.

For more information: Aging, Certificate ([https://sc.edu/study/colleges\\_schools/public\\_health/study/graduate\\_degrees/certificates\\_of\\_graduate\\_study/](https://sc.edu/study/colleges_schools/public_health/study/graduate_degrees/certificates_of_graduate_study/))

## Certificate Requirements (18 Hours)

Course	Title	Credits
HPEB 731	Health Promotion for Older Adults	3
SOWK 772	Programs and Services for Older Adults	3
HSPM 764	Long-Term Care Administration	3
	Practicum	3
	Select electives chosen with the approval of the program director	6
<b>Total Credit Hours</b>		<b>18</b>

## Global Health, Certificate

### Overview

Modern society operates in a global environment with increasing intercontinental travel, trade, and communication. The great frequency of every-day interactions with people from different parts of the world has increased the need for clinical and public health professionals to understand health environments and policy that extend beyond local borders. Certificate of Graduate Study in Global Health (CGSGH) will

prepare students with the knowledge and skills that are necessary to conduct international work, by focusing on topics such as comparative health systems and policies; health care administration, finance and services; sociocultural perspectives on health; and development and evaluation of health promotion programs that are sensitive to local context.

## Learning Outcomes

- Students will demonstrate understanding of global health issues and efforts to alleviate shortfalls through various methods of in-depth investigation and research.
- Students will demonstrate an understanding of environmental stressors and pollution; their sources in the natural, home and workplace environments; their modes of transport and transformation; their ecological and public health effects; and, methods of prevention/remediation.

## Degree Requirements (18 Hours)

### Core Courses (9 Hours)

Course	Title	Credits
HPEB 722	Health Education Curriculum Development	3
ENHS 660	Concepts of Environmental Health Science	3
HPEB 640	Behavioral Economics in Public Health	3
<b>Total Credit Hours</b>		<b>9</b>

### Select One of the Following Tracks (9 Hours)

#### Population Health

Course	Title	Credits
Select three of the following:		
HPEB 674	Social Networks, Social Capital, and Health	3
HPEB 748	Community Health Development	3
HPEB 820	Public Health Advocacy and Policy	3
EPID 701	Concepts and Methods of Epidemiology	3
EPID 749	Infectious Diseases Epidemiology	3
<b>Total Credit Hours</b>		<b>9</b>

#### Environmental Health

Course	Title	Credits
Select three of the following:		
ENHS 793	Special Topics in Environmental Health Sciences	3
ENHS 592	Advanced Special Topics in Environmental Health	3
ENHS 661	Parasitology	3
ENHS 625	Medical Mycology	3
ENHS 661	Parasitology	3
<b>Total Credit Hours</b>		<b>9</b>

#### Food and Nutrition

Course	Title	Credits
Select three of the following:		
HPEB 560	Cooking Up a Storm: Food, Globalization, Localization, and Health in the South	3
HPEB 620	Nutrition Through the Life Cycle	3
EPID 763	Nutritional Epidemiology	3
EXSC 620	Nutrition and Immunology	3

Course	Title	Credits
HPEB 752	Nutrition and Public Health	3
<b>Total Credit Hours</b>		<b>9</b>
<b>Health Care Policy and Systems</b>		
Select three of the following:		
HSPM 712	Health Economics	3
HSPM 726	Applied Public Health Law for Administrators	3
HSPM 730	Financing of Health Care	3
HSPM 724	Health Law	3
HSPM 772	International Health	3
<b>Total Credit Hours</b>		<b>9</b>

## Health Communication, Certificate (Public Health)

This is an 18-hour post-bachelor's program that provides students the opportunities to strengthen their knowledge in health communication content, research methods, and application. Qualified individuals can take the certificate as a stand-alone program or in conjunction with another degree.

## Learning Outcomes

- Students will be able to interpret the impact of biological, social, and psychological changes on the physical, psychological, and social well-being of older adults.

## Admission

Daniela Friedman  
HPEB Professor  
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Casey Goldston Giraudy  
HPEB Academic Programs Coordinator  
phone: 803-777-2966  
e-mail: goldston@sc.edu

## Certificate Requirements (18 Hours)

### Certificate Core (9 Hours)

Course	Title	Credits
HPEB 711	Applied Health Communication	3
SLIS 749	Health Sciences Information Resources	3
Select one of the following:		3
JOUR 702	Communication Theory	3
JOUR 803	Seminar in Mass Communication Theory and Theory Construction	3
JOUR 772	Seminar in Health, Science, and the Media	3
JOUR 775	Strategic Communication for Behavior and Social Change	3
<b>Total Credit Hours</b>		<b>9</b>

## Electives (6 Hours)

Course	Title	Credits
Select six directed elective hours from an approved list, depending on the student's interests as approved by the faculty advisor		6
<b>Total Credit Hours</b>		<b>6</b>

## Practicum (3 Hours)

Course	Title	Credits
Select a three credit-hour practicum or project in the student's home department		3
<b>Total Credit Hours</b>		<b>3</b>

Examples of practica/internships include appointments with local agencies involved with health communication, or work on an active research project. Faculty members work closely with students to help them secure the practicum.

## Health Promotion, Education, and Behavior, M.P.H.

The M.P.H. is designed for individuals with aspirations to be practitioners in health department, community, school or worksite settings. The program requires 45 hours of course work, including public health and health promotion, education, and behavior core courses and a 5-hour applied practice experience. The public health core is designed to develop competencies in using epidemiology and biostatistics to understand distributions and causes of diseases in populations; using qualitative research methods to understand attitudes and behaviors; and managing and administering health organizations. The health promotion, education, and behavior core is designed to develop competencies in planning implementing, and evaluating programs which promote informed decision-making and health behavior change in individuals, and communities. Candidates must successfully complete a comprehensive examination at or near the conclusion of program requirements.

## Learning Outcomes

- Students will demonstrate the ability to apply social and behavioral theories and models to the development, implementation, and evaluation of public health programs.
- Students will demonstrate the ability to utilize multi-level approaches in understanding the importance of context in addressing public health issues.
- Students will articulate how multi-sectoral, collaborative engagement advances health equity and improves health outcomes.
- Students will demonstrate the ability to develop sound and feasible methods to evaluate public health programs, interpret results, and communicate those results effectively.
- Students will demonstrate understanding of how to make informed study design decisions and be able to articulate the strengths and weaknesses of a research study.

## Admission

See the department website for details: <http://www.sph.sc.edu/futurestudents/index.htm> ([https://www.sc.edu/study/colleges\\_schools/public\\_health/](https://www.sc.edu/study/colleges_schools/public_health/)). Admission requirements follow those of The Graduate School and include:

- a completed application
- official transcripts from all post-secondary schools and colleges previously attended, including non-degree courses taken
- evidence of academic performance at a B or better level on academic transcripts
- satisfactory GRE scores. While there is no minimum guideline for the master's programs, the average GRE (combined verbal and quantitative) for incoming students is approximately 300.
- three letters of recommendation from academic and/or professional sources
- a letter of intent which describes professional goals and objectives, and how the applicant became interested in the field of health promotion, education, and behavior.
- satisfactory score on the TOEFL or the IELTS Intl. Academic Course Type 2 exam for applicants whose native language is not English. The minimum acceptable score on the TOEFL is 80 (Internet-based) or 570 (paper-based). The minimum acceptable overall band score on the IELTS Intl. Academic Course Type 2 exam is 6.5.
- current resume or curriculum vitae.

Admissions process information and links can be found at the Arnold School of Public Health webpage: <http://www.sph.sc.edu/futurestudents/index.htm> ([https://www.sc.edu/study/colleges\\_schools/public\\_health/](https://www.sc.edu/study/colleges_schools/public_health/)).

Applications for the MPH program are made through the new Schools of Public Health Application System (SOPHAS). Please go to <http://www.sophas.org> (<https://sophas.org/>) for further details. Applications for the Professional Online MPH program in HPEB and the combined MSW/ MPH programs are made through the Graduate School. Please go to: <https://www.applyweb.com/uscgrad/index.ftl>.

Only single program applications are accepted, so you may only apply to one program at a time (unless you are applying to the MSW/MPH program or certificate program). Once received, your application and credentials are sent for review by the HPEB faculty. After reviewing your credentials, the department makes a recommendation to The Graduate School which officially grants admission. We will inform you of the department's recommendation regarding admission, but official notice of admission comes from the USC Graduate School.

You are encouraged to review carefully the information provided on the above websites before beginning the application process. If you have further questions, you may contact:

Ken Watkins  
HPEB Graduate Director  
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HPEB Academic Programs Coordinator  
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Office of Student and Alumni Services  
phone: 803-777-5031  
e-mail: [sphstsr@mailbox.sc.edu](mailto:sphstsr@mailbox.sc.edu)

## Degree Requirements (45 Hours)

### School of Public Health Core Requirements (16 Hours)

Course	Title	Credits
PUBH 725	Quantitative Methods for Public Health Practice	5
PUBH 726	Qualitative Methods for Public Health Practice	3
PUBH 730	Public Health Systems, Policy, and Leadership	3
PUBH 735	Practical Applications of Public Health Planning	4
PUBH 678	Transforming Health Care for the Future	1
<b>Total Credit Hours</b>		<b>16</b>

### Department Core Course Requirements (12 Hours)

Course	Title	Credits
HPEB 701	Theoretical Foundations of Health Promotion	3
HPEB 707	Health Promotion Research Methods	3
HPEB 710	Evaluation of Health Promotion Programs	3
HPEB 748	Community Health Development	3
<b>Total Credit Hours</b>		<b>12</b>

### Elective Courses (12 Hours)

- Courses specific to the student's area/s of interest with approval of the student's academic advisor. Electives may be chosen from HPEB or from courses in the University that support the overall educational goals of the student.

### Applied Practice Experience (5 Hours)

Course	Title	Credits
HPEB 797	Applied Practice Experience	5
<b>Total Credit Hours</b>		<b>5</b>

## Health Promotion, Education, and Behavior, Ph.D.

The Ph.D. program prepares graduates for leadership and skills in research, teaching, and professional service. The Ph.D. prepares graduates to assume leadership roles that emphasize research and teaching activities; these positions are often located in academic or other research settings. The degree requires 48 hours of post-masters course work (60 hours of post-baccalaureate course work), including 12 hours of dissertation preparation. Students may request transfer of a limited number of graduate courses not part of a completed degree program into the doctoral program of study. All doctoral students' programs of study must meet the university and departmental requirements and are subject to approval by the student's program advisory committee and the department's Graduate Director. In addition, the following are required: a written qualifying examination, a written and oral comprehensive examination, and an oral defense of the dissertation. Experience as a member of a research team is also part of the program requirements.

### Learning Outcomes

- Students will be able to identify individual, organizational, community, and socio-cultural influences on health and health behavior.
- Students will be able to develop, implement and evaluate interventions at multiple levels to promote health.

- Students will be able to design and conduct rigorous and innovative social and behavioral science research relevant to public health.
- Student will be able to exhibit professional skills including scientific writing, oral communication, grant-writing, teaching, scientific service, and collaboration.

## Admission

Admissions requirements follow those of The Graduate School and include the following:

- a completed application.
- official transcripts from all post-secondary schools and colleges previously attended, including non-degree courses taken.
- evidence of academic performance at a B or better level on academic transcripts.
- satisfactory GRE scores. For the Ph.D. program, a minimum of 300 (combined verbal and quantitative) is required.
- three letters of recommendation from academic and/or professional sources.
- a letter of intent which describes research interests and professional goals.
- satisfactory score on the TOEFL or the IELTS Intl. Academic Course Type 2 exam for applicants whose native language is not English. The minimum acceptable score on the TOEFL is 80 (Internet-based) or 570 (paper-based). The minimum acceptable overall band score on the IELTS Intl. Academic Course Type 2 exam is 6.5.
- current resume or curriculum vitae.
- Doctoral applicants should be supported by at least two HPEB faculty members willing to serve as mentors in order to be admitted into the program.

Admissions process information and links can be found at the Arnold School of Public Health webpage: <http://www.sph.sc.edu/futurestudents/index.htm>. ([https://www.sc.edu/study/colleges\\_schools/public\\_health/](https://www.sc.edu/study/colleges_schools/public_health/))

Applications for the Ph.D. program in HPEB are made through the Schools of Public Health Application System (SOPHAS). Please go to <http://www.sophas.org> for further details.

Only single program applications are accepted, so you may only apply to one program at a time (unless you are applying to a certificate program). Once received, your application and credentials are sent for review by the HPEB faculty. After reviewing your credentials, the department makes a recommendation to The Graduate School which officially grants admission. We will inform you of the department's recommendation regarding admission, but official notice of admission comes from the USC Graduate School.

You are encouraged to review carefully the information provided on the above websites before beginning the application process. If you have further questions, you may contact:

Ken Watkins  
HPEB Graduate Director  
phone: 803-777-7603  
e-mail: [watkins@mailbox.sc.edu](mailto:watkins@mailbox.sc.edu)

Casey Goldston Giraudy  
HPEB Academic Programs Coordinator  
phone: 803-777-2966

e-mail: Goldston@sc.edu

Office of Student and Alumni Services  
phone: 803-777-5031  
e-mail: sphstsr@mailbox.sc.edu

## Degree Requirements (60 Post-Baccalaureate Hours)

### Health Promotion, Education, and Behavior Core (12 Hours)

Course	Title	Credits
HPEB 771	Socio-Cultural Perspectives on Population Health	3
HPEB 824	Social and Physical Environment Interventions in Health Promotion	3
HPEB 818	Advanced Evaluation of Health Promotion Programs	3
HPEB 704	Health Education Research Seminar (three one-hour seminars)	3
<b>Total Credit Hours</b>		<b>12</b>

### Research Methods (12 Hours Minimum)

Course	Title	Credits
Select at least one course from each of the following areas:		12
<b>Qualitative Methods</b>		
HPEB 715	Qualitative Research Methods in Public Health	
<b>Quantitative Methods <sup>1</sup></b>		
<b>Measurement</b>		
HPEB 810	Applied Measurement in Health Education Research	
<b>Additional Classes</b>		
<b>Total Credit Hours</b>		<b>12</b>

<sup>1</sup> e.g. BIOS 757, EDRM 711 or equivalent.

### Cognate (6 Hours minimum)

- Classes reflecting defined content or topical areas.

### Public Health (6 Hours)

Note: These requirements are met if student has previous MPH or similar graduate-level core PH coursework, in which case, six hours may be taken in research methods or cognate areas.

Course	Title	Credits
PUBH 700	Perspectives in Public Health	3
EPID 700	Introduction to Epidemiology	3
or EPID 701	Concepts and Methods of Epidemiology	
<b>Total Credit Hours</b>		<b>6</b>

### Dissertation (12 Hours or More)

Select 12 hours or more

## Health Services Policy and Management

Department Website (<http://www.sph.sc.edu/hspm/>)

James Hardin, *Interim Chair*

The Department of Health Services Policy and Management promotes individual and community health through improvements in the organization and management of public health and health care delivery. The department offers the Master of Public Health (M.P.H.), the Master of Health Administration (M.H.A.), and three dual degrees: the Master of Social Work/Master of Public Health (M.S.W./M.P.H.), the Master of Public Health/Master of Public Administration (M.P.H./M.P.A.) and the Juris Doctor/Master of Health Administration (J.D./M.H.A.) (see Graduate Dual Degree Programs (<https://academicbulletins.sc.edu/graduate/dual-degree-programs/>)). At the doctoral level, the department offers the Doctor of Philosophy (Ph.D.).

The Master's programs prepare students to assume leadership positions in public, nonprofit, and for-profit organizations in public health, health services, health policy, and related fields. The M.P.H. emphasizes preparation for a career in the public health sector. The program includes full public health foundation courses, taught in an interdisciplinary format, in the five core areas of biostatistics, epidemiology, environmental health sciences, administration, and health promotion, education and behavior. The M.H.A. emphasizes preparation for a career in management in the private health care sector. The program has a substantial emphasis on accounting and finance. A professional M.H.A. is also available for practicing professionals with courses held on weekends. All programs may be taken part-time. The M.P.H. may be taken by distance education via synchronous and/or asynchronous broadcast. A Certificate of Graduate Study in Gerontology may be combined with any degree program (see bulletin section for the College of Social Work).

The Ph.D. program prepare students to make a substantive impact in health services policy and management through teaching, research and policy leadership in university settings and in the public and private health care sector. For experienced health care managers and physicians, the Ph.D. program prepares them for senior policy and management positions in public and private health-focused organizations.

## Admission

Applicants should submit an application packet through the School of Public Health Application Service (<http://www.sophas.org>) unless advised otherwise by the department.

## Master's Programs

### Health Services Policy and Management, M.P.H. and Health Services Policy and Management, M.H.A.

Applicants for a master's degree must submit the following:

- transcripts of all college-level academic work
- three letters of recommendation
- scores for the Graduate Record Examination (GRE) or the Graduate Management Aptitude Test (GMAT)
- a statement of professional goals
- a personal resume
- Test of English as a Foreign Language (TOEFL) or IELTS Intl. Academic Course Type 2 exam scores, if the applicant's native language is not English

International applicants should contact the program director before applying to the program.

An interview with departmental faculty is highly recommended.

## Graduate Assistantship

All full-time M.H.A. and M.P.H. students are expected to work as graduate assistants in health service or public health organizations in the community to acquire work experience and enrich the learning process through on-the-job application of concepts and techniques learned in the classroom. To qualify for an assistantship, a student must be fully admitted to a degree program, be enrolled as a full-time student, and maintain a 3.00 GPA.

## Dual Degrees

Students seeking admission to dual degree programs must meet the admissions requirements of both programs. Our requirements are listed above. The College of Social Work, School of Law and the Department of Political Science specify the admission requirements for their programs.

The Department of Health Services Policy and Management and the College of Social Work, School of Law and Department of Political Science offer coordinated programs that lead to a dual degree. The requirements for the M.P.H. or M.H.A. portion of each dual degree program are the same as shown above. The M.P.A., M.S.W. and J.D. portions of the dual degree programs are determined by the respective schools and college. Some courses do fulfill requirements for both portions of the dual degree. A dual degree program thus typically requires fewer semester hours in total than if the two programs were taken separately.

## Profiles of Admitted Master's Students

### M.P.H.

For Fall 2016, there were 44 applicants. Thirty-five were accepted. Their mean GRE score was 297 in combined verbal & quantitative on the new scoring scale. Their mean undergraduate GPA was 3.33 (on a 4.00 point scale).

### M.H.A.

For Fall 2016, there were 103 applicants; 44 were accepted while 18 enrolled. Their mean GRE score was 301 in combined verbal & quantitative based on the new scoring scale. The mean GMAT score was 490 on the new scale. Overall mean undergraduate GPA was 3.3 on a 4.0 scale.

## Doctoral Programs

### Health Services Policy and Management, Ph.D.

Applicants for the PhD program must submit:

- transcripts of prior undergraduate and graduate work
- scores for the Graduate Record Examination (GRE) or the Graduate Management Aptitude Test (GMAT). This requirement may be waived for applicants with a terminal clinical degree or other advanced degrees (such as M.D., M.B.B.S., D.D.S., J.D., or Ph.D.) on a case by case basis.
- three letters of recommendation
- a statement of professional goals
- a personal resume
- copies of publications, if any

- Test of English as a Foreign Language (TOEFL) or IELTS Intl. Academic Course Type 2 exam scores, if the applicant's native language is not English.

International applicants are strongly encouraged to contact the program director before applying to the program.

An interview with departmental faculty is highly recommended.

Admission criteria for the Doctor of Philosophy program include:

- Master's degree in health administration, business administration, public health, or public administration is strongly preferred. Exceptional applicants with baccalaureate degrees will also be considered.
- A grade point average of at least 3.00 (on a 4.00 scale) is required on previous undergraduate and graduate course work. Exceptions to this requirement will be considered on a case-by-case basis by the faculty.

The Ph.D. degree requires an approved program of 60 hours beyond the baccalaureate degree. Students with a relevant master's degree may complete the PhD in Health Services Policy and Management by completing a minimum of 42 additional credit hours (including 12 credit hours of dissertation preparation). A student without a prior master's degree will be required to complete a minimum of 60 graduate credit hours to graduate.

### Health Services Policy and Management, Dr.P.H.

Admission criteria for the Doctor of Public Health program include:

- Applicants should have a master's degree in health administration, business administration, public health, or public health administration. Exceptions will be considered by petition to the faculty. Applicants must have worked in a health-related midlevel management or policy position for at least four years.
- Previous graduate-level course work should include health care finance, statistics, organizational behavior, health economics, and epidemiology. Students lacking one or more of these will be required to make up the deficiency. Courses taken to make up deficiencies do not count toward the Dr.P.H. program. Students with three deficiencies will have a conditional admission contingent on successful completion of make-up courses.
- A grade point average of at least 3.00 (on a 4.00 scale) is required on previous graduate course work.

Applicants must submit:

- transcripts of prior undergraduate and graduate work
- scores for the Graduate Record Examination (GRE) or the Graduate Management Aptitude Test (GMAT). This requirement may be waived for applicants with a terminal clinical degree or other advanced degrees (such as M.D., M.B.B.S., D.D.S., J.D., or Ph.D.) on a case by case basis.
- three letters of recommendation from persons who can reflect upon the applicant's prior academic and professional performance
- a statement of career goals
- a personal resume
- copies of publications, if any
- Test of English as a Foreign Language (TOEFL) or IELTS Intl. Academic Course Type 2 exam scores, if the applicant's native language is not English.



language is not English (may be waived, by petition to the faculty, if academic experience in the U.S. demonstrates English proficiency).

International applicants are strongly encouraged to contact the program director before applying to the program.

An interview with the departmental faculty is highly recommended.

## Profile of Admitted Doctoral Students

### Ph.D.

For Fall, 2016, there were 39 applicants to the Ph.D. program, of whom 26 were accepted and 13 matriculated. The mean GRE scores of accepted applicants were 152 (verbal) and 153 (quantitative). Their mean graduate GPA was 3.62 (on a 4.0 scale).

### Dr.P.H.

For Fall, 2016, the Department did not admit any student in the program.

## Programs

- Health Services Policy and Management, M.H.A. (p. 451)
- Health Services Policy and Management, M.P.H. (p. 452)
- Health Services Policy and Management, Ph.D. (p. 453)

## Courses

### HSPM 500 - Introduction to Health Care Management and Organization (3 Credits)

Provide students with overview of health services management, management techniques and the different roles and functions of the different health care services. Use of field trips and guest speakers from different health care providers.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

### HSPM 509 - Fundamentals of Rural Health (3 Credits)

Overview of the delivery and financing of health care in the rural U.S., with emphasis on vulnerable rural populations and access to care.

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy

### HSPM 510 - Comparative Health Systems and Health System Efficiency, Effectiveness, Sustainability and Equity (3 Credits)

Comparative health systems of the world including health system organization, management, financing, resource use and health outcomes.

### HSPM 513 - Issues in Health Care Information Management (3 Credits)

An introduction to data management in healthcare institutions for undergraduate students and non-HSPM major graduate students. Topics include the nature of medical data, legal protections surrounding such information, and basis strategies for managing information technology resources.

**Prerequisites:** HSPM 500.

### HSPM 514 - Introduction to Health Services Delivery and Policy (3 Credits)

Overview of health services delivery in the United States, including organization and financing of health care, health insurance practices, primary and long-term care among other topics.

### HSPM 530 - Finance in Health Administration (3 Credits)

Introduction to health care finance. Course will teach reimbursement structures, regulatory mechanisms, cost control, and related factors unique to healthcare organizations.

**Prerequisites:** BADM 225.

### HSPM 700 - Approaches and Concepts for Health Administration (3 Credits)

An interdisciplinary perspective on the field of health administration. Philosophy concepts, and skills of implementation, management, and evaluation are presented and discussed. Principles in the practice of health administration are applied to identified problems and situations.

### HSPM 706 - Health and Economic Development: Interrelationships among health, poverty and economic progress (3 Credits)

Linkages among economic development, poverty, inequality and health. Direct and indirect effects of health in economic development.

### HSPM 707 - Ethical Issues in Health Care and Research (3 Credits)

The ethical dimensions of decision-making in health care delivery, administration and epidemiologic research. Provides ethical foundations for discussion of topics in health-related research and practice.

**Cross-listed course:** EPID 707

### HSPM 708 - Methods of Economic Evaluation of Health Projects, Policies and Programs (3 Credits)

Concepts and principles of economic evaluation and applications of evaluation techniques (e.g., cost-effectiveness, cost-utility, cost-benefits, decision modeling) to the real-world issues and problems.

### HSPM 709 - Perspectives in Rural Health (3 Credits)

Analysis of issues and demographic, economic, and political forces affecting health care delivery systems in rural America. Examines structure of federal and state public health programs that impact rural health.

### HSPM 711 - Health Politics (3 Credits)

Analysis of issues and forces affecting health delivery through the public sector; major models of political decision-making; and current health legislation.

### HSPM 712 - Health Economics (3 Credits)

A critical introduction to the application of economic analysis to problems in the health care field. Related scientific literature.

### HSPM 713 - Information Systems in Health Administration (3 Credits)

Understanding and optimizing the use of health information systems and allied technologies including electronic medical records to improve healthcare organizations' performance in the areas of care delivery, operations management, quality, safety, and accessibility of healthcare services.

### HSPM 714 - Perspectives in Community Health Organizations (3 Credits)

Origins/functions of public health and the U.S. health-care system; special attention to public health perspectives, social/behavioral determinants of health and environmental health issues.

### HSPM 715 - Community Assessment and the Delivery of Health Care Services (3 Credits)

An introduction to the concepts of community assessment and managerial epidemiology, and their use in the population-based planning and management of integrated health systems.

**HSPM 716 - Quantitative Methods for Health Administration (3 Credits)**

An introduction to quantitative methods and analytical techniques with application to health administration. The course includes the use of models and simulation for decision making and control in health administration.

**Prerequisites:** HSPM 775 or BIOS 700.

**HSPM 717 - Health Services Research Methods I (3 Credits)**

Evaluation of the efficiency and effectiveness of health programs. Different research designs will be discussed in terms of their relevance to specific evaluation problems.

**HSPM 718 - Health Planning (3 Credits)**

Strategy and tactics of state, regional, institutional health services planning. Special attention to the role of marketing.

**Prerequisites:** HSPM 733 or equivalent.

**HSPM 719 - Health Services Research Methods II (3 Credits)**

The role and methods of sample surveys in health administration; development of survey designs; survey procedures; questionnaire design; interviewing procedures; codebook design; utilization of computer program packages in data analysis.

**Prerequisites:** BIOS 700.

**HSPM 720 - Health Services Research Methods III (3 Credits)**

Econometric methods for making proper statistical inferences using estimates for observational data.

**HSPM 722 - Sociology of Health for Health Services Managers I (1 Credit)**

Sociological approaches to the study of health and the decision to seek health care.

**HSPM 723 - Sociology of Health for Health Services Managers II (1 Credit)**

Sociological approaches to the study of health care institutions.

**HSPM 724 - Health Law (3 Credits)**

Legal basis for health care activities; health care provider laws, regulations, antitrust and organizational governance.

**HSPM 725 - Human Resources Issues in Health Care Sector (3 Credits)**

A study of the current problems, theories, models, and strategies associated with managing human resources in the health care sector.

**HSPM 726 - Applied Public Health Law for Administrators (3 Credits)**

Course addresses the significant legal and ethical issues in Public Health practice; basis for Public Health actions, authorities and limitations; role of the three branches of government in Public Health protection.

**HSPM 727 - Advancing Public Health Policy (3 Credits)**

Advancing public health policy through design and implementation of a policy change campaign.

**Prerequisites:** PUBH 730.

**HSPM 730 - Financing of Health Care (3 Credits)**

Application of the principles of financial management to the systems involved in the delivery of health care.

**Prerequisites:** BADM 660 or equivalent.

**HSPM 731 - Health Care Finance I (3 Credits)**

Provides working knowledge of financial management techniques for managers in the health care sector.

**Prerequisites:** HSPM 733.

**HSPM 732 - Health Care Finance II (3 Credits)**

Provides knowledge base and decision-making tools for financial management in health care organizations using financial management tools and principles.

**Prerequisites:** HSPM 731.

**HSPM 733 - Health Care Management Accounting (3 Credits)**

Financial accounting and internal accounting for management decision-making, including cost determination, cost control, performance evaluation and financial planning.

**Prerequisites:** Undergraduate course in accounting or competency in accounting through personal study of an undergraduate accounting text.

**HSPM 764 - Long-Term Care Administration (3 Credits)**

An overview of management and policy concepts and issues pertaining to long-term care facilities and programs.

**HSPM 765 - Leadership in Health Care Organizations (1 Credit)**

Seminar on theory of and practice of leadership as a manager in the health care industry.

**HSPM 766 - Health Services Administration I (3 Credits)**

Human Resources Management in health care and allied topics.

**Prerequisites:** HSPM 769.

**HSPM 768 - Health Services Administration II (3 Credits)**

Operations management in health care, supply chain management and logistics processes, health services process improvement.

**Prerequisites:** HSPM 716.

**HSPM 769 - Organizational Behavior (3 Credits)**

To explore organizational behavior at the micro level (individuals, motivation, leadership, conflict management) and macro level (social systems, inter-organizational relationships, change and innovation, performance and strategy, organizational design), with particular focus on health care environments.

**HSPM 770 - Decision Making For Health Care Executives (3 Credits)**

Case study format where students identify problems, evaluate alternatives and make decisions using health care leaders in the community to prepare cases. Integration of principles learned in other health care theory and management courses.

**Prerequisites:** HSPM 732, HSPM 718, and HSPM 769.

**HSPM 772 - International Health (3 Credits)**

Overview of international health status, demographics; communicable/noncommunicable diseases; health care needs, financing, and infrastructure delivery; and maternal and child health, family planning, and public health programs.

**HSPM 774 - Quality Management in Healthcare (3 Credits)**

Systems approach to quality management focusing on Lean and other quality management methods that can be directly applied in a healthcare setting. Group projects in local acute care settings allow students to practice quality management skills.

**Prerequisites:** HSPM 716, HSPM 731 or equivalent.

**HSPM 775 - Managerial Epidemiology and Statistics in Healthcare (3 Credits)**

Principles and tools of epidemiology applied to decision-making in a health care environment. Knowledge and skills useful to health services managers related to statistics, population health management and assessment of medical care processes/outcomes are taught.

**HSPM 776 - Physician Practice Management (3 Credits)**

Builds on prior MHA coursework on health care management to focus on specific knowledge and skills applicable to the management of physician practices.

**Prerequisites:** HSPM 731 and HSPM 769.

**HSPM 777 - Healthcare Policy and Principles of Health Insurance (3 Credits)**

Demand, supply, employment-based coverage, government-sponsored programs and managed care.

**HSPM 778 - Health Care Marketing (3 Credits)**

The principles of marketing applied to the health care setting.

**HSPM 788 - Public Health Practice Experience (3 Credits)**

Applied public health practice experience addressing management or policy need in public health setting.

**Prerequisites:** PUBH 725, PUBH 726, PUBH 730, PUBH 735 and 6 additional hours HSPM courses.

**HSPM 790 - Independent Study (1-6 Credits)****HSPM 791 - Selected Topics (1-6 Credits)**

Content varies by title. Course may be repeated for a total of 6 credit hours.

**HSPM 796 - Health Services Policy and Management MPH Capstone Course (2 Credits)**

Synthesis of foundational and HSPM MPH competencies in preparing a high quality grant proposal to address a public health problem.

**Prerequisites:** PUBH 725, PUBH 726, PUBH 730, PUBH 735, HSPM 712, HSPM 730, HSPM 768.

**HSPM 797 - Management Residency (1-3 Credits)**

On-site management project in a health care setting.

**HSPM 798 - Public Health Residency (3 Credits)**

Practicum in approved public health, community health, or health care setting emphasizing evaluation and service delivery planning or a project such as resolution of a management problem or evaluation of a program component.

**Prerequisites:** EPID 700, BIOS 700 and three additional hours in the major.

**HSPM 800 - Doctoral Seminar (1 Credit)**

Format for presentation of faculty research, doctoral student dissertation proposals and guest lecturers on timely issues in health care policy and management.

**HSPM 818 - Economic Evaluation and Policy Analysis of Health Services (3 Credits)**

The course foci is on theories and techniques used in conducting economic evaluations and policy analyses to ascertain the efficacy and effectiveness of public health and health care programs, services, and policies. Enrollment is restricted to DrPH or PhD students.

**Prerequisites:** HSPM 711, HSPM 712, HSPM 845 and HSPM 846.

**HSPM 820 - Public Health Leadership (3 Credits)**

The course is designed to give students knowledge and skills necessary to demonstrate leadership in a variety of public health venues. Course content will focus specifically on theories, skills, styles, and techniques used in providing leadership to public health and healthcare programs, services, and policy development, and research. Enrollment Restrictions: Students must be accepted into a PhD, DrPH, or MPH program.

**HSPM 845 - Advanced Study in Health Policy Management I (3 Credits)**

Readings and discussion of topics relevant to research in health administration/health sciences.

**HSPM 846 - Advanced Topics in Health Policy and Management II (3 Credits)**

Readings and discussion of major topics, including institutionally based issues, in research in health administration/health sciences.

**Prerequisites:** HSPM 845.

**HSPM 890 - Independent Study (1-3 Credits)**

Directed research on a topic to be developed by doctoral student and instructor. May be repeated for credit.

**HSPM 898 - Doctor of Public Health Practicum (6 Credits)**

Students are required to conduct applied public health methods and strategies as a part of their practicum experience. Examples of practicum include, but not limited to development, implementation, and evaluation of public health or healthcare services, policies, organizational development, and regulatory activities.

**HSPM 899 - Dissertation Preparation (1-12 Credits)**

One full year, 18 hrs, of graduate study beyond the master's level.

## Health Services Policy and Management, M.H.A.

The M.H.A. program prepares students for a career in the management of the full range of programs, organizations, and facilities in health services and medical care: acute, post-acute, long-term, and managed care, in the public and private sectors. The M.H.A. is offered in a full-time format for regular students. Working professionals may complete the program on a part-time basis.

## Learning Outcomes

- Students will be able to apply Critical Thinking, Analysis, and Problem-Solving competencies to health services organizations.
- Students will be able to apply Management and Leadership competencies to health services/organizations.
- Students will be able to apply Communications and Interpersonal Effectiveness competencies to health services organizations.
- Students will be able to apply Professionalism and Ethics competencies to health services organizations.
- Students will be able to apply Population Health Management competencies to health services planning and management, including social determinants of health.

## Degree Requirements (58 Hours)

Requirements	Credit Hours
Management	31
Accounting and Finance	9
Biostatistics and Quantitative Methods	3
Public Health - PUBH 700	3
Managerial Epidemiology and Statistics for Healthcare	3
Health Planning	3
Approved Elective	3
Management Residency	3

## Course Options

Course	Title	Credits
HSPM 712	Health Economics	3
HSPM 713	Information Systems in Health Administration	3
HSPM 714	Perspectives in Community Health Organizations	3
HSPM 716	Quantitative Methods for Health Administration	3
HSPM 718	Health Planning	3
HSPM 724	Health Law	3
HSPM 731	Health Care Finance I	3
HSPM 732	Health Care Finance II	3
HSPM 733	Health Care Management Accounting	3
HSPM 765	Leadership in Health Care Organizations	1
HSPM 766	Health Services Administration I	3
HSPM 768	Health Services Administration II	3
HSPM 769	Organizational Behavior	3
HSPM 770	Decision Making For Health Care Executives	3
HSPM 774	Quality Management in Healthcare	3
or HSPM 777	Healthcare Policy and Principles of Health Insurance	
HSPM 775	Managerial Epidemiology and Statistics in Healthcare	3
HSPM 776	Physician Practice Management	3
HSPM 797	Management Residency	1-3
Select two elective courses		6
<b>Total Credit Hours</b>		<b>56-58</b>

## Final Examination

M.H.A. candidates must complete and submit an acceptable written report on the residency. Approval of the report must be by the faculty advisor, a second reader, and the preceptor at the residency site. An oral presentation of the report is required after the approval of the document. The student must also complete and submit departmental and school evaluations.

## Graduate Assistantship

All full-time M.H.A. and M.P.H. students are expected to work as graduate assistants in health service organizations in the community to acquire work experience and enrich the learning process through on-the-job application of concepts and techniques learned in the classroom. To qualify for an assistantship, a student must be fully admitted to a degree program, be enrolled as a full-time student, and maintain a 3.00 GPA.

## Dual Degrees

The Department of Health Services Policy and Management and the College of Social Work, School of Law and Department of Political Science offer coordinated programs that lead to a dual degree. The requirements for the M.P.H. or M.H.A. portion of each dual degree program are the same as shown above. The M.P.A., M.S.W. and J.D. portions of the dual degree programs are determined by the respective schools and college. Some courses do fulfill requirements for both portions of the dual degree. A dual degree program thus typically requires fewer semester hours in total than if the two programs were taken separately.

## Health Services Policy and Management, M.P.H.

The M.P.H. program prepares students for management in the public health sector, such as federal, state, and local health agencies. Some M.P.H. graduates work in the private sector.

## Learning Outcomes

- Students will be able to apply operations management concepts to address organizational performance issues in health service organizations.
- Students will be able to describe legal perspectives on health policy and management issues, including assessment of legal and regulatory environments in the context of public health.
- Students will be able to apply economic principles for allocating and mobilizing resources for public health interventions and programs.
- Students will be able to apply the principles and tools of budgeting, resource management, and financial analysis to improve efficiency of public health and health care delivery organizations.
- Students will be able to develop policy options for the achievement of an agency's or program's objectives.

## Program Requirements (45 Hours)

Requirements	Credit Hours
Public Health Core (biostatistics, epidemiology, environmental health sciences, administration, and health promotion, education, and behavior)	16
Public Health Management	18
Public Health and Healthcare Policy	6
Practice Experience and Capstone Course	5

## Public Health Core Requirements (16 Hours)

Course	Title	Credits
PUBH 725	Quantitative Methods for Public Health Practice	5
PUBH 726	Qualitative Methods for Public Health Practice	3
PUBH 730	Public Health Systems, Policy, and Leadership	3
PUBH 735	Practical Applications of Public Health Planning	4
PUBH 678	Transforming Health Care for the Future	1
<b>Total Credit Hours</b>		<b>16</b>

## Public Health Management Requirements (18 Hours)

### Required Management Courses (12 Hours)

Course	Title	Credits
HSPM 712	Health Economics	3
HSPM 726	Applied Public Health Law for Administrators	3
HSPM 730	Financing of Health Care	3
HSPM 768	Health Services Administration II	3
<b>Total Credit Hours</b>		<b>12</b>

### Management Electives (6 Hours)

Course	Title	Credits
Select two courses in consultation with advisor; possible courses include the following:		6

HSPM 706	Health and Economic Development: Interrelationships among health, poverty and economic progress
HSPM 709	Perspectives in Rural Health
HSPM 713	Information Systems in Health Administration
HSPM 714	Perspectives in Community Health Organizations
HSPM 716	Quantitative Methods for Health Administration
HSPM 764	Long-Term Care Administration
HSPM 769	Organizational Behavior
HSPM 774	Quality Management in Healthcare
HSPM 776	Physician Practice Management
HSPM 772	International Health
HSPM 777	Healthcare Policy and Principles of Health Insurance

**Total Credit Hours** 6

### Public Health and Healthcare Policy Requirements (6 Hours)

Course	Title	Credits
HSPM 727	Advancing Public Health Policy	3
Select one Policy	Elective from the following:	3
HSPM 711	Health Politics	
HPEB 820	Public Health Advocacy and Policy	
POLI 774	The Public Policy Process	
POLI 780	Theories of Comparative Politics	
POLI 721	Race and Public Policy	
	Another course selected in consultation with advisor	

**Total Credit Hours** 6

### Practice Experience and Capstone Requirements (5 Hours)

Course	Title	Credits
HSPM 788	Public Health Practice Experience	3
HSPM 796	Health Services Policy and Management MPH Capstone Course	2

**Total Credit Hours** 5

### Final Examination

The final grant proposal and grant proposal presentation included in the HSPM MPH Capstone Course (HSPM 799) which is required for all HSPM MPH students will serve as the comprehensive final exam assessment for the HSPM MPH degree. The final grant proposal will be reviewed by at least two HSPM faculty members. The grant proposal presentations in face-to-face classes will be attended and reviewed by least two HSPM faculty members. Distance students' presentations will be recorded and reviewed by at least two HSPM faculty members. Faculty reviewers will be provided with a comprehensive assessment rubric which will identify the essential required elements for both the grant proposal and presentation.

### Graduate Assistantship

All full-time M.P.H. students are encouraged to work as graduate assistants in health service organizations in the community to acquire work experience and enrich the learning process through on-the-job application of concepts and techniques learned in the classroom. To

qualify for an assistantship, a student must be fully admitted to a degree program, be enrolled as a full-time student, and maintain a 3.00 GPA.

### Dual Degrees

The Department of Health Services Policy and Management and the College of Social Work, and Department of Political Science offer coordinated programs that lead to a dual degree. The requirements for the M.P.H. portion of each dual degree program are the same as shown above. The M.P.A. and M.S.W. portions of the dual degree programs are determined by the respective schools and college. Some courses do fulfill requirements for both portions of the dual degree. A dual degree program thus typically requires fewer semester hours in total than if the two programs were taken separately.

## Health Services Policy and Management, Ph.D.

The Ph.D. program prepares students to conduct health services research and to teach in a university setting. The program is individualized for each student, taking into account the individual's interests, academic training, and professional experience. The emphasis is on research methods, statistics, and advanced concepts in health policy and management. Students must complete a doctoral dissertation and demonstrate the ability to conduct original research.

### Learning Outcomes

- Students will understand health care policy development and implementation and its relationship to management of health care organizations. Students will demonstrate skills in analysis and interpretation of health services research data. Students will demonstrate the ability to conduct health services research and communicate the findings through professional written communications and oral presentations.

## Degree Requirements (60 Post-Baccalaureate Hours)

### Doctoral Seminar (4 Hours)

### Public Health Core Courses (6 Hours)

Course	Title	Credits
PUBH 700	Perspectives in Public Health	3
EPID 701	Concepts and Methods of Epidemiology	3
<b>Total Credit Hours</b>		<b>6</b>

### Advanced Topics in Health Policy and Management (6 Hours)

Course	Title	Credits
HSPM 845	Advanced Study in Health Policy Management I	3
HSPM 846	Advanced Topics in Health Policy and Management II	3

**Total Credit Hours** 6

### Research Methods Cognate (9 Hours)

Course	Title	Credits
HSPM 717	Health Services Research Methods I	3
HSPM 719	Health Services Research Methods II	3

HSPM 791	Selected Topics	1-6
<b>Total Credit Hours</b>		<b>7-12</b>

Note: All doctoral students are expected to complete courses on statistical software packages like STATA and SAS by the end of first year if not proficient in the use of the softwares. These hours can be counted towards electives.

## Health Services Policy and Management Concentration (9 Hours)

### Approved Electives (14 Hours)

### Dissertation (12 Hours)

### Examinations

The qualifying examination must be taken following the completion of course requirements listed under Advanced Topics in Health Policy and Management and Research Method Cognate. Qualifying examination is a cumulative exam that tests students on the content areas of five departmental courses in these two core areas. The examination will be given as two separate sections: (i) Research method and data and (ii) Health policy and management. The qualifying examination is offered twice per year, in late early spring (January) and early fall (August prior to start of classes).

A comprehensive examination is arranged in consultation with the major professor of the concentration area, Doctoral Program Director and the Graduate Director of the Department. Students must pass qualifying examination, complete all doctoral seminar and concentration area courses prior to taking the comprehensive examination. This examination has two components: a written component and an oral presentation component. The written component is a take-home examination in which the student is required to write an NIH R03 type proposal on a specific research topic.

#### Proposal and Dissertation defense:

Each student must prepare and defend a dissertation proposal consisting of minimum of three chapters describing importance of research topic chosen, literature review and methodology to be used.

Each student must prepare and defend a dissertation that contributes significantly to knowledge regarding the organization, financing, or delivery of health services.

## Degree Requirements (Minimum of 46 hours Post-Masters)

### Doctoral Seminar (4 Hours)

### Public Health Core Requirements (6 Hours)

If the graduate degree is not in public health

Course	Title	Credits
PUBH 700	Perspectives in Public Health	3
EPID 701	Concepts and Methods of Epidemiology ((or equivalent))	3
<b>Total Credit Hours</b>		<b>6</b>

## Advanced Topics in Health Policy and Management (6 Hours)

Course	Title	Credits
HSPM 845	Advanced Study in Health Policy Management I	3
HSPM 846	Advanced Topics in Health Policy and Management II	3

**Total Credit Hours** 6

## Research Methods Cognate (9 Hours)

Course	Title	Credits
HSPM 717	Health Services Research Methods I	3
HSPM 719	Health Services Research Methods II	3
HSPM 791	Selected Topics	1-6

**Total Credit Hours** 7-12

Note: All doctoral students are expected to complete courses on statistical software packages like STATA and SAS by the end of first year if not proficient in the use of the softwares. These hours can be counted towards electives.

## Health Services Policy and Management Concentration Area (9 Hours)

### Dissertation (12 Hours)

### Examinations

The qualifying examination must be taken following the completion of course requirements listed under Advanced Topics in Health Policy and Management and Research Method Cognate. Qualifying examination is a cumulative exam that tests students on the content areas of five departmental courses in these two core areas. The examination will be given as two separate sections: (i) Research method and data and (ii) Health policy and management. The qualifying examination is offered twice per year, in late early spring (January) and early fall (August prior to start of classes).

A comprehensive examination is arranged in consultation with the major professor of the concentration area, Doctoral Program Director and the Graduate Director of the Department. Students must pass qualifying examination, complete all doctoral seminar and concentration area courses prior to taking the comprehensive examination. This examination has two components: a written component and an oral presentation component. The written component is a take-home examination in which the student is required to write an NIH R03 type proposal on a specific research topic.

#### Proposal and Dissertation defense:

Each student must prepare and defend a dissertation proposal consisting of minimum of three chapters describing importance of research topic chosen, literature review and methodology to be used.

Each student must prepare and defend a dissertation that contributes significantly to knowledge regarding the organization, financing, or delivery of health services.

## Teaching Requirements

All doctoral students in the PhD program are required to participate in teaching activities of the department. The requirements must be completed between the time of matriculation and the dissertation

proposal. The requirements can be fulfilled by completing the following items:

- Teaching Assistant training course offered by Center for Teaching Excellence (CTE),
- Presenting at least once in the doctoral student seminar series arranged by the department

#### Research experience requirement

As part of research experience, all PhD students are required to:

- complete the CITI training;
- give at least one poster or oral presentation as the lead author at a state, regional, national, or international conference; or publish an article in a reputable peer-reviewed journal.

These requirements must be completed prior to dissertation defense.

## Public Health Programs (Division of Academic Affairs)

James Hardin, *Associate Dean for Faculty Affairs and Curriculum*

The Arnold School Division of Academic Affairs administers the Master of Public Health in General Public Health, the Doctor of Medicine/Master of Public Health degree program, and the Certificate of Graduate Study in Public Health. Committees for the above programs make decisions regarding policy, procedures, admission criteria, and other matters concerning program implementation. Additional information regarding the M.P.H. in General Public Health and the dual degree program organization and management is available in the program handbooks. Copies are available through the Division of Academic Affairs.

### Program Admission Requirements Public Health, Certificate

Applicants to the Certificate of Graduate Study in Public Health must have, at a minimum, a bachelor's degree. While students currently enrolled in master of public health degree programs are not eligible for the C.G.S.P.H. program, students working on other graduate degree programs are eligible.

Requirements include:

- baccalaureate degree from an accredited college or university with a minimum GPA of 3.00 on a 4.00 scale; baccalaureate degree transcripts required;
- completed University of South Carolina application form and fee;
- letter of intent describing your interest in the certificate and specific career goals;
- curriculum vitae/resume;
- two letters of recommendation.

### General Public Health, M.P.H.

Applicants for the Master of Public Health in General Public Health must meet the general requirements of the University of South Carolina Graduate School. MCAT, DAT, GRE, or other equivalent test scores are required for all applicants. Among those offered admission in 2009 and 2010, the average GRE verbal score was 495 and the average GRE quantitative score was 625; the average undergraduate GPA was 3.51. Successful applicants for this program are expected to have an academic

foundation in public health or health-related sciences, and substantive post-baccalaureate experience in clinical or public health settings.

International applicants to the Master of Public Health in General Public Health program are required to take the Graduate Record Examination (GRE) in order to meet admission requirements. Applicants whose native language is not English are also required to submit a satisfactory score on the TOEFL or the IELTS Intl. Academic Course Type 2 exam. The minimum acceptable score on the TOEFL is 80 (internet-based). The minimum acceptable overall band score on the IELTS Intl. Academic Course Type 2 exam is 6.5.

Applicants must include an official transcript from each school or college previously attended (all prior post-secondary school study must be represented). Transcripts from any non-U.S. institution will need to be verified by World Education Services (WES, <http://www.wes.org> or telephone: 212-219-7330). In addition, there must be at least three letters of recommendation and a detailed written statement indicating the applicant's area of interest and career goals, along with a current and complete resume.

Admissions process information and links can be found at the Arnold School of Public Health webpage: <http://www.sph.sc.edu/futurestudents/index.htm>. ([https://www.sc.edu/study/colleges\\_schools/public\\_health/](https://www.sc.edu/study/colleges_schools/public_health/)) Applications for the MPH program are made through the Schools of Public Health Application System (SOPHAS). Please go to <http://www.sophas.org> for further details. An applicant who has applied to the USC Preventive Medicine Residency program should apply through the Graduate School. All admissions applications are reviewed by a faculty committee representing the Departments of Environmental Health Sciences; Epidemiology and Biostatistics; Health Promotion, Education, and Behavior; and Health Services Policy and Management.

### General Public Health / Medicine, M.P.H. / M.D.

To be admitted to the Doctor of Medicine/Master of Public Health dual degree program, potential students must make application to and be accepted by both degree programs prior to matriculation. Therefore, applicants for the Doctor of Medicine/Master of Public Health must meet all entrance requirements for the Doctor of Medicine (M.D.) in either the USC School of Medicine or the Medical University of South Carolina College of Medicine and the Master of Public Health in General Public Health in the Arnold School of Public Health.

All academic requirements for the University of South Carolina Graduate School, School of Medicine, and the Arnold School of Public Health are applicable to students applying to the dual degree program. For admission requirements for the Doctor of Medicine degree program, please contact the USC School of Medicine. Degree requirements for the Master of Public Health in General Public Health are described above. Applicants to the dual degree program should submit an application for the M.P.H. to the Graduate School.

Any student holding the M.D. or M.P.H. in General Public Health degree is not eligible for admission to the dual degree program.

### General Public Health / Pharmacy, M.P.H. / Pharm.D.

To be admitted to the Doctor of Pharmacy/Master of Public Health dual degree program, potential students must make application to and be accepted by both degree programs. To be admitted to the M.P.H. program, applicants must either have a completed bachelors degree or have completed at least 90 hours in the Pharm.D. program. Degree requirements for the Master of Public Health in General Public Health are

described above. Applicants to the dual degree program should submit an application for the M.P.H. to the Graduate School.

Additional information can be found on the Graduate Dual Degree Programs (p. 463) page.

## Programs

- General Public Health, M.P.H. (p. 456)
- Public Health, Certificate (p. 457)

## Courses

### **PUBH 678 - Transforming Health Care for the Future (1 Credit)**

Foundation for beginning health professions students to gain an understanding of the complexities of the health care system through experiential activities conducted in interprofessional teams and the importance of interprofessional collaboration in order to improve the system.

**Cross-listed course:** SOWK 678

### **PUBH 700 - Perspectives in Public Health (3 Credits)**

Seminar-format orientation to history, mission, and core services and disciplines of public health to develop understanding of current public health practice and how many health-related disciplines contribute to achieving public health goals.

### **PUBH 710 - Ethics and the Health Sciences (1-4 Credits)**

Students are introduced to formal and informal codes of professional conduct of various health science disciplines and understand the implications of these distinctions for interdisciplinary research, clinical practice, and administration.

### **PUBH 725 - Quantitative Methods for Public Health Practice (5 Credits)**

Introduction to epidemiology and biostatistics and their application to public health issues and practice. Covers basic epidemiologic, biostatistical, and data management techniques used to analyze and interpret data in the field of public health.

### **PUBH 726 - Qualitative Methods for Public Health Practice (3 Credits)**

An introductory course on why, when, and how to apply qualitative data collection and analysis methods to public health activities with a focus on practice-based application. Identifying, working with, and communicating with a range of community stakeholders are also discussed.

### **PUBH 730 - Public Health Systems, Policy, and Leadership (3 Credits)**

A course on public health management and policy process and advocacy to develop effective public health leaders. Included is an emphasis on the relationships between people and their environment and the impact of the environment on human health and well-being.

**Prerequisites:** PUBH 725 and PUBH 726.

### **PUBH 735 - Practical Applications of Public Health Planning (4 Credits)**

A practical approach to planning public health programs through the application of planning frameworks and the exploration of fundamental issues in planning, implementing and evaluating programs in various settings addressing diverse populations and issues.

**Prerequisites:** PUBH 725 and PUBH 726.

### **PUBH 743 - Foundations of Health Disparities (3 Credits)**

Evolution of health disparities from historical, public, social, economic, and political perspectives.

### **PUBH 791 - Special Topics Public Health (1-3 Credits)**

The purpose of this course is to provide the student of public health a clear understanding of public health history as a key component of the environment in which the any health professional must function. The course content will begin in prehistory and have a worldwide perspective through the 1700s. It will then shift to the history of the United States. In the historical, social, economic, and political context that the US public health and health care systems evolved are lessons and understandings that are necessary for this generation of health administrators and health policy makers to advance health for all. The first part of the course will examine the impact of disease on world history through the 18th century. The second and third parts of the course will present, from a historical perspective, the evolution of public health and health care delivery in the United States.

### **PUBH 798 - Public Health Practice (1-6 Credits)**

Limited work experience or service project in an approved public health setting.

**Prerequisites:** BIOS 700 or BIOS 701 and EPID 700 or EPID 701.

### **PUBH 810 - Ethics in Public Health Research and Practice (1 Credit)**

Foundations of public health ethics with application to practice and to responsible conduct of research in public health disciplines. Enrollment restricted to Doctoral students & post-docs, master's students by permission of instructor.

## General Public Health, M.P.H.

**Please note that this program is not accepting applications at this time.**

The Master of Public Health in General Public Health degree provides students with the academic experiences to understand and appreciate the broad range of public health issues. Combined with understanding of the basic principles of public health, the student will develop a knowledge base and skill set across the public health disciplines.

## Learning Outcomes

- Students will demonstrate an understanding of a) fundamental principles and practices in health promotion, education, and behavior; b) organization, principles, and practices in health administration; c) principles and practices in epidemiology, and tools for translating epidemiological findings into public health action; d) public health statistical applications; and e) environmental health from the perspective of the earth as a complex, dynamic system.
- The student will demonstrate at least three of the following: a) the ability to evaluate a given health related problem, and to identify the most appropriate statistical technique for analysis; b) understanding of and ability to discuss specific applications of environmental health sciences; c) ability to apply descriptive and analytic epidemiology methods including approaches and study designs to identify and investigate factors associated with various health conditions; d) understanding of and ability to apply proven social science, health and behavior theories in the planning, implementation, and evaluation of health education and promotion programs; and e) ability to apply the principles of program planning, development, budgeting, management and evaluation to organizational and community initiatives.
- Students completing the MPH program will demonstrate integration of the MPH core competencies and an understanding of the philosophy of public health practice through the Public Health Practicum.



## Degree Requirements (42 Hours)

### Public Health Core Courses (15 Hours)

Course	Title	Credits
BIOS 700 or BIOS 701	Introduction to Biostatistics Concepts and Methods of Biostatistics	3
EPID 700 or EPID 701	Introduction to Epidemiology Concepts and Methods of Epidemiology	3
ENHS 660	Concepts of Environmental Health Science	3
HPEB 700	Concepts and Methods in Health Promotion	3
HSPM 700	Approaches and Concepts for Health Administration	3
<b>Total Credit Hours</b>		<b>15</b>

### Special Interest in Public Health (15 Hours)

Course	Title	Credits
Select 15 hours including courses in at least three public health core disciplines		15
<b>Total Credit Hours</b>		<b>15</b>

### Electives (6 Hours)

#### Comprehensive Examination

Oral exam at time of practicum presentation.

### Practicum in Public Health Discipline (6 Hours)

Course	Title	Credits
PUBH 798	Public Health Practice	6
<b>Total Credit Hours</b>		<b>6</b>

## Public Health, Certificate

The Arnold School of Public Health offers the 18-hour Certificate of Graduate Study in Public Health (C.G.S.P.H.) for those who are interested in public health but who are not interested in or whose career trajectories do not require an M.P.H. The purposes of the certificate are twofold: 1. The C.G.S.P.H. offers students working in other degree programs academic training in the fundamental concepts of public health. 2. The C.G.S.P.H. provides a life-long learning opportunity on the foundations of core public health concepts for practitioners who do not wish to seek a public health degree.

Earning the certificate involves a focused learning experience in the fundamentals of public health in which candidates must complete three fundamental courses of the core public health disciplines and three elective public health courses consistent with the student's background and interests.

## Learning Outcomes

- Students will demonstrate an understanding of at least three of the following areas: a) fundamental principles and practices in health promotion, education, and behavior; b) philosophy, principles, and practices in health services, policy, and management; c) principles and practices in epidemiology, and tools for translating epidemiological findings into public health action; d) public health statistical applications; and e) environmental health from the perspective of the earth as a complex, dynamic system.
- Each student will demonstrate competence in a chosen area of interest. The student can choose to complete the public health core

with one elective or to complete courses in a particular topical area (e.g., nutrition, health disparities, preparedness, evaluation, program planning, epidemiology).

## Certificate Requirements (18 Hours)

Requirements	Credit Hours
Public Health Core	9
Electives	9

# COLLEGE OF SOCIAL WORK

Department Website ([https://www.sc.edu/study/colleges\\_schools/socialwork/](https://www.sc.edu/study/colleges_schools/socialwork/))

Ronald Pitner, *Interim Dean*

Terry Wolfer, *Interim Associate Dean for Curriculum*

Kirk Foster, *Associate Dean for Diversity, Equity, & Inclusion*

Teri Browne, *Interim Associate Dean for Faculty and Research*

Melissa Freedman, *Assistant Dean for Curriculum and Assessment*

Sonya Singleton, *Assistant Dean for Students*

Rhonda DiNovo, *MSW Program Coordinator*

Melissa Reitmeier, *Director of Field Education*

Kristen Seay, *Interim Ph.D. Program Coordinator*

The College of Social Work has offered graduate professional education at the master's level at the University since 1969. The doctoral program admitted its first class in fall 1987. The college has offered its master's degree in Seoul, South Korea, since 1992. The Master of Social Work degree is accredited by the Commission on Accreditation of the Council on Social Work Education.

## Mission

To promote social well-being and social justice with vulnerable populations through dynamic teaching, research, and service conducted in collaboration with diverse people of South Carolina, the nation, and the international community.

## Vision

To become a leading institution for innovative, interdisciplinary approaches to educating social work practitioners and scholars, conducting research, and serving as a catalyst for positive social change.

## Goals

### Goal 1

The College prepares M.S.W. graduates to work effectively and ethically within public and private agencies, including interdisciplinary settings, where they will serve primarily those vulnerable populations who experience problems related to economic and social deprivation and the consequences of institutional discrimination and oppression.

The College also produces Ph.D. graduates who are able to perform all the role expectations of academicians within social work degree-granting colleges and universities. Graduates are effective in transdisciplinary, community-engaged social work research and education and possess a commitment and a capacity to meet University and community service expectations through both graduate and undergraduate courses.

The College prepares BSW graduates for ethical, competent, and culturally relevant generalist practice with individuals, families, groups, organizations, and communities. The College's social work minor prepares University undergraduate students from other academic programs for responsible citizenship by introducing them to social work as a means to helping people enhance their well-being.

### Goal 2

The College advances the knowledge base of the profession and translates research into practice in order to reduce poverty and oppression and promote social and economic justice in global society.

### Goal 3

The College provides faculty consultation and service to local, state, national and international organizations; student provision of services to consumers in supervised field agency settings; and leadership as a catalyst in positive social change.

## Drug and Addiction Studies, Certificate

### Introduction

The Graduate Certificate in Drug and Addiction Studies is a cross-disciplinary program offered by the College of Social Work for post baccalaureate students interested in advanced education in addictions.

The purpose of the program is to expand professional capacity in prevention, intervention, treatment, and recovery for individuals and families impacted by the disease of addiction.

### Learning Outcomes

- Students will be able to recognize the development and impact of addiction as being based in neurobiological, sociological, and psychological processes.
- Students will demonstrate knowledge in current, relevant evidence-based approaches in prevention, intervention, assessment, diagnosis, treatment, and recovery for substance use disorders and addictions.
- Students will be able to identify unique properties of various substances included in the DSM 5 classifications of substance-related disorders, including alcohol, caffeine, cannabis, hallucinogens, inhalants, opioids, sedatives, hypnotics, stimulants, tobacco, and other substances.
- Students will be able to accurately diagnose substance use disorders and describe how these disorders impact individuals, families and communities.
- Students will demonstrate knowledge of co-occurring disorders and risk and protective factors for special at-risk populations, including but not limited to, adolescents, women, veterans, ethnic groups, older adults, and the LGBTQIA+ community.

### Admissions Criteria

It is each applicant's responsibility to ensure that all required application materials are received. Applicants should list the Graduate Certificate in Drug and Addiction Studies on the application under degree pursued. The program accepts applications on a rolling basis.

### Currently Enrolled Students in the Master of Social Work Program

Students in good academic standing may request concurrent enrollment. Interested students must contact the program coordinator to review the application process.

### Other Applicants

Applicants must follow the Application Requirements listed in the Degree-Seeking Admissions (<https://academicbulletins.sc.edu/graduate/policies-regulations/graduate-admissions/degree-seeking-admissions/>) page in the Graduate Bulletin.

## Certificate Requirements (18 Hours)

### Required Course (6 Hours)

Course	Title	Credits
SOWK 758	Family Dynamics and Substance Abuse	3
SOWK 752	Social Work Intervention in Substance Abuse	3
<b>Total Credit Hours</b>		<b>6</b>

### Select Two of the Following Courses (6 Hours)

Course	Title	Credits
Select two of the following:		
SOWK 730	Trauma-informed Social Work Practice	3
SOWK 731	Motivational Interviewing for Social Work Practice	3
SOWK 751	Youth and Substance Use	3
SOWK 760	Psychopathology and Psychodiagnostics for Social Work Practice with Adults and Older Adults	3
NPSY 760	Addictions Rehabilitation	3
NPSY 761	Dual Diagnosis	3
HPEB 742	Alcohol, Drugs, and Public Health Policy	3
HPEB 540	Drug Prevention	3
HPEB 542	Tobacco Prevention and Control in Public Health	3
PSYC 503	Psychology of Drug Use and Effects	3

### Electives (6 Hours)

Select six credit hours of electives approved by the program coordinator.

Note: Courses taken as part of another graduate degree program may, if appropriate, be applied to the certificate program. The Graduate Certificate in Drug and Addiction Studies is awarded upon completion of the student's approved program of courses.

## Social and Behavioral Health with Military Members, Veterans, and Military Families, Certificate

### Introduction

The Graduate Certificate for Social and Behavioral Health with Military Members, Veterans and Military Families is administered by the College of Social Work. It provides MSW students with specific knowledge and skills necessary to interact in military and community settings where the needs of veterans and their families are met. The program is designed to develop competency in knowledge about the military and military culture, understand the signature injuries associated with different military conflicts and those associated with military life, and understand intervention and rehabilitation strategies that are effective when working with this diverse population.

### Learning Outcomes

- Students will have knowledge about military culture, values of duty, courage, and selflessness associated with military service.
- Students will understand the impact of resilience on soldiers and families. Students will be demonstrate their understanding of the connection between resilience and prevention of combat related problems such as PTSD.

- Students will demonstrate knowledge of the differential impacts of military service for unique military populations.

## Admissions Criteria

It is each applicant's responsibility to ensure that all required application materials are received. Applicants should list the Graduate Certificate for Social and Behavioral Health with Military Members, Veterans and Military Families on the application under degree pursued. The program accepts applications on a rolling basis.

## Currently Enrolled Students in the Master of Social Work Program

Students in good academic standing may request concurrent enrollment. Interested students must contact the program coordinator to review the application process.

## Other Applicants

Applicants must follow the Application Requirements listed in the Degree-Seeking Admissions (<https://academicbulletins.sc.edu/graduate/policies-regulations/graduate-admissions/degree-seeking-admissions/>) page in the Graduate Bulletin.

## Certificate Requirements (18 Hours)

The Certificate requires 18 credit hours of coursework. Four courses are required and two are electives chosen based on the student's personal interests. These electives can be taken within the College of Social Work, or may be taken in other university units as approved by the Program Director.

### Required Courses (12 Hours)

Course	Title	Credits
SOWK 737	Overview of Social Work Practice with the Military, Veterans, and their Families	3
SOWK 738	Military Mental Health and the Impact of Trauma	3
SOWK 739	Intervention Strategies in Military Behavioral Health	3
SOWK 758	Family Dynamics and Substance Abuse	3
<b>Total Credit Hours</b>		<b>12</b>

### Electives (6 Hours)

Select 6 credit hours of electives approved by the program coordinator.

Note: Courses taken as part of another graduate degree program may, if appropriate, be applied to the certificate program. The Certificate of Social and Behavioral Health with Military Members, Veterans and Military Families is awarded upon completion of the student's approved program of courses.

## Social Work, MSW

### Mission

The College of Social Work MSW Program prepares graduates to become advanced practitioners who serve diverse communities in South Carolina and beyond through specialized practice competencies in one or more of the following areas: Children, Youth, and Families; Health and Mental Health; and/or Community, Social, and Economic Development. The MSW Program will provide students essential knowledge, skills, and values to

practice effectively, ethically, and collaboratively to promote social well-being and social justice for vulnerable populations.

## Program Goals and Learning Outcomes

### Goal 1

The program produces Master's-level social workers who provide competent and ethical practice with, and on behalf of, diverse and vulnerable populations.

- Learning Outcome 1: Apply social work ethical principles to guide professional practice (2.1.2)<sup>1</sup>
- Learning Outcome 2: Engage diversity and difference in practice (2.1.4)
- Learning Outcome 3: Engage, assess, intervene, and evaluate with individuals, families, groups, organizations, and communities (2.1.10)

### Goal 2

The program produces Master's-level social workers who demonstrate a strong professional identity and ability to advance human rights and social and economic justice.

- Learning Outcome 4: Engage in policy practice to advance social and economic well-being and to deliver effective social work services (2.1.8)
- Learning Outcome 5: Identify as a professional social worker and conduct oneself accordingly (2.1.1)
- Learning Outcome 6: Advance human rights and social and economic justice (2.1.5)

### Goal 3

The program produces Master's-level social workers whose professional judgment demonstrates an understanding that person-in-environment perspective requires a critical analysis of practice contexts and research findings.

- Learning Outcome 7: Apply critical thinking to inform and communicate professional judgments (2.1.3)
- Learning Outcome 8: Engage in research-informed practice and practice-informed research (2.1.6)
- Learning Outcome 9: Apply knowledge of human behavior and the social environment (HBSE) (2.1.7)
- Learning Outcome 10: Respond to contexts that shape practice (2.1.9)

<sup>1</sup> Numbers refer to the CSWE's 2008 Educational Policy and Accreditation Standards (EPAS) Core Competencies.

## Admission

The admission policy for the M.S.W. degree program applies to every applicant. All applicants must fulfill the general admission requirements of both The Graduate School and the College of Social Work. Applicants must be recommended to The Graduate School for acceptance by the MSW Program. Acceptance by The Graduate School and the M.S.W. Program is based on the evaluation of an applicant's total academic profile. The M.S.W. Program is committed to diversity in its student body. Admission is limited and competitive. Admission to the College of Social Work is contingent upon admission to The Graduate School. (p. 705)

## Deadlines

- The deadline for Advanced Standing Program admissions is March 1. Classes begin in the summer.
- The deadline for Full-time and Part-time Program admissions is April 1. Classes begin in the fall.

## Minimal requirements for admission include:

- A bachelor's degree from an accredited institution.
  - Applicants to the Advanced Standing program option must have earned a bachelor's degree in social work from a Council on Social Work Education (CSWE)-accredited institution within the last 5 years.
- A cumulative undergraduate GPA of 3.00 (on a 4.00 scale).
  - Applicants to the Advanced Standing program option must have also earned a B or better GPA in the last 60 credit hours of an accredited bachelor's degree and a B or better in all required undergraduate social work classes.
- Official transcripts of all college and university credits earned
- Autobiographical statement stating the applicant's desire to enter the degree program and outlining long-term professional goals, motivation and capacity to work with people.
- At least two letters of recommendation should come from individuals who can address characteristics such as maturity, self-discipline, commitment, cooperativeness and professionalism. The M.S.W. program requires letters be written by individuals who can attest to an applicant's potential for graduate study and social work practice (e.g., professor, supervisor or community leader). Letters from those an applicant has a personal relationship with (e.g., relative, friend or neighbor) will not be adequate.
  - Applicants to the Advanced Standing program option are required to submit three letters of recommendation. Of the three letters of recommendation, one must be from the B.S.W. program director or faculty advisor recommending readiness for Advanced Standing and one be must from the undergraduate field supervisor or current social work supervisor if employed.
- A current CV or resume that demonstrates evidence of service and/or work experiences congruent with social work values, skills, and knowledge.

Note: An interview may also be required.

Applicants to the Advanced Standing program option should be aware that meeting the minimal requirements does not guarantee admission to this program option.

## Transfer of Course Credit

The MSW Program follows the Transfer of Course Credit (p. 696) policy in the Graduate Academic Regulations Bulletin (p. 696). Students may request transfer of graduate course credits from other programs accredited by the Council on Social Work Education.

## Credit for Life Experience

In accordance with the mandates of the Council on Social Work Education, no credit is given for life experiences. Students will not receive academic credit for life experience or previous volunteer, service learning activities or assignments, or work experience in social work.

Academic credit will not be granted for life experience or previous work experience, and such experience will not be substituted for any of the courses in the professional foundation areas or the field practicum.

## Degree Requirements (42-60 Hours)

### The College of Social Work Offers Five Master of Social Work Degree Pathways

1. Full-time in Columbia - 60 hours over two years.
2. Advanced Standing in Columbia - 42 hours over 11 months.
3. Part-time program in Columbia - 60 hours over three years.
4. Part-time program in Charleston or Greenville with one specialization - 60 hours over three years.
5. Part-time program in Korea with one specialization - 60 hours

### MSW Students Must Select One of the Following Specialization Options in the Advanced Year

1. Community, Social, and Economic Development
2. Health and Mental Health
3. Children, Youth, and Families

### Foundation Year (30 Hours)

Full-time and Part-time Students must successfully complete the following courses in order to move to the Advanced Year:

Course	Title	Credits
SOWK 712	Human Behavior and the Social Environment I	3
SOWK 714	Diversity and Social Justice Issues for Social Work Practice	3
SOWK 716	Human Behavior and the Social Environment II	3
SOWK 722	Social Work Practice with Individuals, Families and Small Groups	3
SOWK 732	Social Work Practice with Organizations and Communities	3
SOWK 742	Social Welfare Policy Analysis	3
SOWK 777	Advanced Theory for Social Work Practice <sup>1</sup>	3
SOWK 781	Field Instruction I: Generalist Social Work Practice	3
SOWK 782	Field Instruction II: Generalist Social Work Practice	3
SOWK 791	Social Work Research Methodologies	3
<b>Total Credit Hours</b>		<b>30</b>

<sup>1</sup> While SOWK 777 is considered to be an Advanced Year course, it is offered during the Foundation Year.

### Advanced Standing Bridge Term (12 Hours)

Advanced Standing Students must successfully complete the following courses in order to move to the Advanced Year:

Course	Title	Credits
SOWK 701	Professional Development Bridge	3
SOWK 702	Writing for Professional Social Work Practice <sup>1</sup>	3
SOWK 777	Advanced Theory for Social Work Practice	3
Select an elective course		3
<b>Total Credit Hours</b>		<b>12</b>

<sup>1</sup> If a student successfully completes the online Professional Writing Skills Assessment as part of the application to the MSW Program, they are not required to take SOWK 702. Rather, they are required to take an elective course.

### Advanced Year (30 Hours)

Full-time, Part-time, and Advanced Standing students must successfully complete the following courses:

Course	Title	Credits
SOWK 718	Systems Analysis of Social Work Practice	3
SOWK 778	Advanced Analysis of Social Policy, Programs, and Services	3
SOWK 779	Advanced Social Work Interventions	3
SOWK 783	Field Instruction III: Advanced Social Work Practice	3
SOWK 784	Field Instruction IV: Advanced Social Work Practice	3
SOWK 792 or SOWK 793	Evaluation of Social Work Practice Evaluation of Social Work Programs	3

Select 12 hours of Electives (of which at least 3 credits must be face-to-face Practice Elective hours)

**Total Credit Hours** **30**

## Social Work, Ph.D.

The PhD Program in the College of Social Work develops scholars who generate and disseminate new knowledge to drive social change and create a more equitable, just, and inclusive society. Our graduates are:

- Emerging experts in a self-determined specialized substantive area, making unique contributions to knowledge advancement in the pursuit of social change.
- Skilled in diverse theoretical and methodological approaches, with deep expertise for pursuing the scientific exploration of their specialized substantive area.
- Equipped with the knowledge, skills, and experience to teach the next generation of social work practitioners and scholars
- Productive scholars, with records of scholarly publications, national presentations, and applications for independent research funding.

The degree requires 52 hours of post-masters course work, including 12 hours of dissertation preparation. Students must earn a grade of "B" or better in all required courses. In addition to meeting university and program requirements, all doctoral students' programs of study are subject to approval by the student's advisory committee and the College's PhD Program Coordinator. The following are also required: an oral examination, a comprehensive examination, and a defense of the dissertation.

## Learning Outcomes

- Students will demonstrate capacity to use empirical and theoretical knowledge across disciplines to analyze human behavior that is relevant to social work and social welfare.
- Students will apply appropriately a range of methods in the design and implementation of community-engaged social and behavioral research.
- Students will demonstrate the ability to define appropriate research questions that are theoretically based.
- Students will demonstrate knowledge and skills in curriculum development, course planning, classroom management and principles of professional education.
- Students will demonstrate knowledge and skills in pedagogy.

- Students will demonstrate knowledge and skills in communicating and disseminating knowledge distinct from university teaching.

## Course of Study

The PhD program in social work is designed so that students can complete course requirements in two to three years. Students must enroll full-time during the first calendar year in residence.

The foreign language requirement (or its statistics or computer equivalent) may be met at any time during the student's course of study, but not less than 60 days prior to the date at which the student expects to receive the degree. Academic regulations are consistent with those that apply to other doctoral programs within The Graduate School.

## Admission-to-Candidacy Examinations

Following successful completion of required course work, the student will take a qualifying examination in order to be admitted to candidacy. Examinations typically will take place after the second year of course work. While not course specific, the examination will require the student to demonstrate competence in the integration and application of content drawn from courses.

## Dissertation

Within seven years following successful completion of the comprehensive examination, the student must present a dissertation based on research that has been approved by a committee of professors in the major field and by the dean of The Graduate School. The dissertation must be successfully defended before an examining committee appointed by the dean of the college and approved by the dean of The Graduate School. The examining committee will consist of at least four members, one of whom must be from a department or college other than Social Work.

## Admission

Admissions requirements are consistent with those of The Graduate School and include:

- a completed application;
- transcripts from all post-secondary schools previously attended, including non-degree courses taken;
- a master's degree in social work from a CSWE accredited graduate program (a master's degree in a related field may be considered on a case-by-case basis);
- a grade point average of 3.5 or above for graduate-level work;
- evidence of scholarly potential as indicated by three letters of reference;
- a detailed personal statement;
- submission of GRE general scores or Miller Analogies Test scores;
- a sample of the applicant's scholarly writing;
- satisfactory score on TOEFL or IELTS for international applicants for whom English is not their primary language. (<https://academicbulletins.sc.edu/graduate/policies-regulations/graduate-admissions/degree-seeking-admissions/#text>)

## Degree Requirements (52 Post-Masters Hours)

### Intellectual Foundations of Social Welfare and Social Work Core (9 Hours)

Course	Title	Credits
SOWK 800	Intellectual Foundations of Social Welfare and Social Work I: Historical Roots	3
SOWK 801	Intellectual Foundations of Social Welfare and Social Work II: Modern Developments	3
SOWK 802	Intellectual Foundations of Social Welfare and Social Work III: Conceptual Model-Building	3
<b>Total Credit Hours</b>		<b>9</b>

### Research Methods Core (12 Hours)

Course	Title	Credits
SOWK 892	Design and Critical Analysis of Social Work Research	3
SOWK 890	Analysis of Social Work Data	3
SOWK 891	Advanced Analysis of Social Work Data	3
SOWK 811	Qualitative Methods of Inquiry for Social Work Research	3
<b>Total Credit Hours</b>		<b>12</b>

### Professional Seminar (2 Hours)

Course	Title	Credits
SOWK 850	Social Work Doctoral Professional Seminar	1-2
<b>Total Credit Hours</b>		<b>1-2</b>

### Planning and Design of Dissertation Research (2 Hours)

Course	Title	Credits
SOWK 894	Planning and Design of Dissertation Research (repeatable)	1
<b>Total Credit Hours</b>		<b>1</b>

### Other Course Requirements (27 Hours)

Course	Title	Credits
	Substantive electives outside of the college	6
	Advanced research methods electives	6
	Other elective	3
SOWK 872	Social Work Education Practicum	0
SOWK 889	Doctoral Social Work Practicum	0
SOWK 899	Dissertation Preparation	12
<b>Total Credit Hours</b>		<b>27</b>

Total (52 Hours)

# GRADUATE COMBINATION, DUAL-DEGREE AND JOINT DEGREE PROGRAMS

## Combination Degree Programs

A combination degree is a situation where the same institution awards more than one degree from an overlapping course of study. Combination degrees often allow a shorter time for completion due to the “double-counting” of some coursework.

- Accelerated Master of Business Administration (A.M.B.A.) / J.D.
- Accountancy / Law, M.A.C.C. / J.D.
- Biomedical Sciences / Medicine, Ph.D. / M.D. (Medical Scientist Training Program)
- Business Administration / English, M.S. / M.A.
- Criminology and Criminal Justice / Law, M.A. / J.D.
- Earth and Environmental Resources Management / Law, M.E.E.R.M. / J.D.
- Economics / Law, M.A. / J.D.
- English / Library and Information, M.A. / M.L.I.S.
- Epidemiology / Environmental Health Sciences, Ph.D. / Ph.D.
- General Public Health / Medicine, M.P.H. / M.D.
- General Public Health / Pharmacy, M.P.H. / Pharm.D.
- Health Services Policy and Management / Law, M.H.A. / J.D.
- Human Resources / Law M.H.R. / J.D.
- International Business / ESCP Paris Master of Management, M.I.B. / M.I.M.
- International Business / Koc University Master of International Management, M.I.B. / M.I.M.
- International Business / Law, I.M.B.A. / J.D.
- Journalism and Mass Communications / Law, M.M.C. / J.D.
- Public Administration / Law, M.P.A. / J.D.
- Public Administration / Social Work, M.P.A. / M.S.W.
- Public History / Library and Information Science, M.A. / M.L.I.S.
- Social Work / Health Promotion, Education, and Behavior, M.S.W. / M.P.H.
- Social Work / Health Service Policy and Management, M.S.W. / M.P.H.
- Social Work / Law, M.S.W. / J.D.

## Dual-Degree Programs

A dual-degree (or a dual academic award) is one whereby students study at two or more institutions, and each institution awards a separate program completion credential bearing only its own name, seal, and signature.

- Environmental Law and Policy / Law, M.E.L.P. / J.D. (Dual Degree Program with the Vermont Law School)
- International Business / Shanghai Jiao Tong University Master of International Business, M.I.B./M.I.B.
- International Business / Tec de Monterrey Master of International Business, M.I.B. / M.I.B.
- International Business / Università Bocconi Master of International Management, M.I.B. / M.I.M.

- International Business / University of Mannheim, M.I.B. / Mannheim Master of Management
- Sport and Entertainment Management with National Taiwan Normal University, Ph.D.
- International Hospitality and Tourism Management with National Taiwan Normal University, Sport, Leisure and Hospitality Mgmt with focus on Sport Mgmt M.H.I.T.M. / M.S.
- Sport and Entertainment Management with National Taiwan Normal University, Sport, Leisure and Hospitality Mgmt with focus on Sport Mgmt M.S.E.M. / M.S.
- Business Administration / Management with EMLYON Ph.D. / Ph.D.

## Joint Degree Programs

A joint degree program (or joint academic award) is one whereby students study at two or more institutions and are awarded a single program completion credential bearing the names, seals, and signatures of each of the participating institutions.

- M.E.d. Educational Technology with UofSC Aiken
- Ph.D. Pharmaceutical Sciences with MUSC
- M.S.E.M. Sport and Entertainment Management with Qatar (pending approval)
- M.S. Exercise Science with Qatar

## Accelerated Master of Business Administration (A.M.B.A.) / J.D.

The Darla Moore School of Business in cooperation with the University of South Carolina School of Law offers a combined degree program that permits a student to obtain the J.D. and Accelerated Master of Business Administration (A.M.B.A.) degrees in approximately three and one-half years. Through the combined program, the total course load may be reduced from that required if the two degrees were earned separately since 9 hours of electives toward the J.D. may be earned in the business administration program, and vice versa.

Students in the AMBA/JD program must take 9 credit hours of electives in the Moore School. An additional 9 credit hours in the School of Law will be used to satisfy the 18 elective credit hours required for the AMBA degree. All of these elective courses must be included in the AMBA program of study. Students must supply the AMBA office with a letter from the law school registrar stating the Law School's approval of participation in the dual degree.

Prior to obtaining admission to the combined degree program, a student must be admitted to both the School of Law and the Moore School of Business.

## Accountancy / Law, M.A.C.C. / J.D.

The Moore School of Business in cooperation with the University of South Carolina School of Law offers a combined degree program that permits a student to obtain the J.D. and Master of Accountancy (M.A.C.C.) degrees in approximately four years.

## Degree Requirements M.A.C.C. (30 Hours) / J.D. (90 Hours)

Through the combined program, the total course load may be reduced from that required if the two degrees were earned separately since 9 hours of electives toward the J.D. may be earned in the business

administration program. Students in the M.A.C.C. program may use up to 9 hours of law course credit as electives. Prior to obtaining admission to the combined degree program, a student must be admitted to both the School of Law and the Moore School of Business.

## **Biomedical Sciences / Medicine, Ph.D. / M.D. (Medical Scientist Training Program)**

### **Degree Requirements Ph.D. (62 Hours) / M.D. (161 Hours)**

The School of Medicine is dedicated to the goals of preparing students in the art and science of medicine and providing students with a background for further postgraduate training in a variety of fields of medicine. The curriculum is designed to promote professional growth and a compassionate response to patients' needs, to assist students in understanding the complexity of patient care, and to provide students with a perspective on the role of medicine in society.

The seven-year MD-PhD curriculum consists of basic science courses and clerkships in applied clinical medicine, together with three years of laboratory research. All students are required to complete a specific set of courses during the seven years. Elective opportunities are presented throughout the curriculum to assist students in pursuing their individual interests and career goals.

For more information visit: <http://pathmicro.med.sc.edu/graduate/md-phd.htm>

## **Business Administration / English, M.S. / M.A.**

### **Degree Requirements (51 Hours)**

This is a 51-hour program leading to an M.A. in English and M.S. in Business Administration. Interested students will normally be expected to have met the following requirements: 24 hours of successfully completed English courses beyond the lower-division level and/or completion of the major or cognate in business administration, satisfactory scores on the GRE subject test in English and the GMAT examination for business administration, and a personal interview or letter explaining why the student wishes to enroll in the program. Admission is only to the joint program; neither degree will be awarded separately.

## **Business Administration/ Management, Ph.D. (Dual Degree Program with EMYLON)**

This is a dual degree PhD program between the University of South Carolina, Darla Moore School of Business and EMLYON Business School. EMLYON is a highly regarded business school in Europe and is accredited by AACSB, EQUIS, and AMBA. The program structure leverages distinct research and scholarly capabilities of each institution.

The program is designed as a dual degree whereby students pursue degrees at both institutions. Each institution confers its own degree for work done to meet the graduation standards of the doctoral program of that institution. The program will give selected students from

both institutions the opportunity to acquire the Ph.D. in Business Administration from USC and the Ph.D. in Management from EMLYON.

Dual degree students must meet all eligibility requirements for admission to each doctoral program. Each institution will be the sole judge of whether a student has completed the requirement for the degree that it awards. The intended length of study for the dual degree program is four years (60 credit hours). Dual degree students will spend their first two semesters at EMLYON taking foundational courses. They will then spend three semesters at USC taking specialized courses in international business. Dual degree students are required to complete at least 30 hours of credit while enrolled at South Carolina. Up to twelve hours of academic credit from EMLYON may be accepted and applied toward the South Carolina Ph.D. degree requirements. Faculty from both institutions will supervise the dissertation.

## **Criminology and Criminal Justice / Law, M.A. / J.D.**

### **Admission**

Prior to obtaining admission to the combined degree program, a student must be admitted to both the School of Law and the Department of Criminology and Criminal Justice. Upon admission to the combined degree program, the student will be assigned courses to be elected in both programs.

### **Degree Requirements M.A. (30 Hours) / J.D. (90 Hours)**

The Department of Criminology and Criminal Justice, in cooperation with the University of South Carolina School of Law, offers a combined degree program which permits a student to obtain both the Juris Doctor and the Master of Arts in Criminal Justice degrees in approximately four years. Through the combined program, the total course load may be reduced by as many as 15 credit hours from that required if the two degrees were earned separately, since 6 hours of electives toward the M.A. degree may be taken in law courses and 9 hours of electives toward the J.D. may be earned in the M.A. program.

## **Earth and Environmental Resources Management / Law, M.E.E.R.M. / J.D.**

### **Admission**

The combined J.D./M.E.E.R.M. program requires that students be accepted independently into each of the programs, that the students begin their first year with courses exclusively in the School of Law, and that the remaining years be divided between the two programs. Upon acceptance by both programs, students must complete a dual degree form. Acceptance into one program does not affect the decision of the other school with regards to admission. Upon admission to the dual degree program, the student must select electives from an approved list of courses.

### **Degree Requirements M.E.E.R.M. (36 Hours) / J.D. (90 Hours)**

The Environment and Sustainability Program in cooperation with the USC School of Law and The Graduate School offers a dual degree program. The dual degree program, the Master of Earth and Environmental



Resources Management (M.E.E.R.M.) and law degree (J.D.), permits students to complete the joint program in approximately four years. Through the combined program, the total course load may be reduced by as many as 18 credit hours from that required if the two degrees were earned separately, since up to 9 hours of electives toward the M.E.E.R.M. degree may be taken in approved law courses and 9 hours of electives toward the J.D. may be earned in the M.E.E.R.M. program.

## Economics / Law, M.A. / J.D.

The Department of Economics, in cooperation with the University of South Carolina School of Law, offers a combined degree program that permits a student to obtain both the Juris Doctor and the Master of Arts in Economics degree in approximately four years.

## Degree Requirements M.A. (30 Hours) / J.D. (90 Hours)

Through the combined program the total course load may be reduced by as many as 18 credit hours from that required if the two degrees were earned separately. The student must meet admission requirements, and satisfy degree requirements, of both degree programs.

## English / Library and Information, M.A. / M.L.I.S.

The joint master's program in English and library and information science prepares students for careers as subject specialists in academic or public libraries. Subject specialists typically work in such areas as collection development, reference, and bibliographic instruction.

## Admission Criteria

Persons applying to the joint master's program in English and library and information science must meet the admissions requirements of both the Department of English and the School of Library and Information Science.

## Degree Requirements M.A. (28 Hours) / M.L.I.S. (27 Hours)

The joint master's program is a 55-hour program leading to an M.A. in English and a Master of Library and Information Science. It is administered by a joint committee, which recommends students for admission and approves their programs. Admission is only to the joint program. Neither degree will be awarded separately. If students wish to change from the joint program to the regular degree program in English or library and information science, they must reapply to the particular program they wish to enter.

## M.A. in English (28 Hours)

Course	Title	Credits
<b>Introductory Course</b>		
ENGL 700	Introduction to Graduate Study of English	3
Select one course from each of five course groups:		15
Medieval and Renaissance-Nondramatic		
Drama		
British Literature		
American Literature Before 1900		
20th-Century Literature		
Select one course in an allied field <sup>1</sup>		3

Select two Elective Courses	6	
<b>Thesis</b>		
ENGL 799	Thesis Preparation	1
Select a reading knowledge of one foreign language		
<b>Total Credit Hours</b>	<b>28</b>	

- <sup>1</sup> For example:
- ENGL 776
  - ENGL 870
  - ENGL 871
  - ENGL 782
  - HIST 790

## M.L.I.S. (27 Hours)

Course	Title	Credits
SLIS 701	Ethics, Values, and Foundational Principles of Library and Information Science Professions	3
SLIS 702	Community Engagement and Service	3
SLIS 703	Reference and Instruction	3
SLIS 704	Leadership in Information Organizations	3
SLIS 705	Research Design and Evaluation	3
SLIS 706	Information Organization and Access	3
Select Library and Information Science Electives		9
<b>Total Credit Hours</b>	<b>27</b>	

## Environmental Law and Policy / Law, M.E.L.P. / J.D. (Dual Degree Program with the Vermont Law School)

### Accreditation

The University of South Carolina is accredited by the Southern Association of Colleges and Schools' Commission on Colleges to award Juris Doctor degrees. Because of its geographic location, Vermont Law School is accredited by a different body, and has no relationship with the Commission on Colleges. Both law schools are fully accredited by the American Bar Association. The Southern Association of Colleges and Schools' Commission on Colleges accreditation of the University of South Carolina does not extend to or include the Vermont Law School or its students. Although the University of South Carolina has faculty-approved regulations and accepts certain course work in transfer toward a credential from Vermont Law School, or collaborates in other ways for generation of course credits or program credentials, other colleges and universities may or may not accept this work in transfer, even if it appears on a transcript from the University of South Carolina. Such a decision would be made by the institution subsequently considering the possibility of accepting such credits.

## Admission and Degree Requirements M.E.L.P. (30) / J.D. (90)

Application deadline is January 21, 2011. Applications will be available Fall 2010.

Students in the program may earn both degrees by completing 90 hours of J.D. study and 30 hours of M.E.L.P. study. Up to 9 hours of law study at

South Carolina may be applied toward the M.E.L.P. degree and 9 hours of graduate study at Vermont may be applied toward the J.D. degree.

1. Students who enter the program must:
  - a. Be admitted to Vermont Law School's Master of Environmental Law and Policy (M.E.L.P.) Program.
  - b. Be admitted to the University of South Carolina (USC) School of Law.  
(a & b mean that the student must meet all entrance requirements of each school and be accepted as a student therein.)
  - c. Be admitted to the Dual Degree Program. Admission to the dual degree program must be made by application to both programs and both programs must approve the student's admission to the dual degree program.
  - d. Each program shall maintain appropriate records on each student in the program.
2. The program is prospective in operation.
  - a. Those students already holding a M.E.L.P. degree or a law degree will not be eligible for admission to the program.
  - b. Students currently enrolled in either school may enter the program and appropriate credit will be granted by both schools with due care exercised to effect the transition to insure the closest compliance with these regulations as the individual situation of each student permits.
3. Students will often complete the dual degree program in three years (including full-time summer study). Students shall begin the program by completing the first full year in USC's School of Law. At the end of that year, a student will enroll in the 1-credit USC course entitled Introductory Environmental Law and Policy. A student will thereafter enroll in Vermont M.E.L.P. courses via summer school, distance learning, and internships. A minimum of six (6) M.E.L.P. credits through distance learning must be earned during the course of the second and third years of study at USC's School of Law. The entire program for both degrees must be completed within a period of five academic years unless substantial reasons acceptable to the Joint Committee are given. In such event, each case will be judged on its individual merits and decisions in the case of other students will not serve as precedent.
4. Students must maintain the academic requirements presently in effect or as may be placed in effect to remain in the program.
  - a. Failure to maintain the requisite academic standing requirements of either school will preclude the student's continuation in the program in the semester he or she becomes ineligible.
  - b. The student may continue to complete the degree requirements in the school whose academic standing he or she has met.
  - c. A student dropped from the program for academic deficiency may not re-enter.
5.
  - a. The University of South Carolina School of Law will grant up to 9 hours credit toward the J.D. degree for work completed on the Vermont Law School campus toward the M.E.L.P. Degree with a minimum grade of C. The student must take the course for a letter grade if the course is offered on this basis. A grade of C or better shall be recorded on the student's USC transcript as a pass. No degree credit will be granted by the School of Law when the candidate earns a grade of less than C in the Vermont Law School course. Several courses published in the M.E.L.P. Program may be excluded as courses available for credit in the M.E.L.P.-J.D. dual degree program. These courses duplicate courses taught through the University of South Carolina's School of the Environment. This will be handled on a case-by-case basis as the program progresses.
  - b. Vermont Law School will grant up to 9 hours of credit toward the M.E.L.P. degree for specified course work completed in the USC School of Law. No credit will be granted when a candidate earns less than a C grade in the School of Law. All Graduate School academic requirements will be applicable to students participating in the Dual Degree Program.  
VLS will award credit toward the M.E.L.P. degree for up to nine hours earned in the following School of Law courses: LAWS 731, LAWS 651, LAWS 709  
It may be possible to earn M.E.L.P. credit through other USC School of Law courses, as approved by the Joint Committee on a case-by-case basis.
6. Students enrolled in this program must take the one-credit LAWS 816, Introductory Environmental Law and Policy, at the end of their first year.
7. Students enrolled in this program must have completed the requirements for both degrees to come within the provisions of paragraph 5.
8. The School of Law will assign a P, F, or W grade as may be appropriate for purposes of determining the Law School G.P.R. with respect to non-Law School courses taken in the M.E.L.P. Program.
  - a. The Joint Committee assigned to administer the program will take appropriate action to insure that each school is notified of the grades earned so that the proper entries are made on the student's record.
  - b. The Joint Committee will adopt any forms necessary to carry out the objectives of this program.
9. The Joint Committee shall consist of one or two designees from Vermont Law School appointed by the Director of the Vermont Law School Environmental Law Center, one or two faculty members from the USC Law School appointed by the Dean of the Law School, and the USC Law School Associate Dean for Academics. They shall each endorse all applications to the J.D.-M.E.L.P. program and take all necessary administrative action to insure that the purposes, spirit, and intent of the program are fulfilled.  
The student may not take courses for credit under the dual degree program in one program where there is substantial duplication of material with a course which the student has taken in the other program.
  - a. The Committee shall decide all questions of duplication or preemption of courses the student desires to take. It is understood that each committee member will confer with the member of his or her faculty whose course or seminar the student desires to take for credit in this program where it appears that there is substantial duplication of material or preemption of the course by a similar course in the other program.
  - b. If the Joint Committee shall be in disagreement with regard to the duplication of material or preemption then each shall confer as follows:
    - i. Vermont Law School's representative(s) of the Joint Committee shall confer with and abide by the decision reached by the Director of the Environmental Law Center.
    - ii. The USC School of Law's representative(s) on the Joint Committee shall confer with and abide by the decision reached by the Curriculum Committee of the School of Law.
    - iii. Each member of the Joint Committee shall be permitted to present and discuss the matter on which there is disagreement with the Committee of each program.

- iv. In the event a student is aggrieved by a decision of the Joint Committee denying him or her permission to take a course in either program he or she desires to take under this Dual Degree Program, the student may appeal the decision to the Committee of the school in which he or she seeks to undertake such work.
10. The Joint Committee shall make every effort to accommodate the needs of the student consistent with the aims and objectives of the program. The Committee members shall counsel with the student, recommend alternative courses and otherwise assist him or her in furthering his or her career objectives through the Dual Degree Program.
11. A Program of Study shall be approved by the Joint Committee prior to attending the Summer Session at Vermont Law School. Each student must submit his or her proposed schedule to the Joint Committee in sufficient time prior to registration to permit the Joint Committee to act on it. Therefore, students in the program should confer with the Joint Committee at regular and frequent intervals when schedules become available.
12. The Joint Committee may make other such regulations concerning matters not contained herein which have not been anticipated and which are in keeping with the objectives of the program and the desires of both faculties, keeping always in mind the wishes of the student and his or her career objectives.
13. Any student withdrawing from one of the programs in the Dual Degree Program will be required to satisfy all of the requirements of the degree program in which he or she retains candidacy.
14. Enrollment in the J.D.-M.E.L.P. Dual Degree Program will not preclude simultaneous enrollment in the J.D.-M.E.E.R.M. Dual Degree Program.
15. The University of South Carolina is accredited by the Southern Association of Colleges and Schools' Commission on Colleges to award Juris Doctor degrees. Because of its geographic location, Vermont Law School is accredited by a different body, and has no relationship with the Commission on Colleges. Both law schools are fully accredited by the American Bar Association. The Southern Association of Colleges and Schools' Commission on Colleges accreditation of the University of South Carolina does not extend to or include the Vermont Law School or its students. Although the University of South Carolina has faculty-approved regulations and accepts certain course work in transfer toward a credential from Vermont Law School, or collaborates in other ways for generation of course credits or program credentials, other colleges and universities may or may not accept this work in transfer, even if it appears on a transcript from the University of South Carolina. Such a decision would be made by the institution subsequently considering the possibility of accepting such credits.

## Epidemiology / Environmental Health Sciences, Ph.D. / Ph.D.

The Department of Epidemiology and Biostatistics and the Department of Environmental Health Sciences jointly offer a dual Ph.D. in Environmental Health Sciences and Epidemiology. Epidemiology is a core discipline in public health and represents the methodologic basis for investigating the distribution and determinants of health outcomes. Environmental health sciences, another core discipline of public health, represents a major area of research and practice in measurement of environmental factors and their impact on health outcomes. The dual Ph.D. in epidemiology and environmental health equips the student to function more effectively at the intersection of these two related but distinct disciplines, with a

deeper and broader understanding of the intricate relationships between human health and the environment.

## Degree Requirements Epidemiology (54 Hours) / (Environmental Health Sciences (45 Hours)

The dual Ph.D. requires course work in epidemiology and environmental health sciences selected by the student in consultation with a joint epidemiology/environmental health sciences advisory committee, and successful completion of dissertation research on a topic spanning both disciplines. Detailed program requirements are available upon request.

## General Public Health / Medicine, M.P.H. / M.D.

**Please note that this program is not accepting applications at this time.**

The M.P.H./M.D. degree is designed for future physicians who want to prepare for meeting the challenges of managed care practicing evidence-based medicine, ensuring effective preventive medicine for their patients, and administering medical offices and/or community, state, and federal health organizations. Students in the dual degree program must complete the total program in six academic years.

The M.P.H./M.D. dual degree student completes the M.D. degree at either the USC School of Medicine or the MUSC College of Medicine.

## Degree Requirements

**M.P.H. (42 Hours) / USC School of Medicine, M.D. (161 Hours)**

**M.P.H. (42 Hours) / MUSC College of Medicine, M.D. (227.5 Hours)**

**M.P.H. Program Requirements (42 Hours)**

**Public Health Core Courses (15 Hours)**

Course	Title	Credits
BIOS 700	Introduction to Biostatistics	3
or BIOS 701	Concepts and Methods of Biostatistics	
EPID 700	Introduction to Epidemiology	3
or EPID 701	Concepts and Methods of Epidemiology	
ENHS 660	Concepts of Environmental Health Science	3
HPEB 700	Concepts and Methods in Health Promotion	3
HSPM 700	Approaches and Concepts for Health Administration	3

**Total Credit Hours** 15

**Special Interest in Public Health (15 Hours)**

Course	Title	Credits
Select 15 hours including courses in at least three public health core disciplines		15

**Total Credit Hours** 15

**Electives (6 Hours)**<sup>1</sup>

<sup>1</sup> With program approval, up to nine (9) hours of M.P.H. credit including no more than three (3) hours substituting for PUBH 798 can be received for specific components of medical education curriculum.

**Comprehensive Examination**

Oral exam at time of practicum presentation

**Practicum in Public Health Discipline (6 Hours)**

Course	Title	Credits
PUBH 798	Public Health Practice	6
<b>Total Credit Hours</b>		<b>6</b>

**Requirements for the M.D. Degree**

See the UofSC School of Medicine Academic Bulletin for more information.

**General Public Health / Pharmacy, M.P.H. / Pharm.D.**

Please note that this program is not accepting applications at this time.

PharmD/MPH dual programs address the need for pharmacist who understand public health principles as well as direct patient care activities. The dual degree is considered desirable for persons seeking careers in local, state, and national agencies. Additionally, this dual degree option presents opportunities for individuals to excel professionally in practice settings such as hospitals and health systems, managed-care, community health settings, and county and state health agencies.

The PharmD degree currently requires a total of 8 elective course credit hours in the professional program curriculum. The South Carolina College of Pharmacy (SCCP) curriculum committee has approved the acceptance of any Master of Public Health courses (core or elective) for any or all of the 8 hours of required electives for the PharmD degree.

The Masters of Public Health (General) program requires a total of 42 credit hours, of which 15 hours are core courses, 15 hours are special interest in Public Health courses, 6 hours are electives, and 6 hours are practicum in a Public Health discipline. The Arnold School of Public Health curriculum committee has approved a total of 6 elective course hours from select SCCP courses that can be applied towards electives in the MPH program.

**The Current Approved List of SCCP Courses That May Count for MPH Elective Credit Include**

- PHMY 650
- PHMY 680
- PHMY 774
- PHMY 779
- PHMY 780
- PHMY 850
- PHMY 880

In addition, PharmD students may be able to obtain 3 credit hours toward the 6 hours required for PUBH 798. Credit will be granted if the student completes an advanced pharmacy practice experiential rotation (during the 4th professional year of the PharmD program) in an approved public health discipline site (examples may include but would not be limited to: AHEC, DHEC, Indian Health Services, and other Public Health service entities).

**Health Services Policy and Management / Law, M.H.A. / J.D. Degree Requirements M.H.A. (58 Hours) / J.D. (90 Hours)**

The Department of Health Services Policy and Management and the School of Law offer a coordinated program that leads to a dual degree. Some courses do fulfill requirements for both portions of the dual degree. A dual degree program thus typically requires fewer semester hours in total than if the two programs were taken separately.

**Health Services Policy and Management / Public Administration, M.P.H. / M.P.A.**

The Department of Health Services Policy and Management in the Arnold School of Public Health and Department of Political Science in the College of Arts and Sciences offer a coordinated program that leads to the Master of Public Health (MPH) in Health Services Policy and Management and the Master of Public Administration (MPA). Some courses fulfill requirements for both portions of the dual degree. Through academic advisement, specific courses are chosen for each individual student to satisfy both sets of program requirements. The MPA requires 18 credit hours in core courses completed in the first year of study; the MPH has 16 hours of required sequenced core courses completed in the second year of study.

**Requirements**

Two courses (6 credit hours) from the MPA can be applied to the MPH program of study. POLI 774 satisfies the HSPM Policy Elective Requirement and POLI 775 satisfies the required HSPM Management Course HSPM 730.

Completion of HSPM 788 satisfies the MPA internship requirement. One HSPM Management Elective (3 credit hours) approved by the advisor can be applied to the MPA program of study. Thus the 39 credit hours required for the MPA and 45 credit hours required for the MPH can both be completed with a total of 72 credit hours.

The table below reflects the plan of study for a full-time student who begins the dual degree program with the MPA. This plan may be adjusted in consultation with HSPM and POLI advisors.

Course	Title	Credit Hours
<b>First Year</b>		
<b>Fall</b>		
POLI 770	Perspectives on Public Administration	3
POLI 771	Public Data Analysis	3
POLI 773	Human Resources Administration in Government	3
POLI Elective <sup>1</sup>		3
<b>Credit Hours</b>		<b>12</b>
<b>Spring</b>		
POLI 774	The Public Policy Process	3
POLI 775	Financial Administration	3

POLI 754	Public Accountability and Ethics	3
POLI Elective <sup>1</sup>		3
<b>Credit Hours</b>		<b>12</b>
<b>Second Year</b>		
<b>Fall</b>		
PUBH 725	Quantitative Methods for Public Health Practice	5
PUBH 726	Qualitative Methods for Public Health Practice	3
HSPM 726	Applied Public Health Law for Administrators	3
HSPM Management Elective <sup>1</sup>		3
<b>Credit Hours</b>		<b>14</b>
<b>Spring</b>		
PUBH 735	Practical Applications of Public Health Planning	4
PUBH 730	Public Health Systems, Policy, and Leadership	3
HSPM 712	Health Economics	3
HSPM Management Elective <sup>1</sup>		3
<b>Credit Hours</b>		<b>13</b>
<b>Third Year</b>		
<b>Fall</b>		
HSPM 727	Advancing Public Health Policy	3
HSPM 768	Health Services Administration II	3
POLI Elective <sup>1</sup>		3
POLI Elective <sup>1</sup>		3
<b>Credit Hours</b>		<b>12</b>
<b>Spring</b>		
POLI 753	Capstone Seminar in Public Administration	3
HSPM 788	Public Health Practice Experience <sup>2</sup>	3
HSPM 796	Health Services Policy and Management MPH Capstone Course	2
PUBH 678	Transforming Health Care for the Future	1
<b>Credit Hours</b>		<b>9</b>
<b>Total Credit Hours</b>		<b>72</b>

<sup>1</sup> Students may elect to take these courses during summer sessions to meet curriculum requirements.

<sup>2</sup> HSPM 788 requires coordination with an MPA advisor to meet the MPA internship requirements.

## Human Resources / Law M.H.R. / J.D.

The Moore School of Business in cooperation with the University of South Carolina School of Law offers a combined degree program that permits a student to obtain the J.D. and Master of Human Resources (M.H.R.) degrees in approximately four years.

### Degree Requirements M.H.R. (45 Hours) / J.D. (90 Hours)

Through the combined program, the total course load may be reduced from that required if the two degrees were earned separately since 9 hours of electives toward the J.D. may be earned in the business administration program. Students in the M.H.R./J.D. program may use up to 12 hours of employment-related law courses from the law school to fulfill requirements within the M.H.R. program. Prior to obtaining

admission to the combined degree program, a student must be admitted to both the School of Law and the Moore School of Business.

## International Business / ESCP Paris Master of Management, M.I.B / M.I.M.

### International Business / Koc University Master of International Management, M.I.B. / M.I.M.

### International Business / Law, I.M.B.A. / J.D.

The Moore School of Business in cooperation with the University of South Carolina School of Law offers a combined degree program that permits a student to obtain the J.D. and International Master of Business Administration (I.M.B.A.) degrees in approximately four years. Through the combined program, the total course load may be reduced from that required if the two degrees were earned separately since 9 hours of electives toward the J.D. may be earned in the business administration program.

Students in the I.M.B.A./J.D. program must take 9 credit hours of electives in the Moore School. An additional 12 credit hours in the School of Law will be used to satisfy the 21 elective credit hours required for the I.M.B.A. degree. All of these elective courses must be included in the I.M.B.A. program of study. Upon approval of the graduate director and dean of The Graduate School, business-related law school electives may be substituted for Moore School electives. Such substitution is permissible only if the business-related electives are not counting toward the J.D. degree. Students must supply the I.M.B.A. office with a letter from the law school registrar stating that any substitute business-related law school electives are not also being used to satisfy the J.D. degree.

Prior to obtaining admission to the combined degree program, a student must be admitted to both the School of Law and the Moore School of Business.

### Degree Requirements I.M.B.A. (68 Hours) / J.D. (90 Hours)

Students in the I.M.B.A./J.D. program must take 9 credit hours of electives in the Moore School. An additional 12 credit hours in the School of Law will be used to satisfy the 21 elective credit hours required for the I.M.B.A. degree. All of these elective courses must be included in the I.M.B.A. program of study. Upon approval of the graduate director and dean of The Graduate School, business-related law school electives may be substituted for Moore School electives. Such substitution is permissible only if the business-related law school electives are not counting toward the J.D. degree. Students must supply the I.M.B.A. office with a letter from the law school registrar stating that any substitute business-related law school electives are not also being used to satisfy the J.D. degree.

## International Business / Shanghai Jiao Tong University Master of International Business, M.I.B./M.I.B.

## International Business / Tec de Monterrey Master of International Business, M.I.B. / M.I.B.

## International Business / University of Mannheim, M.I.B. / Mannheim Master of Management

## International Business / Università Bocconi Master of International Management, M.I.B. / M.I.M.

## International Business/Aalto University, M.I.B/M.Sc.

### Admission

Candidates who do not hold a degree from a U.S. institution, or have not graduated from a program with English as the instructional language, must submit a valid (two years old or less) test score demonstrating their command of the English language. The minimum score for the Test of English as a Foreign Language (TOEFL) is 90 (Internet-based) and 6.5 for the International English Language Testing System (IELTS) prior to beginning the program at South Carolina.

Candidates must meet the admission criteria of both institutions to complete the double degree course of study.

### Sharing Credits

Each institution will determine if, and the amount of, credit hours or ETCS that may be transferred towards its degree. Recognition of coursework will be based on the transcripts of records provided by each partner institution. Students are required to sign a transcript release form as part of their participation in the program, allowing the Registrar to release their transcripts.

### Core Courses (15 hours)

Course	Title	Credits
IBUS 704	Comparative Corporate Governance	3
IBUS 705	Global Business Management	3
IBUS 706	Nations States, Regional Networks and Global Markets	3
IBUS 734	International Business Negotiations	3
POLI 710	Introduction to International Relations	3
<b>Total Credit Hours</b>		<b>15</b>

### Electives (15 hours)

Course	Title	Credits
	International Business Electives	6
	International Affairs Electives	9
<b>Total Credit Hours</b>		<b>15</b>

## International Hospitality and Tourism Management/ Master of Sport, Leisure and Hospitality Management with National Taiwan Normal University, M.I.H.T.M./ M.S. in S.L.H.M.

### Degree Requirements (36 Hours)

#### Required Courses (15 Hours)

Course	Title	Credits
HRSM 788	Business Analytics in Hospitality, Retail, and Sport Management	3
HRTM 720	Hospitality Finance Methods	3
HRTM 730	Strategic Leadership in the Hospitality Industry	3
HRTM 750	Hospitality Marketing and Social Media	3
STAT 600	Statistics for Applied Management	3
<b>Total Credit Hours</b>		<b>15</b>

### Concentration in Hotel, Restaurant, and Tourism Management (HRTM) (15 Hours)

Course	Title	Credits
HRTM 521	Revenue Management in the Hospitality Industry	3
HRTM 564	Advanced Meeting Management	3
HRTM 590	Special Topics in HRTM	3
HRTM 768	Contemporary Problems in the Lodging Industry	3
<b>Cognates</b>		
HRTM 584	Tourism Information Technology Issues	3
<b>Total Credit Hours</b>		<b>15</b>

### Thesis (6 Hours)

Course	Title	Credits
HRTM 799	Thesis Preparation	6
<b>Total Credit Hours</b>		<b>6</b>

## Journalism and Mass Communications / Law, M.M.C. / J.D.

The School of Journalism and Mass Communications in cooperation with the University of South Carolina School of Law offers a combined degree program that permits a student to obtain the J.D. and Master of Mass Communications (M.M.C.) degrees in approximately four years. Through the combined program, the total course load may be reduced from that required if the two degrees were earned separately since 9 hours of electives towards the J.D. may be earned in the Mass Communication program. Students in the M.M.C. program may use up to 9 hours of law

course credit as electives. Prior to obtaining permission to the combined degree program, a student must be admitted to both the School of Law and the School of Journalism and Mass Communication.

## Degree Requirements M.M.C. (36 Hours) / J.D. (90 Hours)

### Masters of Mass Communications Integrated Communications Area of Emphasis

Course	Title	Credit Hours
<b>First Year</b>		
<b>Fall</b>		
LAWS 524		3
LAWS 505		3
LAWS 510		3
LAWS 530		3
LAWS 537		1
LAWS 535		2
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
LAWS 525		3
LAWS 545		3
LAWS 506		3
LAWS 511		3
LAWS 531		3
LAWS 536		1
<b>Credit Hours</b>		<b>16</b>
<b>Summer</b>		
Clerkship		
Option to enroll in graduate-level courses in the School of Journalism and Mass Communications		
<b>Credit Hours</b>		<b>0</b>
<b>Second Year</b>		
<b>Fall</b>		
JOUR 706	Media Law	3
Four additional courses selected from the Law School		12
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
Five courses selected from the Law School		15
<b>Credit Hours</b>		<b>15</b>
<b>Summer</b>		
Option to enroll in graduate-level courses in the School of Journalism and Mass Communications and/or Camp Carolina and/or clerkship		
<b>Credit Hours</b>		<b>0</b>
<b>Third Year</b>		
<b>Fall</b>		
JOUR 701	Research Methods in Mass Communication	3
MKTG 701	Marketing Management	3
JOUR 705	Strategic Communications Principles	3
JOUR 762	Issues in Mass Communication Management	3
<b>Credit Hours</b>		<b>12</b>

### Spring

JOUR 715	Strategic Communications Strategies	3
JOUR 771	Media Economics	3
JOUR 531 or JOUR 517	Public Relations Campaigns or Integrated Campaigns	3
JOUR 533 or JOUR 530	Public Relations Management or Creative Leadership	3
<b>Credit Hours</b>		<b>12</b>

### Summer

JOUR 777	Practicum in Mass Communications Management	3
<b>Credit Hours</b>		<b>3</b>

### Fourth Year

<b>Fall</b>		
Four courses selected from the Law School		15
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
Four courses selected from the Law School		15
<b>Credit Hours</b>		<b>15</b>
<b>Total Credit Hours</b>		<b>118</b>

### Masters of Mass Communications General Area of Emphasis

Course	Title	Credit Hours
<b>First Year</b>		
<b>Fall</b>		
LAWS 524		3
LAWS 505		3
LAWS 510		3
LAWS 530		3
LAWS 537		1
LAWS 535		2
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
LAWS 525		3
LAWS 545		3
LAWS 506		3
LAWS 511		3
LAWS 531		3
LAWS 536		1
<b>Credit Hours</b>		<b>16</b>
<b>Summer</b>		
Clerkship		
Option to enroll in graduate-level courses in the School of Journalism and Mass Communications		
<b>Credit Hours</b>		<b>0</b>
<b>Second Year</b>		
<b>Fall</b>		
JOUR 706	Media Law	3
Four additional courses selected from the Law School		12
<b>Credit Hours</b>		<b>15</b>

**Spring**

Five courses selected from the Law School	15
<b>Credit Hours</b>	<b>15</b>

**Summer**

Option to enroll in graduate-level courses in the School of Journalism and Mass Communications and/or Camp Carolina and/or clerkship	0
<b>Credit Hours</b>	<b>0</b>

**Third Year****Fall**

JOUR 701	Research Methods in Mass Communication	3
JOUR 762	Issues in Mass Communication Management	3
JOUR 705	Strategic Communications Principles	3
MGMT 770 or MKTG 701	Competing Through People or Marketing Management	3
<b>Credit Hours</b>		<b>12</b>

**Spring**

Senior Semester		
Select one of the following:		
MGMT 718	Management of Human Resources	3
JOUR elective (can be satisfied through law school)		
<b>Credit Hours</b>		<b>3</b>

**Summer**

JOUR 777	Practicum in Mass Communications Management	3
<b>Credit Hours</b>		<b>3</b>

**Fourth Year****Fall**

Four courses selected from the Law School	12	
MGMT 770 or MKTG 701	Competing Through People or Marketing Management	3
<b>Credit Hours</b>	<b>15</b>	

**Spring**

Four courses selected from the Law School	12	
Select one of the following:		
MGMT 718	Management of Human Resources	3
JOUR elective (can be satisfied through law school)		
<b>Credit Hours</b>	<b>15</b>	
<b>Total Credit Hours</b>	<b>109</b>	

Note: Three courses (9 hours) may count for dual credit. Therefore, a student enrolled in the dual program will have a Program of Study for the School of Law showing a total of 91 credit hours, and a Program of Study for the School of Journalism and Mass Communications showing a total of 36 credit hours.

## Public Administration / Law, M.P.A. / J.D.

### Degree Requirements M.P.A. (39 Hours) / J.D. (90 Hours)

This degree program is offered in cooperation with the School of Law. It allows M.P.A. and J.D. students to receive "dual credit" for 21 semester

hours of course work and acquire both a J.D. and a M.P.A. degree with fewer total credit hours than it would take to receive each degree independently. To be eligible, students must apply to, and be accepted by, both programs.

## Public Administration / Social Work, M.P.A. / M.S.W.

### Admissions

The College of Social Work ([http://www.sc.edu/study/colleges\\_schools/socialwork/](http://www.sc.edu/study/colleges_schools/socialwork/)) and the Master of Public Administration program ([http://sc.edu/study/colleges\\_schools/artsandsciences/political\\_science/study/graduate/masters/](http://sc.edu/study/colleges_schools/artsandsciences/political_science/study/graduate/masters/)) in the Department of Political Science ([http://sc.edu/study/colleges\\_schools/artsandsciences/political\\_science/](http://sc.edu/study/colleges_schools/artsandsciences/political_science/)), participate in a dual degree program that allows individuals to complete both the Master of Social Work and Master of Public Administration degrees in less time than if the degrees are completed separately.

Students apply to the dual degree program option through the USC Graduate School (<http://www.gradschool.sc.edu/prospective/apply-grad.asp?page=apply>). Application reviews, including required supplemental application materials required by the programs, and admission recommendations are made independently by the College of Social Work and by the Department of Political Science. Official notification of the admission decisions comes from the Graduate School.

Students enrolled in both Master of Social Work and Master of Public Administration courses in any term may be subject to fees for both programs.

Students enrolled in either the social work or public administration program beyond their first year of graduate study cannot apply for the dual degree program. Part-time social work or public administration students may enroll in the dual degree program. Advanced-standing social work students enrolled beyond the summer bridge term cannot apply for the dual degree program.

### Degree Requirements M.P.A. (39 Hours) / M.S.W. (60 Hours)

Students may complete the dual degree program by starting in either the Master of Social Work program or the Master of Public Administration program. Each program offers a typical sequence of courses; through academic advisement with a dual degree coordinator in each program, students select specific courses to satisfy the requirements for each degree. All curriculum and hour requirements must be satisfied in order to graduate from the dual degree program. Students in the dual degree program must complete the program within six academic years. See the Social Work, MSW (p. 459) and the Public Administration, M.P.A. (p. 119) bulletin entries or student handbook for additional information.

Two (2) SOWK elective courses can be satisfied by successfully completing POLI 770 and POLI 774 (6 credit hours total). SOWK 732 and SOWK 784 (6 credit hours total) may satisfy the MPA requirements.

SOWK 784 requires coordination and contract with a MPA advisor to meet the terms of the internship. Thus the 60-credit hour MSW degree and 39-credit hour MPA degree can both be completed with a total of 87 credit hours.

The table below reflects the plan of study for a full-time student who begins the dual degree program in social work. Note that some of the



courses beyond the first year of MPA and SOWK studies may be adjusted due to program or accreditation changes.

Course	Title	Credit Hours
<b>First Year</b>		
<b>Fall</b>		
SOWK 712	Human Behavior and the Social Environment I	3
SOWK 714	Diversity and Social Justice Issues for Social Work Practice	3
SOWK 716	Human Behavior and the Social Environment II	3
SOWK 781	Field Instruction I: Generalist Social Work Practice	3
SOWK 791	Social Work Research Methodologies	3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
SOWK 722	Social Work Practice with Individuals, Families and Small Groups	3
SOWK 732	Social Work Practice with Organizations and Communities (shared course)	3
SOWK 742	Social Welfare Policy Analysis	3
SOWK 777	Advanced Theory for Social Work Practice	3
SOWK 782	Field Instruction II: Generalist Social Work Practice	3
<b>Credit Hours</b>		<b>15</b>
<b>Second Year</b>		
<b>Fall</b>		
POLI 770	Perspectives on Public Administration	3
POLI 773	Human Resources Administration in Government	3
POLI 771	Public Data Analysis	3
MPA Elective		3
<b>Credit Hours</b>		<b>12</b>
<b>Spring</b>		
POLI 774	The Public Policy Process	3
POLI 754	Public Accountability and Ethics	3
POLI 775	Financial Administration	3
MPA Elective		3
<b>Credit Hours</b>		<b>12</b>
<b>Third Year</b>		
<b>Fall</b>		
SOWK 779	Advanced Social Work Interventions	3
SOWK 783	Field Instruction III: Advanced Social Work Practice	3
SOWK 793	Evaluation of Social Work Programs	3
MPA Elective <sup>1</sup>		3
MPA Elective <sup>1</sup>		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
SOWK 718	Systems Analysis of Social Work Practice	3
SOWK 778	Advanced Analysis of Social Policy, Programs, and Services	3
SOWK 784	Field Instruction IV: Advanced Social Work Practice (shared course) <sup>2</sup>	3

SOWK Elective course		3
SOWK Elective course		3
POLI 753	Capstone Seminar in Public Administration	3
<b>Credit Hours</b>		<b>18</b>
<b>Total Credit Hours</b>		<b>87</b>

<sup>1</sup> Students may elect to take these courses during summer sessions in order to meet curriculum requirements upon approval of the dual degree coordinator in each program.

<sup>2</sup> SOWK 784 requires coordination and contract with the MPA advisor to meet the internship requirement of the MPA program.

## Public History / Library and Information Science, M.A. / M.L.I.S.

One of only a few such programs in the United States, the joint master's program in public history and library and information science has been designed to prepare students for careers in historic agency administration, archives, records management, and library administration in such areas as manuscripts, rare books, government information, and reference.

### Admissions

Persons applying to the joint master's program in public history and library and information science must meet the entrance requirements of both the Department of History and the School of Library and Information Studies. Note: The Department of History admits students only once a year, for the spring semester; contact the Department of History for details.

### Degree Requirements M.A. (30 Hours) / M.L.I.S. (30 Hours)

Students earn both the Master of Arts in Public History and the Master of Library and Information Science upon successful completion of 60 hours of course work consisting of 30 hours in each area (earning both degrees separately would require 72 hours of graduate credit).

### Courses Required for the Library and Information Science, M.L.I.S.

Course	Title	Credits
SLIS 701	Ethics, Values, and Foundational Principles of Library and Information Science Professions	3
SLIS 705	Research Design and Evaluation	3
SLIS 797	Selected Topics in Librarianship and Information Services	1-3
Select three hours of elective specialization courses		3
Select three hours of internship in libraries, archives, museums, records management settings, or historical agencies		3
<b>Total Credit Hours</b>		<b>13-15</b>

### Courses Required for the Public History, M.A.

Course	Title	Credits
<b>Foundation Courses</b>		
Historical research methods		21
Archival administration		
Historical editing		

History of historical writing

Two courses and a research seminar in the student's minor field of study

**Elective Specialization Courses** 6

**Thesis**

**Oral Comprehensive Examination**

**Portfolio**

**Total Credit Hours** 27

## Social Work / Health Promotion, Education, and Behavior, M.S.W. / M.P.H.

### Admissions

The College of Social Work ([http://www.sc.edu/study/colleges\\_schools/socialwork/](http://www.sc.edu/study/colleges_schools/socialwork/)) and the Department of Health Promotion, Education, and Behavior (HPEB) ([http://www.sc.edu/study/colleges\\_schools/public\\_health/study/areas\\_of\\_study/health\\_promotion\\_education\\_and\\_behavior/](http://www.sc.edu/study/colleges_schools/public_health/study/areas_of_study/health_promotion_education_and_behavior/)) in the Arnold School of Public Health ([http://www.sc.edu/study/colleges\\_schools/public\\_health/](http://www.sc.edu/study/colleges_schools/public_health/)), participate in a dual degree program that allows individuals to complete both the Social Work, MSW (p. 459) and Master of Public Health degrees in less time than if the degrees are completed separately. Students apply to the dual degree program option through the USC Graduate School (<http://www.gradschool.sc.edu/prospective/apply-grad.asp>). Application reviews, including required supplemental application materials required by the programs, and admission recommendations are made independently by the College of Social Work and by the Arnold School of Public Health. Official notification of the admission decisions comes from the Graduate School.

Students enrolled in both Master of Social Work and Master of Public Health courses in any term may be subject to fees for both programs.

Students enrolled in either the social work or public health program beyond their first year of graduate study cannot apply for the dual degree program. Part-time social work students may enroll in the dual degree program. Advanced Standing social work students enrolled beyond the summer bridge term cannot apply for the dual degree program. Students in the Online Master of Public Health (MPH) in Health Promotion, Education, and Behavior - Professional Program are not eligible for the dual MSW/MPH program.

### Degree Requirements M.S.W. (60 Hours) / M.P.H. (45 Hours)

Students may complete the dual degree program by starting in either the Master of Social Work program or the Master of Public Health program.

Each program offers a typical sequence of courses; through academic advisement with a dual degree coordinator in each program, students select specific courses to satisfy the requirements for each degree. All curriculum and hour requirements must be satisfied in order to graduate from the dual degree program. Students in the dual degree program must complete the program within six academic years. See the MSW bulletin and the MPH student handbook for additional information.

Two (2) SOWK elective courses can be satisfied by successfully completing two HPEB elective courses (6 credit hours total). SOWK 783 and SOWK 784 (6 credit hours total) satisfy the HPEB 797 requirement. The Fieldwork courses require coordination and contract with a HPEB

advisor to meet the terms of the MPH Applied Practice Experience. Thus the 60-credit hour MSW degree and 45-credit hour MPH degree can both be completed with a total of 93 credit hours.

The table below reflects the plan of study for a full-time student who begins the dual degree program in social work. Note that some of the courses beyond the first year of MPH and SOWK studies may be adjusted due to program or accreditation changes.

Course	Title	Credit Hours
<b>First Year</b>		
<b>Fall</b>		
SOWK 712	Human Behavior and the Social Environment I	3
SOWK 714	Diversity and Social Justice Issues for Social Work Practice	3
SOWK 716	Human Behavior and the Social Environment II	3
SOWK 781	Field Instruction I: Generalist Social Work Practice	3
SOWK 791	Social Work Research Methodologies	3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
SOWK 722	Social Work Practice with Individuals, Families and Small Groups	3
SOWK 732	Social Work Practice with Organizations and Communities	3
SOWK 742	Social Welfare Policy Analysis	3
SOWK 777	Advanced Theory for Social Work Practice	3
SOWK 782	Field Instruction II: Generalist Social Work Practice	3
<b>Credit Hours</b>		<b>15</b>
<b>Second Year</b>		
<b>Fall</b>		
PUBH 725	Quantitative Methods for Public Health Practice	5
PUBH 726	Qualitative Methods for Public Health Practice	3
HPEB 701	Theoretical Foundations of Health Promotion	3
HPEB Elective course <sup>1</sup>		3
HPEB Elective course (shared course) <sup>1</sup>		3
<b>Credit Hours</b>		<b>17</b>
<b>Spring</b>		
PUBH 735	Practical Applications of Public Health Planning	4
PUBH 730	Public Health Systems, Policy, and Leadership	3
PUBH 678	Transforming Health Care for the Future	1
HPEB 707	Health Promotion Research Methods	3
HPEB Elective course <sup>1</sup>		3
HPEB Elective course (shared course) <sup>1</sup>		3
<b>Credit Hours</b>		<b>17</b>
<b>Third Year</b>		
<b>Fall</b>		
SOWK 779	Advanced Social Work Interventions	3
SOWK 783	Field Instruction III: Advanced Social Work Practice (shared course) <sup>2</sup>	3
SOWK 793	Evaluation of Social Work Programs	3

HPEB 748	Community Health Development	3
HPEB 710	Evaluation of Health Promotion Programs	3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
SOWK 718	Systems Analysis of Social Work Practice	3
SOWK 778	Advanced Analysis of Social Policy, Programs, and Services	3
SOWK 784	Field Instruction IV: Advanced Social Work Practice (shared course) <sup>2</sup>	3
SOWK Elective course		3
SOWK Elective course		3
<b>Credit Hours</b>		<b>15</b>
<b>Total Credit Hours</b>		<b>94</b>

<sup>1</sup> Students may elect to take these courses during summer sessions in order to meet curriculum requirements upon approval of the dual degree coordinator in each program.

<sup>2</sup> SOWK 783 and SOWK 784 require coordination and contract with a HPEB advisor to meet the terms of the Applied Practice Experience of the MPH program.

## Social Work / Health Service Policy and Management, M.S.W. / M.P.H. Admissions

The College of Social Work ([http://www.sc.edu/study/colleges\\_schools/socialwork/](http://www.sc.edu/study/colleges_schools/socialwork/)) and the Department of Health Services Policy and Management ([http://www.sc.edu/study/colleges\\_schools/public\\_health/study/areas\\_of\\_study/health\\_services\\_policy\\_and\\_management/](http://www.sc.edu/study/colleges_schools/public_health/study/areas_of_study/health_services_policy_and_management/)) (HSPM) in the Arnold School of Public Health ([http://www.sc.edu/study/colleges\\_schools/public\\_health/](http://www.sc.edu/study/colleges_schools/public_health/)), participate in a dual degree program that allows individuals to complete both the Master of Social Work and Master of Public Health degrees in less time than if the degrees are completed separately. Students apply to the dual degree program option through the USC Graduate School (<http://www.gradschool.sc.edu/>). Application reviews, including required supplemental application materials required by the programs, and admission recommendations are made independently by the College of Social Work and by the Arnold School of Public Health. Official notification of the admission decisions comes from the Graduate School. Students enrolled in both Master of Social Work and Master of Public Health courses in any term may be subject to fees for both programs.

Students enrolled in either the social work or public health program beyond their first year of graduate study cannot apply for the dual degree program. Part-time social work students may enroll in the dual degree program. Advanced-standing social work students enrolled beyond the summer bridge term cannot apply for the dual degree program. Students in the Distance Master of Public Health (MPH) in Health Services Policy and Management are not eligible for the dual MSW/MPH program.

## Degree Requirements M.S.W. (60 Hours)/ M.P.H. (45 Hours)

Students may complete the dual degree program by starting in either the Master of Social Work program or the Master of Public Health program. Each program offers a typical sequence of courses; through

academic advisement with a dual degree coordinator in each program, students select specific courses to satisfy the requirements for each degree. All curriculum and hour requirements must be satisfied in order to graduate from the dual degree program. Students in the dual degree program must complete the program within six academic years. See the Social Work, MSW (p. 459) and the MPH student handbook for additional information.

Two (2) social work elective courses can be satisfied by successfully completing HSPM 726 and an elective HSPM management courses (6 credit hours total). One HSPM elective policy course (3 hours) may be satisfied by successfully completing SOWK 778. HSPM 788 may be satisfied by completing SOWK 784 (coordination and contract with HSPM advisor required). Thus the 60-credit hour MSW degree and 45-credit hour MPH degree can both be completed with a total of 93 credit hours.

The table below reflects the plan of study for a full-time student who begins the dual degree program in social work. Note that some of the courses beyond the first year of MPH and SOWK studies may be adjusted due to program or accreditation changes.

Course	Title	Credit Hours
<b>First Year</b>		
<b>Fall</b>		
SOWK 712	Human Behavior and the Social Environment I	3
SOWK 714	Diversity and Social Justice Issues for Social Work Practice	3
SOWK 716	Human Behavior and the Social Environment II	3
SOWK 781	Field Instruction I: Generalist Social Work Practice	3
SOWK 791	Social Work Research Methodologies	3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
SOWK 722	Social Work Practice with Individuals, Families and Small Groups	3
SOWK 732	Social Work Practice with Organizations and Communities	3
SOWK 742	Social Welfare Policy Analysis	3
SOWK 777	Advanced Theory for Social Work Practice	3
SOWK 782	Field Instruction II: Generalist Social Work Practice	3
<b>Credit Hours</b>		<b>15</b>
<b>Second Year</b>		
<b>Fall</b>		
PUBH 725	Quantitative Methods for Public Health Practice	5
PUBH 726	Qualitative Methods for Public Health Practice	3
HSPM 726	Applied Public Health Law for Administrators (shared course)	3
HSPM Management Elective course (shared course) <sup>1</sup>		3
HSPM Management Elective course <sup>1</sup>		3
<b>Credit Hours</b>		<b>17</b>
<b>Spring</b>		
PUBH 735	Practical Applications of Public Health Planning	4
PUBH 730	Public Health Systems, Policy, and Leadership	3

PUBH 678	Transforming Health Care for the Future	1
HSPM 730	Financing of Health Care	3
HSPM 712	Health Economics	3
<b>Credit Hours</b>		<b>14</b>
<b>Third Year</b>		
<b>Fall</b>		
SOWK 779	Advanced Social Work Interventions	3
SOWK 783	Field Instruction III: Advanced Social Work Practice	3
SOWK 793	Evaluation of Social Work Programs	3
HSPM 768	Health Services Administration II	3
HSPM 727	Advancing Public Health Policy	3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
SOWK 718	Systems Analysis of Social Work Practice	3
SOWK 778	Advanced Analysis of Social Policy, Programs, and Services (shared course)	3
SOWK 784	Field Instruction IV: Advanced Social Work Practice (shared course) <sup>2</sup>	3
SOWK Elective course <sup>1</sup>		3
SOWK Elective course		3
HSPM 796	Health Services Policy and Management MPH Capstone Course	2
<b>Credit Hours</b>		<b>17</b>
<b>Total Credit Hours</b>		<b>93</b>

<sup>1</sup> Students may elect to take these courses during summer sessions in order to meet curriculum requirements upon approval of the dual degree coordinator in each program.

<sup>2</sup> SOWK 784 requires coordination and contract with the HSPM advisor to meet the applied practice experience of the MPH program.

\*\*SOWK 784 requires coordination and contract with the HSPM advisor to meet the applied practice experience of the MPH program.

## Social Work / Law, M.S.W. / J.D.

### Admissions

The College of Social Work ([http://www.sc.edu/study/colleges\\_schools/socialwork/](http://www.sc.edu/study/colleges_schools/socialwork/)) and the School of Law ([http://sc.edu/study/colleges\\_schools/law/](http://sc.edu/study/colleges_schools/law/)) participate in a dual degree program that allows individuals to complete both the Master of Social Work and Juris Doctor degrees in less time than if the degrees are completed separately. Application to the MSW program is made through the USC Graduate School (<http://www.gradschool.sc.edu/>) and application to the law program is made through the Law School Admission Council (LSAC). Application reviews, including required supplemental application materials required by the programs, and admission recommendations are made independently by the College of Social Work and by the School of Law. Official notification of admission into the MSW Program will be made by the Graduate School. Students enrolled in both Master of Social Work and Juris Doctor courses in any term may be subject to fees for both programs.

Students enrolled in either the social work or law program beyond their first year of graduate study cannot apply for the dual degree program. Advanced Standing social work students enrolled beyond the summer

term cannot apply for the dual degree program. The Juris Doctor degree is not offered as a part-time program; therefore, students enrolled in the Part-time social work students are not eligible for the dual degree program.

### Degree Requirements M.S.W (60 Hours) / J.D. (90 Hours)

Students must complete the dual degree program by starting in the Juris Doctor program. Each program offers a typical sequence of courses; through academic advisement with a dual degree coordinator in each program, students select specific courses to satisfy the requirements for each degree. All curriculum and hour requirements must be satisfied in order to graduate from the dual degree program. Students in the dual degree program must complete the program within seven academic years. See the Social Work, M.S.W. and the J.D. bulletin (<https://academicbulletins.sc.edu/law/>) for additional information.

The law program accepts up to nine (9) hours of social work courses as electives in its program and the MSW Program accepts up to six (6) hours of law courses towards the MSW degree. Thus the 60-credit hour MSW degree and 90-credit hour J.D. degree can both be completed with a total of 135 credit hours. However, according to the American Bar Association (ABA), the Juris Doctor program cannot accept any social work credits earned prior to matriculating in the law program. The first year of law studies must be completed at one time. Students enrolled in the dual degree MSW/JD program must be enrolled concurrently in SOWK courses and at least three (3) credit hours of LAWS courses in the semester during which they plan to share SOWK credit hours toward the J.D. degree.

The table below reflects the plan of study for a full-time student who begins the dual degree program in law. Note that the courses beyond the first year of law studies may be adjusted due to program or accreditation changes.

Law course descriptions are found in the School of Law Bulletin (<https://academicbulletins.sc.edu/law/>)

Course	Title	Credit Hours
<b>First Year</b>		
<b>Fall</b>		
LAWS 500		1
LAWS 504		4
LAWS 524		3
LAWS 529		4
LAWS 533		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
LAWS 509		4
LAWS 523		4
LAWS 534		3
LAWS 544		4
<b>Credit Hours</b>		<b>15</b>
<b>Summer</b>		
LAWS Elective Course		3
LAWS Elective Course		3
<b>Credit Hours</b>		<b>6</b>

**Second Year****Fall**

SOWK 712	Human Behavior and the Social Environment I	3
SOWK 714	Diversity and Social Justice Issues for Social Work Practice	3
SOWK 716	Human Behavior and the Social Environment II	3
SOWK 781	Field Instruction I: Generalist Social Work Practice	3
SOWK 791	Social Work Research Methodologies	3
<b>Credit Hours</b>		<b>15</b>

**Spring**

SOWK 722	Social Work Practice with Individuals, Families and Small Groups	3
SOWK 732	Social Work Practice with Organizations and Communities	3
SOWK 742	Social Welfare Policy Analysis	3
SOWK 777	Advanced Theory for Social Work Practice	3
SOWK 782	Field Instruction II: Generalist Social Work Practice	3
<b>Credit Hours</b>		<b>15</b>

**Summer**

Students may elect to take these courses during the summer in order to meet curriculum requirements upon approval of the dual degree coordinator in each program:

SOWK Elective Course	3
LAWS Elective Course	2-3
<b>Credit Hours</b>	<b>5-6</b>

**Third Year****Fall**

SOWK 779	Advanced Social Work Interventions	3
SOWK 783	Field Instruction III: Advanced Social Work Practice	3
SOWK 792 or SOWK 793	Evaluation of Social Work Practice or Evaluation of Social Work Programs	3
LAWS 554	shared course	3
LAWS Elective Course <sup>1</sup>		3
SOWK Elective Course		3
<b>Credit Hours</b>		<b>18</b>

**Spring**

SOWK 718	Systems Analysis of Social Work Practice (shared course)	3
SOWK 778	Advanced Analysis of Social Policy, Programs, and Services (shared course)	3
SOWK 784	Field Instruction IV: Advanced Social Work Practice	3
LAWS Elective Course (shared course)		3
LAWS Elective Course <sup>1</sup>		3
LAWS Elective Course <sup>1</sup>		3
SOWK Elective Course (shared course)		3
<b>Credit Hours</b>		<b>21</b>

**Fourth Year****Fall**

LAWS Elective Courses	15
<b>Credit Hours</b>	<b>15</b>

**Spring**

LAWS Elective Courses	15
<b>Credit Hours</b>	<b>15</b>
<b>Total Credit Hours</b>	<b>140-141</b>

<sup>1</sup> Students may elect to take these courses during summer sessions in order to meet curriculum requirements upon approval of the dual degree coordinator in each program.

## Sport and Entertainment Management with National Taiwan Normal University, Ph.D.

### Degree Requirements

#### Required Courses (15 Credits)

Student participants may transfer up to 9 credits in the required courses to USC.

Course	Title	Credits
SPT 801	Seminar in SPT 801 Management	3
SPT 810	Seminar in SPT 810 Education	3
SPT 830	Seminar SPT 830 Law & Risk Management	3
SPT 860	Seminar in SPT 860 Marketing	3
SPT 890	Seminar in SPT 890 Finance	3
<b>Total Credit Hours</b>		<b>15</b>

#### Research Core (15 Credits)

Course	Title	Credits
Select three courses in Statistics		9
Select one qualitative research methods course		3
Select one quantitative research methods course		3
<b>Total Credit Hours</b>		<b>15</b>

#### Cognates (12 Credits)

#### Dissertation (Minimum 18 Credits)

Course	Title	Credits
SPT 899	Dissertation Preparation	1-12

## Sport and Entertainment Management/ Sport, Leisure and Hospitality Management with National Taiwan Normal University, M.S.E.M./ M.S. in S.L.H.M.

### Degree Requirements (36 Hours)

#### Required Courses (21 Hours)

Course	Title	Credits
HRSM 788	Business Analytics in Hospitality, Retail, and Sport Management	3
STAT 600	Statistics for Applied Management	3
SPT 640	Venue Management: Principles and Practices	3

SPT 701	Management in the Sport and Entertainment Industry	3
SPT 730	Advanced Sport and the Law	3
SPT 760	Principles of Sport and Entertainment Marketing	3
SPT 790	Sport and Entertainment Finance	3
<b>Total Credit Hours</b>		<b>21</b>

### Cognates (9 Hours)

Course	Title	Credits
Select nine hours of the following:		
SPT 501	Trends and Issues in Sport and Entertainment Management	3
SPT 545	Managing Part-Time Employees and Volunteers	3
SPT 570	Special Topics in Global Sport	3
SPT 580	Business Principles in Sport Management.	3
SPT 590	Special Topics in Live Entertainment and Sport	3
SPT 635	Sport and Entertainment Event Development	3
SPT 650	Integrated Marketing Communication in Sport and Entertainment	3
SPT 736	Sport and Entertainment Event Entrepreneurship	3
SPT 746	Risk and Security Management in Public Assembly Facilities	3
SPT 750	Strategic Planning and Policy Development in Sport and Entertainment Management	3
SPT 770	Public Assembly Facility Management Programming and Sales	3
SPT 775	Event Programming and Production	3
SPT 780	Public Assembly Facility Operations and Procedures	3
SPT 798	Directed Study in Sport and Entertainment Management	3
<b>Total Credit Hours</b>		<b>9</b>

### Thesis (6 Hours)

Course	Title	Credits
SPT 799	Thesis Preparation	6
<b>Total Credit Hours</b>		<b>6</b>

## OTHER GRADUATE COURSES AND PROGRAMS

- Health Care Compliance, Certificate (p. 479)
- Masters of Studies in Law, Health Systems Law (p. 479)

### Health Care Compliance, Certificate

Students who earn a compliance certificate will have the knowledge and skills necessary to work in a compliance position for a health care entity. Students will understand the various governmental entities which govern the U.S. health system and regulate health care entities. Students will begin to understand the role of law and the legal profession in that system. Students will develop skills necessary to help health care providers and entities comply with a variety of dynamic legal requirements. **This certificate does not qualify a student to take a bar examination or prepare a student for the practice of law.**

### Admission Requirements

Successful completion of undergraduate degree from a regionally accredited institution or the equivalent.

### Certificate Requirements (15 Hours)

#### Required Courses (9 Hours)

Course	Title	Credits
LAWH 700	Legal Foundations of the Health Care System I <sup>1</sup>	3
LAWH 701	Legal Foundations of the Health Care System II	2
LAWH 702	Legal Foundations of Health Care System Lab	1
LAWH 716	Medicare Compliance for Medical Facilities	3
<b>Total Credit Hours</b>		<b>9</b>

<sup>1</sup> This requirement may be waived if a student has a J.D. degree or equivalent prior legal experience; in substitution, the student will be required to take 3 additional hours of electives.

#### Elective Courses (6 Hours)

Course	Title	Credits
Select six hours of the following:		6
LAWH 722	Risk Management	
LAWH 724	Certificates of Need	
LAWH 732	Medicare Quality Compliance	
LAWH 734	Healthcare Fraud & Abuse Compliance	
LAWH 736	Third Party Billing Compliance	
LAWH 738	HIPAA and Electronic Medical Records Compliance	
LAWH 740	Antitrust Compliance	
<b>Total Credit Hours</b>		<b>6</b>

### Masters of Studies in Law, Health Systems Law

Students who earn a Master's of Law in Health Systems Law will have the knowledge of legal principles and skills necessary to work in a position of significant responsibility within a health care industry. **This degree, however, does not qualify a student to take a bar examination or prepare**

**a student for the practice of law.** Students will understand the various governmental entities which govern the U.S. health system and regulate health care entities. Students will understand the role of law and the legal profession in that system. Students will develop the skills necessary to identify relevant legal rules affecting health care entities. Students will develop skills necessary to help health care providers and entities comply with a variety of legal requirements. Students will develop the ability to adapt to a dynamic legal and market environment and apply skills learned in the Master's Program as regulations and market forces change.

### Requirements for Admission:

- Successful completion of undergraduate degree from a regionally accredited institution or the equivalent.
- Statement of interest and resume.
- Two professional or academic letters of recommendation.
- Qualifying scores on either the GRE or LSAT. Competitive applicants will have a combined GRE score or an LSAT score that is consistent with the prevailing admitted applicant profile for the JD program.

### Degree Requirements

#### Required Courses (15 hours)

Course	Title	Credits
LAWH 700	Legal Foundations of the Health Care System I *	3
LAWH 701	Legal Foundations of the Health Care System II	2
LAWH 702	Legal Foundations of Health Care System Lab	1
LAWH 710	Public Health Systems	2
LAWH 712	Bioethical Principles (Applied Learning)	2
LAWH 714	Health Care Contracting (Applied Learning)	2
LAWH 716	Medicare Compliance for Medical Facilities	3
<b>Total Credit Hours</b>		<b>15</b>

\* This requirement may be waived if a student has a J.D. degree or equivalent prior legal experience; in substitution, the student will be required to take 3 additional hours of electives.

#### Elective Courses (15 hours)

Course	Title	Credits
LAWH 720	Health Policy Advocacy	2
LAWH 722	Risk Management	2
LAWH 724	Certificates of Need	2
LAWH 728	Comparative Studies in International Health Care	2
LAWH 730	Healthcare Structure Planning for Companies & Non-Profits	3
LAWH 732	Medicare Quality Compliance	3
LAWH 734	Healthcare Fraud & Abuse Compliance	2
LAWH 736	Third Party Billing Compliance	2

### Comprehensive Assessment

All candidates for a Master's degree must complete a comprehensive assessment in the major field of study that is distinct from program course requirements. A comprehensive assessment is one that requires a student to synthesize and integrate knowledge acquired in coursework and other learning experiences and to apply theory and principles in a situation that approximates some aspect of professional practice or research in the discipline. It must be used as a means by which faculty judge whether the student has mastered the body of knowledge

and can demonstrate proficiency in the required competencies. Many different models are possible, including written and oral comprehensive examinations, portfolios, supervised practice placements with comprehensive evaluation, a major written paper such as a thesis or an applied research project, or development of case studies. Students may complete a project related to an elective course of their choice or an externship (if externships are a part of the program). Projects must reflect significant work in addressing a hypothetical or real issue involving legal compliance or health law or policy.



# COURSE DESCRIPTIONS

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## A

- Accounting (ACCT) (p. 482)
- African Amer Studies (AFAM) (p. 484)
- Anesthesia for Nurses (ASNR) (p. 484)
- Anthropology (ANTH) (p. 485)
- Arabic (ARAB) (p. 488)
- Art Education (ARTE) (p. 488)
- Art History (ARTH) (p. 489)
- Art Studio (ARTS) (p. 491)
- Astronomy (ASTR) (p. 493)
- Athletic Training (ATEP) (p. 493)

## B

- Biology (BIOL) (p. 494)
- Biomedical Engineering (BMEN) (p. 500)
- Biostatistics (BIOS) (p. 501)
- BMSC - Biomedical Science (BMSC) (p. 503)
- Business Administration (BADM) (p. 505)

## C

- Chemical Engineering (ECHE) (p. 505)
- Chemistry (CHEM) (p. 507)
- Chinese (CHIN) (p. 509)
- Civil Engineering (ECIV) (p. 509)
- Classics (CLAS) (p. 513)
- Communication Disorders (COMD) (p. 513)
- Comp Sci & Comp Engr (CSCE) (p. 515)
- Comparative Literature (CPLT) (p. 520)
- COSM - Prof Master of Sci Prog (COSM) (p. 521)
- Counseling Education (EDCE) (p. 521)
- Criminal Justice (CRJU) (p. 523)
- Curriculum Studies (EDCS) (p. 524)

## D

- Dance (DANC) (p. 525)
- DMSB - Darla Moore Sch of Busn (DMSB) (p. 525)

## E

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# Accounting (ACCT)

### ACCT 501 - Financial Accounting III (3 Credits)

Advanced topics in accounting theory and practice as it relates to preparation of financial statements.

**Prerequisites:** ACCT 405.

### ACCT 502 - Managerial Accounting for Decision Making (3 Credits)

Advanced topics in the use of accounting information for managerial decisions.

**Prerequisites:** ACCT 402.

### ACCT 503 - Tax II (3 Credits)

Advanced tax topics. Emphasis is on the taxation of partnerships and corporations.

**Prerequisites:** ACCT 403.

### ACCT 504 - Legal Issues for Accountants & Managers (3 Credits)

The study of legal issues affecting accountants and managers.

**Prerequisites:** ACCT 324.

### ACCT 505 - Governmental and Nonprofit Accounting (3 Credits)

Accounting principles and procedures for local, state, and federal governmental units and for private nonprofit organizations.

**Prerequisites:** ACCT 405.

### ACCT 506 - International Financial Reporting (3 Credits)

Study of the principles and application of international financial reporting standards.

**Prerequisites:** ACCT 405.

**Graduation with Leadership Distinction:** GLD: Global Learning

### ACCT 590 - Special Topics in Accounting (3 Credits)

Analysis of current topics, issues and practices in various areas of accounting. May be repeated as content varies by title.

### ACCT 700 - Master of Accountancy Student Development (0-1 Credits)

Skills and strategies for Master of Accountancy students at the University of South Carolina.

### ACCT 702 - Application of Advanced Databases to Accounting and Business (3 Credits)

The integration, configuration, and operation of accounting information within enterprise resource planning and other databases as applied to current business practices.

### ACCT 725 - Financial Accounting for Professional MBA Students (3 Credits)

Accounting concepts and practices necessary to understand and use the information in corporate financial statements.

**ACCT 726 - Managerial Accounting for Professional MBA Students (3 Credits)**

Explores the types of decisions managers make and the types of accounting information that are helpful in making these decisions. Emphasizes the techniques and data used for planning, controlling, and evaluating operations.

**Prerequisites:** C or better in ACCT 725.

**ACCT 728 - Financial Accounting (3 Credits)**

Directs attention to accounting concepts, conventions, and assumptions for an understanding of the content and underlying principles of financial statements.

**ACCT 729 - Managerial Accounting (3 Credits)**

Directs attention to an understanding of the manner in which accounting aids management by providing information for decision-making and control of operations.

**Prerequisites:** ACCT 728.

**ACCT 730 - International Accounting (3 Credits)**

A study of the international dimensions of accounting, including such topics as the patterns of accounting development found in other nations, the promulgation of worldwide accounting standards, and the accounting problems associated with multinational corporate operations.

**Prerequisites:** ACCT 728 and ACCT 729.

**ACCT 731 - Federal Taxes and Management Decisions (3 Credits)**

Fundamentals of taxation with attention upon federal income tax provisions and the consequences of business decisions.

**Prerequisites:** ACCT 728 and ACCT 729.

**ACCT 732 - Auditing II (3 Credits)**

Advanced topics in independent, internal, and governmental auditing.

**ACCT 733 - Accounting Regulation and Financial Reporting Issues (3 Credits)**

Examination of the theoretical, practical, economic, and political aspects of accounting regulation and financial reporting issues.

**ACCT 734 - Accounting Research and Communication (3 Credits)**

Research on accounting and auditing issues, and the oral and written communication of accounting and auditing processes and research results.

**ACCT 735 - Cost/Managerial Accounting III (3 Credits)**

A critical examination of contemporary cost accounting theory and practice.

**ACCT 736 - Information Technology Assurance, Control, and Security (3 Credits)**

Governance, control, and audit of information technology.

**ACCT 737 - Accounting Information Systems from a Strategic Perspective (3 Credits)**

Design and implement of accounting information systems to achieve strategic objectives.

**Prerequisites:** ACCT 435.

**ACCT 738 - Financial Statement Analysis (3 Credits)**

Analysis of financial statements for profitability and risk assessment and for firm and segment valuation.

**Prerequisites:** DMSB 717 or ACCT 729 or equivalent.

**Cross-listed course:** FINA 756

**ACCT 739 - Enterprise Resource Planning (3 Credits)**

Business process integration within Enterprise Resource Planning systems including the use and management of the enterprise core modules within ERP software implemented companies.

**ACCT 741 - Special Topics in Accounting (3 Credits)**

A study of selected accounting topics.

**ACCT 742 - Independent Study in Professional Accounting (1-6 Credits)**

Individually arranged studies in specialized areas of professional accounting.

**ACCT 743 - Accounting for Management Control (3 Credits)**

Concepts and techniques of accounting and budgeting for management control in the modern organization. Topics include cost control, budgetary control, and performance and evaluation.

**Prerequisites:** ACCT 729.

**ACCT 745 - Auditing and Information Technology (3 Credits)**

The use of information technology for auditing business entities and other organizations.

**ACCT 746 - Data Analytics for Accounting and Auditing (3 Credits)**

Analysis of data in a variety of methods and formats to produce accounting and auditing information to improve decision-making.

**Prerequisites:** C or better in ACCT 745.

**ACCT 747 - Accounting Information Systems for Strategic Management (3 Credits)**

Understand, design, and implement accounting information systems to effectively control and protect information for strategic management decision making.

**ACCT 750 - Tax Research and Communication (3 Credits)**

Techniques of tax research focusing on advanced tax topics, tax administration, and procedures before the Internal Revenue Service, including oral and written communication of research results.

**ACCT 751 - Business Entity Tax Issue (3 Credits)**

Basic concepts of taxation of C Corporations, S Corporations, partnerships, Gift and Estates. and tax administration procedures.

**ACCT 752 - Advanced Business Entity Tax Issues (3 Credits)**

Advanced concepts of taxation of Corporations and partnerships.

**Prerequisites:** ACCT 751.

**ACCT 753 - Advanced Individual Tax Issues (3 Credits)**

Estate and gift tax, Estate planning, trust taxation, executive compensation, stock options, retirement accounts, AMT, and other individual tax issues.

**ACCT 754 - Multijurisdictional Tax Issues (3 Credits)**

Global, State, and local taxation issues, including (but not limited to) transfer pricing, foreign tax credits, subpart F, tax treaties, different types of taxes, nexus, and corporate income tax.

**ACCT 755 - Taxation of Corporate Reorganizations (3 Credits)**

An examination of the tax aspects of corporate mergers and reorganizations.

**Prerequisites:** ACCT 750.

**ACCT 756 - Advanced Estate and Income Planning (3 Credits)**

Advanced estate planning techniques, including executive compensation.

**ACCT 757 - Seminar in Special Tax Topics (3 Credits)**

Addresses current tax problems and tax planning opportunities.

**Prerequisites:** ACCT 750.

**ACCT 832 - Doctoral Seminar in Accounting Research (3 Credits)**

Seminar for beginning doctoral students that provides an overview of research topic areas, methods, and designs currently used in accounting.

**ACCT 833 - Doctoral Seminar in Financial Accounting (3 Credits)**

Research methods and issues related to financial accounting topics.

**ACCT 834 - Doctoral Seminar in Managerial Accounting (3 Credits)**

Research methods and issues related to managerial accounting topics.

**ACCT 835 - Doctoral Seminar in Auditing and Accounting Information Systems (3 Credits)**

Research methods and issues related to auditing and accounting information systems topics.

**ACCT 836 - Doctoral Seminar in Contemporary Accounting Topics (1-3 Credits)**

Research methods and issues related to contemporary accounting topics.

**ACCT 837 - Directed Doctoral Research Project in Accounting (3 Credits)**

Formulation of concepts, synthesis of literature, development of a research design, and conduct of any appropriate empirical tests.

## African Amer Studies (AFAM)

**AFAM 515 - Race, Gender, and Graphic Novels (3 Credits)**

Representations of race and gender in comics with a special emphasis on the experiences of African Americans.

**Cross-listed course:** WGST 515

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

**AFAM 517 - An Anthropological View of Blacks in Film (3 Credits)**

Cultural representations, constructions, production, and consumption of African-American identity in the popular culture medium of feature films.

**Cross-listed course:** ANTH 517

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy, GLD: Professional and Civic Engagement Leadership Experiences

**AFAM 565 - African American Theatre (3 Credits)**

The major movements, figures, plays, and critical strategies that have marked the development of African American theatre in the 19th, 20th, and 21st centuries.

**Prerequisites:** ENGL 101, ENGL 102, and one course between ENGL 270 - ENGL 292.

**Cross-listed course:** ENGL 565, THEA 565

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy, GLD: Professional and Civic Engagement Leadership Experiences

**AFAM 580 - Culture and Identity in the African Diaspora (3 Credits)**

Students will explore the African Diaspora as a social, cultural, and historical formation with Africa at its center, focusing on US, Latin American, and Caribbean African-descended communities.

**Cross-listed course:** ANTH 580

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy, GLD: Global Learning, GLD: Professional and Civic Engagement Leadership Experiences

**AFAM 798 - Advanced Topics in African American Studies (3 Credits)**

Reading and research on selected topics in African American Studies.

May be repeated as content varies by title.

## Anesthesia for Nurses (ASNR)

**ASNR 700 - Introduction to Nurse Anesthesia Practice (2 Credits)**

Introduction to foundational concepts in nurse anesthesia and the role of the nurse anesthetist.

**ASNR 750 - Health Policy, Ethics, and Legal Concepts for the DNP Nurse Anesthetist (3 Credits)**

Historical and current concepts in health policy, ethics, and legal concepts for the DNP Nurse Anesthetist.

**ASNR 760 - Clinical Topics in Nurse Anesthesia Practice I (2 Credits)**

Introduction to pain management concepts and the use of ultrasound guided techniques in treatment.

**Corequisite:** ASNR 801.

**ASNR 761 - Basic Anesthesia Principles I (4 Credits)**

Application of basic anesthesia principles to the practice of nurse anesthesia.

**Prerequisites:** ASNR 700.

**ASNR 762 - Basic Anesthesia Principles II (4 Credits)**

This course is a continuation of Basic Principles in Anesthesia I, covering beginning concepts in nurse anesthesia practice.

**Prerequisites:** ASNR 761.

**Corequisite:** ASNR 771.

**ASNR 763 - Advanced Principles in Nurse Anesthesia Practice (4 Credits)**

This course covers advanced concepts in nurse anesthesia practice.

**Prerequisites:** ASNR 762.

**Corequisite:** ASNR 773.

**ASNR 771 - Introduction to Nurse Anesthesia Practicum (1 Credit)**

This course provides a thorough orientation to the clinical area and application of beginning anesthesia concepts to patients through simulation and precepted in-hospital assignments.

**Corequisite:** ASNR 762.

**ASNR 772 - Seminar in Nurse Anesthesia I (2 Credits)**

Students will present a critique of anesthetic management of selected cases or topics related to their doctoral project in anesthesia for peer review. A review of the literature and application of the current research is to be included in the presentations.

**Prerequisites:** ASNR 763.

**ASNR 773 - Clinical Practicum I (2 Credits)**

The first of five clinical practicums focusing on general anesthesia.

**Prerequisites:** ASNR 771.

**Corequisite:** ASNR 763.

**ASNR 775 - Clinical Practicum II (6 Credits)**

The second of five clinical field experiences including general and specialty anesthesia rotations.

**Prerequisites:** ASNR 773.

**ASNR 777 - Clinical Practicum III (6 Credits)**

The third of five clinical field experiences including general and specialty anesthesia rotations.

**Prerequisites:** ASNR 775.

**ASNR 779 - Clinical Practicum IV (6 Credits)**

The fourth of five clinical field experiences including general and specialty anesthesia rotations.

**Prerequisites:** ASNR 777.

**ASNR 781 - Clinical Practicum V (6 Credits)**

The fifth of five clinical field experiences including general and specialty anesthesia rotations.

**Prerequisites:** ASNR 779.

**ASNR 795 - Application of Physical and Chemical Concepts in Nurse Anesthesia Practice (3 Credits)**

Application of physical and chemical concepts to the practice of nurse anesthesia.

**Prerequisites:** ASNR 700.

**ASNR 797 - Professional Role of the DNP Nurse Anesthetist I (3 Credits)**

This course addresses the professional role responsibilities, challenges and issues for nurse anesthetists.

**ASNR 798 - Application of Biomedical Concepts in Nurse Anesthesia Practice (3 Credits)**

Application of physiology and pathophysiology to nurse anesthesia practice.

**Prerequisites:** ASNR 763 and PPH 701.

**ASNR 800 - Integration of Concepts Across Nurse Anesthesia Practice (2 Credits)**

Review of concepts with the purpose of creating broad view connections of anesthesia principles.

**Prerequisites:** ASNR 761, ASNR 762, ASNR 763, ASNR 795, ASNR 798.

**ASNR 801 - Specialty Focus Simulation I (1 Credit)**

Use of simulation to learn and practice various peripheral nerve blocks and airway block placement with ultrasound and nerve stimulator techniques. Preparatory work outside of simulation time is required.

**Corequisite:** ASNR 760.

**ASNR 802 - Specialty Focus Simulation II (1 Credit)**

High fidelity simulation activities to practice response to critical events in nurse anesthesia practice. Preparatory work outside of simulation is required.

**Corequisite:** ASNR 860.

**ASNR 860 - Clinical Topics in Nurse Anesthesia Practice II (2 Credits)**

Exploring the contributors to patient safety – including systems and human factors – and how to safely manage critical events in the perioperative period.

**Corequisite:** ASNR 802.

**ASNR 872 - Seminar in Nurse Anesthesia II (2 Credits)**

Students will present for peer review and critique their completed doctoral project. Presentation of project will meet the requirement for dissemination of their terminal project.

**Prerequisites:** ASNR 772 and ASNR 899.

**ASNR 896 - Professional Role of the DNP Nurse Anesthetist II (3 Credits)**

Education, management, and business principles, as they relate to the DNP Nurse Anesthetist, will be explored and practiced.

**ASNR 897 - DNP Project I (2 Credits)**

DNP Project Preparation for Nurse Anesthesia Students.

**ASNR 898 - DNP Project II (1-2 Credits)**

DNP Project Preparation for Nurse Anesthesia Students.

**Prerequisites:** ASNR 897.

## Anthropology (ANTH)

**ANTH 512 - Gender Issues in China (3 Credits)**

Anthropology of gender in Chinese-speaking cultures in Chinese-speaking Asia.

**ANTH 513 - Anthropological Ethnobotany (3 Credits)**

Survey of how each anthropological subfield studies the interrelationships between plants and peoples. Application of methods, including interviewing and data analysis.

**ANTH 515 - Tradition and Transformations in Islamic Cultures (3 Credits)**

Islam as a dynamic cultural tradition: emphasis on the tension between Islamization and the larger Islamic tradition.

**Cross-listed course:** RELG 551

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy, GLD: Global Learning

**ANTH 517 - An Anthropological View of Blacks in Film (3 Credits)**

Cultural representations, constructions, production, and consumption of African-American identity in the popular culture medium of feature films.

**Cross-listed course:** AFAM 517

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy, GLD: Professional and Civic Engagement Leadership Experiences

**ANTH 518 - Visual Cultures (3 Credits)**

Survey of visual anthropology including theoretical frameworks of ways of seeing, ethnographic photography and filmmaking, contemporary technologies, and their effects on culture.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

**ANTH 520 - Field Problems in Ethnology (6 Credits)**

A two-semester class and field session. Research design, field methods, interpretation of data, and the development of theory from the data.

**ANTH 525 - Ethnoecology (3 Credits)**

Seminar exploring human-plant-animal-natural interactions within an anthropological framework.

**ANTH 533 - North American Archaeology (3 Credits)**

Prehistoric and historic archaeology.

**ANTH 534 - Prehistoric Archaeology of South America (3 Credits)**

Prehistoric archaeology of the South American continent.

**Cross-listed course:** LASP 425

**ANTH 535 - Conflict Archaeology (3 Credits)**

Anthropological and archaeological theories and methods in the study of conflict, war, and warfare. Causes, effects, outcomes of sustained social acts of violence of groups, tribes, states, and nations. Evolutionary, biological, social origins of warfare. History, strategy, and tactics, battlefield archaeology.

**ANTH 536 - Public Archaeology (3 Credits)**

Philosophy and mechanics of modern archaeological Cultural Resource Management (CRM). CRM legislation, regulation, and process. Contemporary issues and problems in Public Archaeology including Native American reburial negotiations, conflict resolution, ethics, looting, business practices, standards, contexts and protection.

**ANTH 541 - Field Problems in Archaeology (3 Credits)**

Archaeological field methods and techniques such as excavation, flotation, sampling, surveying, photography, and remote sensing.

**Prerequisites:** ANTH 320.

**ANTH 546 - Forensic Archaeological Recovery (FAR) (3 Credits)**

Introduction to Forensic Archaeological Recovery (FAR). Concepts, methods, and contemporary issues.

**ANTH 550 - Archaeological Laboratory Methods (3 Credits)**

Laboratory on basic prehistoric and historic artifact analysis, including analytical methods, laboratory equipment, and data interpretation. May be repeated.

**Prerequisites:** ANTH 319 or ANTH 322.

**ANTH 551 - Medical Anthropology: Fieldwork (3 Credits)**

Application of observation techniques, field notes, informant interviewing, and secondary data analysis to interpreting differential perceptions of health problem solving in the community and clinic.

**ANTH 552 - Medical Anthropology (3 Credits)**

Socio-cultural factors in health, illness, healing, and in medical systems. Cross-cultural and ethnographic evidence for public health research and program applications.

**Cross-listed course:** HPEB 552

**Graduation with Leadership Distinction:** GLD: Research

**ANTH 553 - Anthropological Approaches to Narrative and Performance (3 Credits)**

The ways people from various cultures reflect on, reinforce, and construct their social realities through narrating, which will be considered as both artistic expression and social action.

**Cross-listed course:** LING 545

**ANTH 555 - Language and Gender (3 Credits)**

Approaches to gender and language emphasizing the social grounding of both; how language reflects sociocultural values and is a tool for constructing different types of social organization.

**Cross-listed course:** LING 541, WGST 555

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy, GLD: Professional and Civic Engagement Leadership Experiences

**ANTH 556 - Language and Globalization (3 Credits)**

Anthropological approach to issues of language and globalization. Linguistic consequences of globalization under consideration include communicative patterns, linguistic change, and language and political economy.

**Cross-listed course:** LING 556

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy, GLD: Global Learning, GLD: Professional and Civic Engagement Leadership Experiences

**ANTH 557 - Psychological Anthropology (3 Credits)**

Psychological aspects of behavior from a cross-cultural perspective.

**ANTH 561 - Human Osteology (4 Credits)**

An intensive examination of the human skeleton and techniques for anthropological interpretation.

**ANTH 565 - Health and Disease in the Past (3 Credits)**

Varieties and effects of disease patterns among past populations illustrating biological, environmental, and cultural interrelationships.

**ANTH 567 - Human Identification in Forensic Anthropology (3 Credits)**

Theories and methodologies necessary for the identification of human skeletal remains in a forensic setting.

**ANTH 568 - Nutritional Anthropology (3 Credits)**

Nutritional problems in developing nations. Measures of nutritional status. Social, economic, and environmental aspects of food consumption and nutrition. Biocultural responses to food deprivation and undernutrition.

**ANTH 569 - International Development and the Environment (3 Credits)**

Intersections of international development and environmental change; study of general theoretical perspectives balanced with case studies from the Global South.

**Cross-listed course:** GEOG 569

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy, GLD: Global Learning

**ANTH 570 - Ethnographic Film (3 Credits)**

Problems in conveying and interpreting ethnographic information on film or tape. Includes syntax, suitability of subject matter to the medium, irrelevant or distracting information, and observer bias.

**ANTH 572 - Temporal Processes in Culture (3 Credits)**

Clocks, cycles, and contingencies as they affect human societies now and have done so in the past. Theories and models from biology and the other natural sciences will be used to interpret the history of culture.

**ANTH 575 - Economic Anthropology (3 Credits)**

A cross-cultural study of the economic behavior of pre-literate and literate societies.

**ANTH 576 - Archaeology of the African Diaspora (3 Credits)**

Foodways, architecture, crafts, and narrative of African-American cultures.

**ANTH 577 - Advanced Topics in the Anthropological Study of Social Organization (3 Credits)**

Selected recent theoretical and methodological developments in the study of social organization.

**ANTH 579 - Cultural Ecology (3 Credits)**

An interdisciplinary approach to prehistoric, historic, and contemporary relationships between the development of socio-cultural configurations and ecosystems.

**ANTH 580 - Culture and Identity in the African Diaspora (3 Credits)**

Students will explore the African Diaspora as a social, cultural, and historical formation with Africa at its center, focusing on US, Latin American, and Caribbean African-descended communities.

**Cross-listed course:** AFAM 580

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy, GLD: Global Learning, GLD: Professional and Civic Engagement Leadership Experiences

**ANTH 581 - Globalization and Cultural Questions (3 Credits)**

This course examines cultural understandings of and responses to globalization, examining topics such as its history and theories, migration, economic integration and inequality, identity, social movements, and the environment.

**Cross-listed course:** GEOG 581

**Graduation with Leadership Distinction:** GLD: Global Learning

**ANTH 586 - Discourse, Gender and Politics of Emotion (3 Credits)**

Anthropological approach to issues of discourse, gender and emotion. Issues under consideration include the social control, force, and forms of emotional discourse and the relationship between emotion and culture from gender-oriented perspectives.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

**ANTH 591 - Selected Topics (1-3 Credits)**

Topics of special interest. May be taken more than once as topics change.

**ANTH 600 - Survey of Linguistics (3 Credits)**

Survey of core areas of linguistics and extensions to closely related disciplines. Introduction to the linguistic component of human cognition. Formal description and analysis of the general properties of speech and language, the organization of language in the mind/brain, and cross-linguistic typology and universals.

**Cross-listed course:** ENGL 680, LING 600

**ANTH 699 - Reading and Research (3-6 Credits)****ANTH 701 - Physical Anthropology and Archaeology for Teachers (3 Credits)**

Human origins, human evolution, human prehistory, and cultural existence from its less complex forms to early civilizations. An introduction to the concepts, methods, and data of physical, biological, and archaeological anthropology primarily for teachers. May be taken with, or independently of, ANTH 702.

**ANTH 702 - Social and Linguistic Anthropology for Teachers (3 Credits)**

Selected contemporary cultures, including their languages. An introduction to the concepts, methods, and data of sociocultural anthropology and anthropological linguistics, primarily for teachers. May be taken with, or independently of, ANTH 701.

**ANTH 703 - Anthropological Inquiry (3 Credits)**

A discussion of the general topics of anthropological inquiry, theories, and methods.

**ANTH 704 - Anthropological Connections (3 Credits)**

Faculty representing subdisciplines of anthropology will explore with students the connections between subfields, theoretical and regional perspectives, and analyses of the past and present.

**Prerequisites:** ANTH 703.

**ANTH 706 - Engendering Global Capitalism (3 Credits)**

The origins of global capitalism, the nature of money and debt, the roles of gender, race and class in social formations, and the relationship between production and reproduction.

**Cross-listed course:** WGST 706

**ANTH 711 - Professionalism and Ethics (3 Credits)**

Presentations of critical skills to achieve career goals in a variety of anthropological applications, develop portfolios, prepare competitive job applications, and produce effective grant proposals. Ethics issues in anthropological research publishing and teaching.

**ANTH 712 - Thesis Skills Seminar (1-3 Credits)**

Skills needed for writing a master's thesis in anthropology, including literature review, current theory, research design, data analysis, and written presentation.

**ANTH 714 - Teaching Practicum in Anthropology (1 Credit)**

Uses the context of leading discussions in ANTH 101 and 102 to introduce and explore issues relating to pedagogy. Restricted to TA's for ANTH 101 and ANTH 102.

**ANTH 718 - Seminar in European Archaeology (3 Credits)**

Consideration and critique of current research in European archaeology.

**ANTH 719 - Field Problems in Ethnology (3 Credits)**

Advanced graduate seminar on methods of ethnology, including research design, field methods, and interpretation of data, and the development of theory from data. Includes class and field sessions.

**ANTH 720 - Development of Anthropological Archaeology (3 Credits)**

Anthropological archaeology: history, theory, contemporary issues, and relationship to other disciplines.

**ANTH 721 - Community Anthropology for Professionals (3 Credits)**

Those skills of social/cultural anthropology and anthropological linguistics which can aid practitioners in health, law, education, and other professional fields to function in community settings. Emphasis on cultural and sub-cultural differences in South Carolina, the Southeast, and the United States.

**ANTH 722 - Summer Field School in Archaeology (3-6 Credits)**

Experience in supervising archaeological research, making field decisions, and directing the collection, processing, and interpretation of archaeological data in the field.

**ANTH 723 - Summer Field School in Ethnography (3-6 Credits)**

Experience in designing and carrying out ethnographic research including project design, data collection, analysis, and description.

**ANTH 724 - Visual Anthropology Research (3 Credits)**

Exploring the range of anthropological research utilizing visual records (still photographs and video/film) including theoretical underpinnings and hands-on practice: how and why to use visual records in research.

**ANTH 730 - Cultural Theory through Ethnography (3 Credits)**

Theories of culture presented through ethnographies from different parts of the world. Issues in writing, reading, and interpreting ethnographic information.

**ANTH 733 - Seminar in North American Prehistory (3 Credits)**

Consideration and critique of current research in North American archaeology.

**ANTH 740 - Current Issues in Archaeology (3 Credits)**

Review of theoretical trends in American archaeology.

**ANTH 741 - Ethnology for Archaeologists (3 Credits)**

Ethnographic data important to archaeological thinking; archaeological models resting on ethnographic data. Emphasis on variation of ethnographic data.

**ANTH 742 - Public Archaeology (3 Credits)**

The legal, philosophical, and ethical foundations of archaeology in the United States. Considerations on relating archaeology to the non-professional.

**ANTH 743 - Research Practicum in Archaeology (1 Credit)**

Observation and participation in the on going management of archaeological resources.

**ANTH 744 - Research Practicum in Conservation Archaeology (1 Credit)**

Observation and participation in the on going management of archaeological resources.

**ANTH 745 - Seminar in Historical Archaeology (3 Credits)**

Advanced seminar on theoretical considerations and methodological approaches to the study of historical archaeological materials.

**ANTH 747 - Language as Social Action (3 Credits)**

Examines language as a social, cultural, and political matrix. Topics include ideology, gender, race, power, agency, and resistance. Students will apply linguistic theories in their own analyses of everyday speech.

**Cross-listed course:** LING 747

**ANTH 748 - Introduction to Linguistic Anthropology (3 Credits)**

A comprehensive introduction to linguistic anthropology, its relationship(s) to sociolinguistics, discourse analysis, and conversation analysis. Contributions made to social theory and theories of language and discourse will be understood.

**Prerequisites:** LING 600.

**Cross-listed course:** LING 748

**ANTH 750 - Archaeological Laboratory Analysis (4 Credits)**

Methods and techniques necessary to operationalize and test archaeological hypotheses in a laboratory context.

**ANTH 751 - Archaeological Research Design and Analysis (3 Credits)**

An overview of skills required to design and organize archaeological field and laboratory research.

**ANTH 756 - Analysis of Conversation (3 Credits)**

Types of interactive organization found within conversation and the methods and procedures used by participants to achieve order.

**Cross-listed course:** LING 743

**ANTH 760 - Biocultural Adaptation (3 Credits)**

Approaches to human adaptation emphasizing the interaction of biology and culture. Studies of biocultural adaptation to environmental, social, and economic constraints. Research design and methodology in adaptation studies.

**ANTH 761 - Bioarchaeology Principles (3 Credits)**

Methods and theories of application of physical anthropological data to archaeological problems.

**ANTH 762 - Biological Anthropology Principles and Theory (3 Credits)**

Major theories and principles of biological anthropology.

**ANTH 771 - Migration and Culture (3 Credits)**

Theories of migration; peopling of the earth; family structure and migration in different economic regimes and cultures; seasonal and cyclical patterns.

**ANTH 772 - Gender and Culture (3 Credits)**

Different cultures' ideas about gender and use of gender to organize social groups in a wide range of societies, including American subcultures.

**Cross-listed course:** WGST 772

**ANTH 773 - Exploring Ethnohistory (3 Credits)**

Cross-cultural study of history. Includes theoretical perspectives and cases from the Americas, Europe, Africa, and Asia.

**Cross-listed course:** HIST 772

**ANTH 774 - Seminar in Environmental Anthropology and Development (3 Credits)**

Findings of ecological and economic anthropology applied to problems of contemporary development. Emphasis on less developed countries.

**ANTH 775 - Anthropology of Art (4 Credits)**

Anthropological examination of the art of small-scale societies with attention, where appropriate, to the art of more complex societies.

**ANTH 777 - Cinema and Archaeology (1 Credit)**

Critical examination of films dealing with archaeological subjects.

**ANTH 780 - Ethnography of Communication (3 Credits)**

Ethnographic analysis of communication in groups and institutions in different cultures.

**ANTH 781 - Human Interaction (3 Credits)**

Introduction to basic research on how human beings interact with each other and an historically constituted material world.

**ANTH 782 - Language Ideology: The Political Economy of Language Beliefs and Practices (3 Credits)**

Linguistic anthropological approaches that examine how ideological systems mediate social structures and linguistic /discursive forms and functions. Topics range from language and political economy, identity and identifications, institutions, and nation-building/nationalism.

**Cross-listed course:** LING 782

**ANTH 787 - Material Culture Studies (3 Credits)**

Seminar in historical study of material culture; principal disciplinary and theoretical perspectives; emphasis on material culture of North America.

**Cross-listed course:** HIST 787

**ANTH 791 - Special Topics in Anthropology (3 Credits)**

Seminar for advanced students. Topics vary according to student and instructor interest. May be repeated for different topics.

**ANTH 797 - Reading and Research (3 Credits)**

Independent study course designed to facilitate student's research. An independent study contract with content approved by instructor is required.

**ANTH 798 - Research Practicum in Anthropology (3-6 Credits)**

Participation under faculty supervision of anthropological research. Development of the research project, collecting, recording, analyzing, and reporting on the data.

**ANTH 799 - Thesis Preparation (1-9 Credits)****ANTH 899 - Dissertation Preparation (1-12 Credits)**

T/U grading.

## Arabic (ARAB)

**ARAB 615 - Intensive Readings in Arabic (3 Credits)**

Intensive reading for non-majors. Graduate students fulfill their foreign-language requirement with successful completion of the course. Undergraduates may take the course as an elective only. Grades S/U for graduates and undergraduates.

**ARAB 777 - Supervised Instruction in Teaching Foreign Languages in College (0 Credits)**

Supervised direction of foreign language teaching in college. Required of all graduate assistants who are teaching. This course will not count toward the MA or PhD degree.

## Art Education (ARTE)

**ARTE 520 - Art for Elementary Schools (3 Credits)**

Methods of teaching art to elementary and preschool children. Major emphasis will be given to relevant studio experiences.

**ARTE 525 - Elementary Methods for K-12 Art Certification (3 Credits)**

Curriculum, methods, and materials for teaching art to elementary and preschool children.

**ARTE 525P - Elementary Methods for K-12 Art Certification Practicum (1 Credit)**

Experiential practice and learning in elementary schools.

**Corequisite:** ARTE 525.

**ARTE 530 - Art of Children (3 Credits)**

A study of prominent theories of the artistic development of children from infancy through adolescence. Students will examine children's art from various age groups and apply theoretical explanations to these observations.



**ARTE 540 - The School Art Program (3 Credits)**

An introduction to art education as a profession. The history, curricular development, and current issues are examined. Students practice proven teaching techniques.

**Prerequisites:** ARTE 520.

**ARTE 540P - Practicum in Art Education (1 Credit)**

A sequence of supervised practicum experiences in middle and secondary school art education settings. Seminars and group discussions.

**Corequisite:** ARTE 540.

**ARTE 550 - Incorporating New Media in Art Education (3 Credits)**

Applications new media such as digital photography, sound, and other interactive hypermedia for the art classroom. Emphasis on integrating art production with art history, criticism, and aesthetics.

**ARTE 560 - Secondary Methods for K-12 Art Certification (3 Credits)**

Curriculum, methods, and materials for teaching art to secondary school students.

**Corequisite:** ARTE 560P.

**ARTE 560P - Secondary Methods for K-12 Art Certification Practicum (1 Credit)**

Experiential curriculum, methods, and materials for teaching secondary schoolchildren.

**Corequisite:** ARTE 560.

**ARTE 565 - Field Experience Seminar (3 Credits)**

**Corequisite:** EDSE 471.

**ARTE 595 - Art Education Workshop (1-6 Credits)**

A workshop especially for teachers and prospective teachers, featuring practical art experiences and projects for elementary and secondary school. Topic varies by title.

**ARTE 701 - Seminar in Art Education (3 Credits)**

Research methods used in art education and related areas.

**ARTE 702 - Problems in the Teaching of Art (3 Credits)**

Problems in teaching a discipline-based approach to art education; examination of the lives and works of famous artists and production of teaching materials.

**ARTE 703 - Issues and Trends in Art Education (3 Credits)**

Subject-centered approach to art history; the interrelationship of art and society, and the significance of art in social change.

**ARTE 705 - Program Development in Art (3 Credits)**

Comprehensive studies of curriculum designs and methods, methods and technologies from modernist to postmodernist assumptions in elementary and high school art education programs.

**ARTE 725 - Elementary Pedagogy Methods for Art Instruction (3 Credits)**

Art methods for elementary schools.

**Corequisite:** ARTE 725P.

**ARTE 725P - Elementary Pedagogy Methods for Art Instruction Practicum (1 Credit)**

Art methods for elementary schools practicum.

**Corequisite:** ARTE 725.

**ARTE 740 - Art Program for Schools (3 Credits)**

An introduction to the art education profession. Curriculum development and current issues are examined.

**Prerequisites:** ARTE 725 and ARTE 725P.

**Corequisite:** ARTE 741.

**ARTE 740P - Art Program for Schools Practicum (1 Credit)**

An introduction to the art education profession through practical experience.

**Prerequisites:** ARTE 725 and ARTE 725P.

**Corequisite:** ARTE 740.

**ARTE 750 - Interactive Technology for Art Teachers (3 Credits)**

Interactive technology in art programs using the computer as a creative tool in art education.

**ARTE 760 - Secondary Pedagogy Methods for Art Instruction (3 Credits)**

Secondary methods of art instruction.

**Corequisite:** ARTE 760P.

**ARTE 760P - Secondary Pedagogy Methods for Art Instruction Practicum (1 Credit)**

Practical experience in secondary methods of art instruction.

**Corequisite:** ARTE 760P.

**ARTE 765 - Art Education Internship Seminar (3 Credits)**

Seminar for art education internship. Students will be guided through practical field experience and the ADEPT evaluation system.

**Corequisite:** ARTE 771.

**ARTE 771 - Art Education Internship (12 Credits)**

Internship in art education.

**ARTE 790 - Problems in Art Education (3 Credits)**

May be repeated up to a maximum of nine hours.

**ARTE 799 - Thesis Preparation (1-9 Credits)**

## Art History (ARTH)

**ARTH 501 - Methodologies of Art History (3 Credits)**

A seminar for art history majors and graduate students in the history and various methodologies of the discipline.

**ARTH 503 - Internship in Art History (1-6 Credits)**

Supervised experience in the field of art history, including museums, galleries, art dealers and auction houses. Requires a university internship contract and is subject to approval by advisor. May be repeated.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Internships

**ARTH 511 - Etruscan Art and Archaeology (3 Credits)**

Seminar in the art and civilization of the pre-Roman Etruscan peoples of Italy. Slide lectures, discussion sessions, and some examination of archaeological field methods and pottery classification.

**ARTH 514 - Topics in Ancient Art (3 Credits)**

Topic varies by title.

**ARTH 519 - Topics in Medieval Art (3 Credits)**

Topic varies by title.

**ARTH 520 - History of Renaissance Painting (3 Credits)**

An analysis of the paintings and painters of importance during the period of the Renaissance in Europe.

**ARTH 521 - History of Renaissance Sculpture (3 Credits)**

A survey of the major developments in the art of sculpture associated with the European Renaissance.

**ARTH 522 - History of Renaissance Architecture (3 Credits)**

European architecture and architectural theory during the 15th and 16th centuries.

**ARTH 523 - Florentine Art (3 Credits)**

The artistic development of Florence from the age of Giotto to that of Michelangelo as seen in the context of social and cultural developments.

**ARTH 524 - Topics in Renaissance Art (3 Credits)**

Topic varies by title.

**ARTH 525 - History of Baroque Painting (3 Credits)**

17th-century European painting.

**Prerequisites:** ARTH 106 or ARTH 325 or ARTH 326.

**ARTH 526 - History of Baroque Sculpture (3 Credits)**

17th and 18th-century European sculpture.

**Prerequisites:** ARTH 106 or ARTH 325 or ARTH 326.

**ARTH 527 - History of Baroque Architecture (3 Credits)**

The architecture of Europe in the 17th century with special attention to the major architects of Italy, France, Germany, and England. Topics to be included are: the church, the palace, the garden, and city planning.

**Prerequisites:** ARTH 106 or ARTH 325 or ARTH 326.

**ARTH 529 - Topics in 18th-Century Art (3 Credits)**

Topic varies by title.

**Prerequisites:** ARTH 106 or ARTH 327.

**ARTH 534 - Topics in 19th-Century Art (3 Credits)**

Topic varies by title.

**Prerequisites:** ARTH 106 or ARTH 330.

**ARTH 535 - History of Modern Painting (3 Credits)**

A detailed examination of 20th century painting.

**ARTH 536 - History of Modern Sculpture (3 Credits)**

The development of sculpture in the 19th and 20th centuries with special attention to contemporary tendencies.

**ARTH 537 - Topics in Modern Architecture (3 Credits)**

Topic varies by title.

**Prerequisites:** ARTH 106 or ARTH 337.

**ARTH 539 - Topics in Modern Art (3 Credits)**

Topic varies by title.

**ARTH 540 - History of American Painting (3 Credits)**

Important aspects of American painting with emphasis on the 19th and 20th centuries.

**ARTH 542 - History of American Architecture (3 Credits)**

A consideration of the evolution of architecture in America including aspects of town and city planning.

**ARTH 543 - The History of American Antiques and Decorative Arts (3 Credits)**

A survey of our material culture concentrating upon the evolution of styles.

**ARTH 544 - Topics in American Art (3 Credits)**

Topic varies by title.

**ARTH 545 - Special Topics in Modern Chinese Art (3 Credits)**

Topics in modern Chinese art selected for specialized study. May be repeated as content varies by title.

**ARTH 546 - Special Topics in Asian Art (3 Credits)**

Topics in Asian art selected for specialized study. May be repeated as content varies by title.

**ARTH 549 - Topics in Non-Western Art (3 Credits)**

Topic varies by title.

**ARTH 550 - Trends in Art History (3 Credits)**

A critical examination of the development of the discipline of art history and an analysis of its major trends and theoretical positions.

**ARTH 551 - Special Topics in Film and Media Studies (3 Credits)**

Intensive study of a specific topic in film and media studies. May be repeated as content varies by title.

**Prerequisites:** FAMS 240.

**Cross-listed course:** FAMS 511, MART 591

**ARTH 557 - History of Printmaking (3 Credits)**

Technical, aesthetical, and historical study of the development of printmaking.

**ARTH 560 - Museology I (3 Credits)**

The history and theory of museums and an introduction to museum practices in the setting of a multi-disciplinary institution. Practical experience provided through the various units of the University Museums.

**ARTH 561 - Museology II (3 Credits)**

Museum practices emphasizing the conservation, installation, and interpretation of the object in the context of an art museum. Practical experience provided through the Columbia Museum of Art.

**ARTH 562 - Art Conservation (3 Credits)**

History, theory, practices, ethics, and procedures of modern art conservation. Practical experience provided through the South Carolina Institute of Archaeology and Anthropology.

**ARTH 569 - Special Topics in Film and Media Histories (3 Credits)**

Intensive study of a specific topic in film and media history. May be repeated as content varies by title.

**Prerequisites:** FAMS 300.

**ARTH 590 - Topics in Art History (3 Credits)**

Topic varies by title.

**Prerequisites:** ARTH 105 or ARTH 106 or any ARTH 300.

**ARTH 599 - Independent Study (1-6 Credits)**

Independent study for advanced undergraduate majors and graduate students in art history. Approved independent study contract required for enrollment. May be repeated, but no more than 12 credits of Independent Study may be applied to the degree.

**ARTH 701 - Methodologies and Practices of Art History (3 Credits)**

Critical study of the discipline of art history and scholarly approaches to practices of the discipline.

**ARTH 720 - Problems in Renaissance Art (3 Credits)****ARTH 725 - Problems in Baroque and Rococo Art (3 Credits)**

**Prerequisite:** A course in baroque or 18th-century art.

**ARTH 730 - Problems in 19th-Century Art (3 Credits)****ARTH 735 - Problems in 20th-Century Art (3 Credits)****ARTH 737 - Contemporary Trends in Visual Arts (3 Credits)**

A history of art seminar focusing on contemporary trends in the visual arts.

**ARTH 739 - Special Topics: Problems in Modern Art (3 Credits)**

Selected problems in the visual arts from c.1780 to the present. May be repeated as content varies by title.

**ARTH 745 - Special Topics - Problem in Modern Chinese Art (3 Credits)**

Selected problems in modern Chinese art. May be repeated as content varies by title.

**ARTH 746 - Special Topics: Problems in Asian Art (3 Credits)**

Selected problems in Asian art. May be repeated as content varies by title.

**ARTH 769 - Problems in Film History (3 Credits)**

Topic varies with title.

**Prerequisites:** FAMS 240, or MART 270, or ENGL 565, or ENGL 566, or THEA 580.

**ARTH 790 - Problems in Art History (3 Credits)****ARTH 798 - Master's Project Planning (1-9 Credits)**

Independent final project in art history.

**ARTH 799 - Thesis Preparation (1-9 Credits)**

## Art Studio (ARTS)

**ARTS 500 - Visual Meaning (4 Credits)**

The analysis, structuring, and production of individual works of art using traditional and non-traditional approaches.

**ARTS 501 - Art Business (3 Credits)**

Business practices for the studio artist. Contracts, portfolio preparation, promotion, alternate professions, museums, galleries, copyright, and shipping will be discussed.

**ARTS 510 - Painting I (6 Credits)**

BFA Painting Capstone course stressing focus on further development of individual approaches to painting culminating in a cohesive body of work and a written thesis defense.

**Prerequisites:** ARTS 210, ARTS 211, ARTS 310, and ARTS 311.

**ARTS 511 - Painting II (6 Credits)**

BFA Painting Capstone course focusing on further development of individual approaches to painting culminating in a BFA Senior Thesis Exhibition and defense.

**Prerequisites:** ARTS 510.

**ARTS 512 - Introduction to Watercolor (3 Credits)**

Introduction to traditional and experimental transparent watercolor technique. Encompasses field work at off campus locations.

**ARTS 513 - Advanced Watercolor (3 Credits)**

Advanced study of watercolor and water-based media with emphasis on individual creative expression. Encompasses field work at off campus locations.

**ARTS 514 - Workshop: Painting (4 Credits)**

Advanced study in various painting problems, content varies by title.

**ARTS 515 - Printmaking I (3 Credits)**

Further development of individual approaches to printmaking.

**Prerequisites:** ARTS 416.

**ARTS 516 - Capstone Printmaking I: Professional Practices (3-6 Credits)**

Professional development practices including preparing a portfolio and oral presentation of work, researching career options, and preparing applications for exhibition and funding opportunities.

**Prerequisites:** ARTS 215 and one ARTS 300 - ARTS 400 level print course.

**ARTS 517 - Capstone Printmaking II: Exhibition (3-6 Credits)**

Preparing for an exhibition.

**Prerequisites:** ARTS 215 and one ARTS 300 - ARTS 400 level print course.

**ARTS 519 - Workshop: Printmaking (3 Credits)**

Advanced investigation and analysis of various printmaking techniques. Topic varies by title.

**ARTS 520 - Ceramics I (6 Credits)**

Further development of a personal approach to the ceramic process, supported by an investigation of ceramic history.

**Prerequisites:** ARTS 421.

**ARTS 521 - Ceramics II (6 Credits)**

Further development of a personal approach to the ceramic process, supported by an investigation of ceramic history.

**Prerequisites:** ARTS 520.

**ARTS 524 - Workshop: Ceramics (3 Credits)**

Advanced investigation and analysis of problems and methods in ceramics. Topics vary by title.

**ARTS 525 - Three-Dimensional Studies I (3-6 Credits)**

Personal concepts and expressions in various three-dimensional media.

**Prerequisites:** C or Better in ARTS 425 or ARTS 426.

**ARTS 526 - Three-Dimensional Studies II (3-6 Credits)**

Personal concepts and expressions in various three-dimensional media.

**Prerequisites:** C or better in ARTS 425 or ARTS 426.

**ARTS 529 - Workshop: Three-Dimensional Studies (3 Credits)**

Investigation and analysis of various three-dimensional concepts, processes, and techniques. Content varies by title.

**ARTS 530 - Drawing Capstone I (3-6 Credits)**

Further development of individual approaches to drawing with emphasis on intellectual and visual perception as content.

**Prerequisites:** ARTS 431.

**ARTS 531 - Drawing Capstone II (6 Credits)**

Further development of individual drawing with emphasis on intellectual and emotive approaches.

**Prerequisites:** ARTS 530.

**ARTS 532 - Advanced Life Drawing (3 Credits)**

Human anatomy and instruction in drawing and painting the model from life in a variety of media.

**Prerequisites:** ARTS 232 or ARTS 233.

**ARTS 535 - Fiber Arts I (3 Credits)**

Advanced study in the processes and materials of fiber arts.

**Prerequisites:** ARTS 436.

**ARTS 536 - Fiber Arts II (3 Credits)**

Advanced study in the processes and materials of fiber arts.

**Prerequisites:** ARTS 535.

**ARTS 537 - Papermaking (3 Credits)**

The art and techniques of handmade paper.

**ARTS 539 - Workshop: Fiber Arts (3 Credits)**

Advanced study in various technical aspects of fiber arts. Topic varies by title.

**ARTS 545 - Internship in Graphic Design (4 Credits)**

Work experience at a visual communication place of business.

**Prerequisites:** C or better in ARTS 346.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Internships

**ARTS 546 - Graphic Design II (3 Credits)**

Advanced individual projects in graphic design.

**Prerequisites:** ARTS 545.

**ARTS 555 - Jewelmaking I (4 Credits)**

The development of individual directions in jewelmaking.

**Prerequisites:** C or better in ARTS 456.

**ARTS 556 - Jewelmaking II (3 Credits)**

The development of individual directions in jewelmaking.

**Prerequisites:** ARTS 555.

**ARTS 558 - Crafts (3 Credits)**

Contemporary applications of traditional craft media, emphasizing the design and conceptual development of works of art.

**ARTS 559 - Workshop: Jewelmaking (3 Credits)**

Advanced study in various technical aspects of jewelmaking. Topic varies by title.

**ARTS 560 - Photography Thesis: Portfolio (6 Credits)**

Further development of individual approaches to photography.

**Prerequisites:** ARTS 460.

**ARTS 561 - Photography Thesis: Exhibition (6 Credits)**

Further development of individual approaches to photography.

**Prerequisites:** ARTS 461.

**ARTS 564 - Workshop: Photography (4 Credits)**

Advanced investigation and analysis of problems in photography. Topic varies by title.

**ARTS 570 - Visual Arts Computing (3 Credits)**

Advanced visual arts computing techniques on using software such as Photoshop, Studio Pro, and Netscape.

**Prerequisites:** ARTS 102.

**ARTS 590 - Video Art: Theory and Practice (3 Credits)**

Television as a medium; small format video systems are used in the creation of individual projects.

**ARTS 595 - Independent Study (3 Credits)**

Independent study for advanced undergraduate majors and graduate students in art studio. Approved independent study contract required for enrollment.

**ARTS 710 - Painting (3 Credits)**

A multi-level graduate painting class focusing on field work and studio practice through both individual tutorial and group exercises with a painting area faculty member. May be repeated up to a maximum of 15 hours.

**ARTS 715 - Printmaking (3 Credits)**

May be repeated up to a maximum of 15 hours.

**ARTS 720 - Ceramics (3 Credits)**

May be repeated up to a maximum of 15 hours.

**ARTS 725 - Three-Dimensional Studies (3 Credits)**

May be repeated up to a maximum of 15 hours.

**ARTS 730 - Drawing (3 Credits)**

May be repeated up to a maximum of 15 hours.

**ARTS 735 - Fiber Arts (3 Credits)**

May be repeated up to a maximum of 15 hours.

**ARTS 760 - Photography (3 Credits)**

May be repeated up to a maximum of 15 hours.

**Prerequisites:** ARTS 561.

**ARTS 790 - Special Topics in Art (3 Credits)**

Individually directed studies in art. Content varies with instructor. May be repeated up to a maximum of 9 hours.

**ARTS 795 - Independent Study (3 Credits)**

Independent study for advanced graduate students in art studio.

Approved independent study contract required for enrollment.

**ARTS 799 - Thesis Preparation (1-9 Credits)**

May be repeated up to a maximum of 18 hours.

**Prerequisites:** MFA degree candidate status.

**ARTS 810 - Painting (3 Credits)**

A multi-level graduate level painting class that includes both group seminar and individual tutorial under the direction of a painting area faculty member. The course will address student's individual initiatives in context of issues in the medium. May be repeated up to a maximum of 18 hours.

**Prerequisites:** MFA degree candidate status.

**ARTS 815 - Printmaking (3 Credits)**

May be repeated up to a maximum of 18 hours.

**Prerequisites:** MFA degree candidate status.

**ARTS 820 - Ceramics (3 Credits)**

May be repeated up to a maximum of 18 hours.

**Prerequisites:** MFA degree candidate status.

**ARTS 825 - Three-Dimensional Studies (3 Credits)**

May be repeated up to a maximum of 18 hours.

**Prerequisites:** MFA degree candidate status.

**ARTS 830 - Drawing (3 Credits)**

May be repeated up to a maximum of 18 hours.

**Prerequisites:** MFA degree candidate status.

**ARTS 835 - Fiber Arts (3 Credits)**

May be repeated up to a maximum of 18 hours.

**Prerequisites:** MFA degree candidate status.

**ARTS 860 - Photography (3 Credits)**

May be repeated up to a maximum of 15 hours.

**Prerequisites:** MFA degree candidate status.

**ARTS 890 - Special Topics in Art (3 Credits)**

May be repeated up to a maximum of 9 hours.

**Prerequisites:** MFA degree candidate status.

**ARTS 896 - Project (3 Credits)**

Formulation of a proposal for a creative terminal project and initiation of that project.

**Prerequisites:** MFA degree candidate status.

**ARTS 897 - Project (3-6 Credits)**

Creation of creative terminal project.

**Prerequisites:** ARTS 896 and MFA degree candidate status.

## Astronomy (ASTR)

### ASTR 533 - Advanced Observational Astronomy (1-3 Credits)

Development of a combination of observational techniques and facility at reduction of data. A maximum of eight hours per week of observation, data reduction, and consultation. Offered each semester by arrangement with the department.

### ASTR 534 - Advanced Observational Astronomy (1-3 Credits)

A continuation of ASTR 533. Up to eight hours per week of observation, data reduction, and consultation.

### ASTR 599 - Topics in Astronomy (1-3 Credits)

Readings and research on selected topics in astronomy. Course content varies and will be announced in the schedule of classes by title.

## Athletic Training (ATEP)

### ATEP 700 - Introduction to Therapeutic Interventions in Athletic Training (3 Credits)

This course is designed to address the basic knowledge and techniques needed to plan, operate, document, and evaluate therapeutic interventions used in treatment of athletic injuries/illnesses. Includes basic knowledge and techniques of therapeutic interventions; modalities and rehabilitation used by athletic trainers.

### ATEP 701 - Principles of Evidenced-Based Medicine (3 Credits)

Development of essential skills for integrating evidence into healthcare practice. Students will learn how to explore critical questions by accessing, interpreting, evaluating, and integrating relevant research literature in healthcare.

### ATEP 702L - Principles of Athletic Training Lab (1 Credit)

Foundational knowledge and skills for athletic trainers in injury prevention, care and recognition, emergency management and their role as a healthcare provider within the larger context of a changing healthcare system.

### ATEP 711 - Clinical Experiences in Athletic Training I (3 Credits)

A 350-hour clinical education experience to develop clinical skills of the practicing Athletic Training professional in a mentor guided model. Improvement in a selected area of clinical practice, specifically assessment, treatment and rehabilitation of lower/upper extremity injuries will be measured via formative and summative assessment that employs quantitative measures.

### ATEP 712 - Clinical Experiences in Athletic Training II (3 Credits)

A 150-hour clinical education experience to develop the clinical skills of the practicing Athletic Training professional in a mentor guided model. Improvement in a selected area of clinical practice, specifically assessment, treatment and rehabilitation of non-orthopedic conditions will be measured via formative and summative assessment that employs quantitative measures.

**Prerequisites:** ATEP 711.

### ATEP 713 - Clinical Experiences in Athletic Training III (3 Credits)

A 150-hour clinical education experience to develop the clinical skills of practicing Athletic Training professionals in a mentor guided model. Improvement in selected areas of clinical practice, specifically prevention and management of medical emergencies in athletic settings will be measured via formative and summative assessment that employs quantitative measures.

**Prerequisites:** ATEP 712.

### ATEP 714 - Clinical Experiences in Athletic Training IV (3 Credits)

A 350-hour clinical education experience to develop the clinical skills of the practicing Athletic Training professional in a mentor guided model. Improvement in a selected area of clinical practice, specifically behavioral health and wellness of patients will be measured via formative and summative assessment that employs quantitative measures.

**Prerequisites:** ATEP 713.

### ATEP 715 - Clinical Experiences in Athletic Training V (6 Credits)

A 450-hour clinical education immersive experience to develop clinical skills of the practicing Athletic Training professional in a setting preferred by the student. Improvement in a selected area of clinical practice will be measured via formative and summative assessment that employs quantitative measures.

**Prerequisites:** ATEP 714.

### ATEP 730 - Behavioral Health and Wellness (3 Credits)

Integration of physiological, psychological, and social constructs in relationship to physical performance and clinical decision making to enhance patient care. Specific focus will be on understanding individual differences in behavior in the areas of physical fitness, nutrition, and mental health.

### ATEP 732 - Emergency Management Practices in Athletic Training (3 Credits)

Examination of common injuries and illnesses that can cause medical emergencies in sport and physical activity. The majority of the class will be analyzing research related to these conditions to determine prevention and treatment strategies. Education, gender issues, politics, and media will also be a platform for class discussions.

### ATEP 733 - Evidence Based Practice in Medical Emergencies (3 Credits)

Examination of common injuries and illnesses that lead to medical emergencies (e.g., sudden death) in sport and physical activity. Critical analysis of research to determine prevention and treatment strategies.

### ATEP 734 - Evidence-Based Approach to Evaluation, Treatment, and Rehabilitation (3 Credits)

Advanced study of principles of evidence-based medicine and the interpretation of clinical research that assesses evaluation, treatment, and rehabilitation of injuries.

### ATEP 735 - Contemporary Issues in Athletic Training (3 Credits)

Examination of issues shaping the athletic training profession with an emphasis on practical application and professional development.

### ATEP 736 - Advanced Treatment and Rehabilitation of Athletic Injuries (3 Credits)

Advanced study of the treatment of athletic injuries focusing on the concepts and principles of a comprehensive rehabilitation program, including therapeutic exercise and therapeutic modalities.

### ATEP 737 - Current Research in Athletic Training Education (3 Credits)

Examination of current literature in athletic training education as it pertains to the clinical and didactic experiences of athletic training students, clinical instructors, and practicing professionals.

### ATEP 738 - Advanced Athletic Training Practicum I (1-3 Credits)

Provides advanced practical experience and the integration of evidence-based practice in the sports medicine settings. Course content will focus on graduate research project and topics related to athletic training education.

**ATEP 739 - Advanced Clinical Practicum in Athletic Training II (1-3 Credits)**

Provides advanced practical experience and the integration of evidenced-based practice on the sports medicine settings. Course content will focus on graduate research project and topics related to athletic training administration and management.

**ATEP 740 - Evidence Based Practice in Weight Management Assessment (3 Credits)**

Critical analysis of the current literature on weight control and health, metabolism, energy balance, and roll of diet and exercise in prevention and/or treatment in weight management in the physically active population.

**ATEP 741 - Advanced Clinical Skills in Athletic Training (3 Credits)**

This course is designed to assess the advanced clinical skills of graduate athletic training students in their ability to evaluate, manage and prevent athletic injuries. The content of this course will focus on advanced athletic training clinical skills and evidence-based practice.

**ATEP 748 - Evaluation and Therapeutic Intervention of Lower Extremity Injuries (4 Credits)**

Study of the lower extremities as they relate to the prevention; recognition, evaluation and assessment; immediate care; and treatment, rehabilitation and reconditioning of injuries and illnesses to athletes and others engaged in physical activity.

**ATEP 748L - Evaluation & Therapeutic Intervention of Lower Extremity Injuries Lab (1 Credit)**

Integration of knowledge and skills for orthopedic/physical assessment of common injuries to the lower body.

**Corequisite:** ATEP 748.

**ATEP 749 - Evaluation and Therapeutic Intervention of Head, Neck and Spine Injuries (4 Credits)**

Study of the Head, Neck and Spine as they relate to the prevention; recognition, evaluation and assessment; immediate care; and treatment, rehabilitation and reconditioning of injuries and illnesses to athletes and others engaged in physical activity.

**ATEP 749L - Evaluation & Therapeutic Intervention of Head, Neck, & Spine Injuries Lab (1 Credit)**

Integration of knowledge and skills for orthopedic/physical assessment of common injuries to the head, neck and spine.

**Corequisite:** ATEP 749.

**ATEP 750 - Evaluation and Therapeutic Intervention of Upper Extremity Injuries (4 Credits)**

Study of the upper extremities as they relate to the prevention; recognition, evaluation and assessment; immediate care; and treatment, rehabilitation and reconditioning of injuries and illnesses to athletes and others engaged in physical activity.

**ATEP 750L - Evaluation & Therapeutic Intervention of Upper Extremity Injuries Lab (1 Credit)**

Integration of knowledge and skills for orthopedic/physical assessment of common injuries to the upper body.

**Corequisite:** ATEP 750.

**ATEP 770 - Research Methods & Prospectus Writing in Athletic Training (3 Credits)**

The study of applicable methods and tools of research in athletic training. Introduction of methods of research in athletic training, encompassing aspects of study planning, research design, participant sampling, measurement, data analysis, ethics, and reporting in sports medicine.

**ATEP 796 - Athletic Training Administration (3 Credits)**

Examination of fundamental principles of administration and assessment of the delivery of athletic training services in the context of the larger health care system. Specific focus business management principles associated with athletic training clinical practice and as well as leadership and professional development to achieve the best patient outcomes.

**ATEP 797 - Clinical Pathology and Pharmacology in Athletic Training (2 Credits)**

Examination of injury, illness and/or disease of various body systems; specific understanding of medical diagnostics, interventions (including pharmacology) and participation considerations for the athletic population are addressed.

**ATEP 797L - Clinical Pathology & Pharmacology in Athletic Training Lab (1 Credit)**

Integration of knowledge and skills for athletic trainers in the physical assessment of common injury, illness and/or disease of various body systems.

**Corequisite:** ATEP 797.

**ATEP 798 - Project in Athletic Education (3 Credits)**

Independently executed project designed to expand the student's knowledge of athletic training.

**ATEP 799 - Thesis Preparation (1-9 Credits)**

## Biology (BIOL)

**BIOL 502 - Environmental Microbiology (3 Credits)**

An overview of the microbial world including a survey of the distribution, functioning, and diversity of microorganisms in natural systems. Discusses the crucial roles that microorganisms play in ecosystem function, biogeochemical cycles, and environmental quality.

**Prerequisites:** MSCI 102 or BIOL 102, CHEM 112.

**Cross-listed course:** MSCI 503

**BIOL 505 - Developmental Biology (3 Credits)**

An introduction to the descriptive and experimental embryology of animals. Living and preserved specimens will be used to demonstrate the basic processes of embryogenesis. Three lecture hours per week.

**Prerequisites:** or Corequisite: BIOL 302.

**BIOL 505L - Developmental Biology Laboratory I (1 Credit)**

Descriptive and experimental exercises related to embryology. One three-hour laboratory per week.

**Corequisite:** BIOL 505.

**BIOL 506 - Developmental Biology II (3 Credits)**

Molecular aspects of development from gamete formation through tissue and organ differentiation in plants and animals. Three lecture hours per week.

**Prerequisites:** BIOL 505.

**BIOL 506L - Developmental Biology Laboratory II (1 Credit)**

A series of experimentally oriented laboratory exercises will be performed. One three-hour laboratory per week.

**Prerequisite or Corequisite:** BIOL 506.

**BIOL 510 - Invertebrate Zoology (4 Credits)**

Phylogenetic and comparative aspects of anatomy, physiology, reproduction, and embryology of the invertebrates.

**Prerequisites:** BIOL 301 or MSCI 311.

**Cross-listed course:** MSCI 510

**Graduation with Leadership Distinction:** GLD: Research

**BIOL 523 - Plant Development (3 Credits)**

Descriptive and molecular examination of the processes and mechanisms used by plants in organogenesis, differentiation, and morphogenesis. Three lecture hours per week.

**Prerequisites:** BIOL 302 and BIOL 303.

**BIOL 523L - Plant Developmental Laboratory (1 Credit)**

Experiments utilizing a genetic approach to the study of plant development. Three laboratory hours per week.

**Corequisite:** BIOL 523.

**BIOL 524 - Mycology (4 Credits)**

Taxonomy and morphology of fungi; cultivation, life histories, and economic importance; all classes and major orders considered. Three lecture hours per week.

**Prerequisites:** BIOL 301.

**BIOL 525 - Marine Plants (4 Credits)**

Diversity, distribution, physiology, ecology, evolution, and economic importance of marine algal, seagrass, and mangrove communities. Three lecture and three laboratory hours per week. Scheduled field trips are required.

**Prerequisites:** BIOL 301 or MSCI 311.

**Cross-listed course:** MSCI 525

**BIOL 526 - The Fall Flora (4 Credits)**

Two lecture and four laboratory hours per week.

**Prerequisites:** BIOL 301.

**BIOL 527 - The Spring Flora (4 Credits)**

Two lecture and four laboratory hours per week.

**Prerequisites:** BIOL 301.

**BIOL 528 - The Summer Flora (4 Credits)**

Two lecture and four laboratory hours per week.

**Prerequisites:** BIOL 301.

**BIOL 530 - Histology (4 Credits)**

An introduction to the tissues that make up the human body. The microscopic anatomy of tissues is examined and discussed in terms of function and physiology. Three lecture hours and four laboratory hours per week.

**BIOL 531 - Parasitology (4 Credits)**

Parasites of biological, economic, and public health importance. Three lecture and three laboratory hours per week.

**Prerequisites:** 300 level Biology course or equivalent.

**Cross-listed course:** ENHS 661, EPID 661

**BIOL 534 - Animal Behavior (3 Credits)**

A comparative survey of behavior patterns of animals from protists to humans and the physiological mechanisms underlying behavior.

**Prerequisites:** BIOL 301 or MSCI 311.

**BIOL 534L - Animal Behavior Laboratory (1 Credit)**

Observational and experimental methods used in classifying animal behavior patterns and in determining underlying control mechanisms. One three-hour laboratory per week.

**Prerequisite or Corequisite:** BIOL 534.

**BIOL 535 - Fishery Management (3 Credits)**

Management and conservation of aquatic and marine resources, with emphasis on fisheries. Data procurement and analysis; commercial and recreational fisheries; sociological, political, legal, and environmental factors that affect fishery management; and fish biodiversity.

**Prerequisites:** BIOL 301.

**Cross-listed course:** MSCI 535

**BIOL 536 - Ichthyology (4 Credits)**

Phylogeny, morphology, behavior, and ecology of fishes. Three lecture and 3 laboratory hours plus three field trips to be arranged.

**Prerequisites:** BIOL 301 or MSCI 311.

**Cross-listed course:** MSCI 536

**Graduation with Leadership Distinction:** GLD: Research

**BIOL 537 - Aquaculture (3 Credits)**

Introduction to the practical and scientific aspects of the commercial culture of freshwater and marine organisms. Three lecture hours per week. One all-day field trip required.

**Prerequisites:** BIOL 301 or MSCI 311.

**BIOL 538 - Behavior of Marine Organisms (4 Credits)**

The identification of behavioral adaptations of estuarine and marine organisms: their ecology, physiology, development, and evolutionary history; field observations.

**Prerequisites:** BIOL 101 and BIOL 102 or MSCI 311.

**Cross-listed course:** MSCI 538

**Graduation with Leadership Distinction:** GLD: Research

**BIOL 541 - Biochemistry (3 Credits)**

Description of biological macromolecules and major metabolic pathways.

**Prerequisites:** C or higher in CHEM 334.

**Cross-listed course:** CHEM 550

**BIOL 541L - Biochemistry Laboratory (1 Credit)**

Experiments and demonstrations illustrating the principles of biochemistry. Three laboratory hours per week.

**Prerequisite or Corequisite:** C or higher in CHEM 550 or BIOL 541 or CHEM 555 or BIOL 545.

**Cross-listed course:** CHEM 550L

**BIOL 543 - Comparative Physiology (3 Credits)**

An integrative and comparative study of the structure, function, and evolution of the physiological systems of animals. Three lecture hours per week.

**Prerequisites:** BIOL 302 or MSCI 311.

**BIOL 543L - Comparative Physiology Laboratory (1 Credit)**

Laboratory exercises to illustrate principles from BIOL 543. Three hours per week.

**Corequisite:** BIOL 543.

**BIOL 545 - Biochemistry/Molecular Biology I (3 Credits)**

Essentials of modern biochemistry. First semester of a two-semester course. Three lecture hours per week.

**Prerequisites:** C or higher in CHEM 334.

**Cross-listed course:** CHEM 555

**BIOL 546 - Biochemistry/Molecular Biology II (3 Credits)**

Essentials of modern biochemistry and molecular biology. Three lecture hours per week.

**Prerequisites:** C or higher in BIOL 302.

**Cross-listed course:** CHEM 556

**BIOL 549 - Plant Physiology (4 Credits)**

A general survey of the major physiological processes in plants. Two lecture and four laboratory hours per week.

**Prerequisites:** BIOL 302 and BIOL 425.

**BIOL 550 - Bacteriology (3 Credits)**

Introduction to bacteria and viruses emphasizing ultrastructure, physiology, genetics, and growth. Discussion of public health, industrial, and environmental microbiology. Three lecture hours per week.

**Prerequisites:** BIOL 302 or MSCI 311.

**Corequisite:** BIOL 550L.

**Graduation with Leadership Distinction:** GLD: Research

**BIOL 550L - Bacteriology Laboratory (1 Credit)**

Three laboratory hours per week.

**Corequisite:** BIOL 550.

**BIOL 552 - Population Genetics (3 Credits)**

An introduction to the principles of population genetics, with emphasis on the origin, maintenance, and significance of genetic variation in natural populations.

**Prerequisites:** BIOL 301, MSCI 302, and BIOL 303.

**Cross-listed course:** MSCI 552

**Graduation with Leadership Distinction:** GLD: Research

**BIOL 553 - Genomics (3 Credits)**

Current concepts and applications of genomics, addressing questions from throughout biological inquiry.

**Prerequisites:** BIOL 301, BIOL 303.

**BIOL 558 - Stem Cells and The Physiological Environment (3 Credits)**

Discussion of how physiological factors, like nutritional status, influence systemic signals to alter stem cell activity, and the physiological stimuli that impact stem cell activity in a variety of organisms (from worms to humans).

**Prerequisites:** C of higher in BIOL 302.

**BIOL 570 - Principles of Ecology (3 Credits)**

Interactions of organisms and the environment; ecosystem structure and functions. Three lecture hours per week.

**Prerequisites:** BIOL 301 or MSCI 311.

**BIOL 570L - Principles of Ecology Laboratory (1 Credit)**

Three hours per week.

**Prerequisite or Corequisite:** BIOL 570.

**BIOL 571 - Conservation Biology (3 Credits)**

Principles of conservation biology. Importance of biodiversity, causes of decline and extinction, and restoration and conservation policy in terrestrial and aquatic ecosystems.

**Prerequisites:** BIOL 301.

**Cross-listed course:** ENVR 571

**BIOL 572 - Freshwater Ecology (3 Credits)**

Quantitative study of the population, community and evolutionary ecology of freshwater habitats (lakes, ponds, rivers, streams, wetlands). Includes mandatory field trips.

**Prerequisites:** BIOL 301.

**Cross-listed course:** ENVR 572

**BIOL 574 - Marine Conservation Biology (3 Credits)**

Exploration of how human activities affect marine natural populations, species, communities and ecosystems, including threats to biodiversity; approaches to marine conservation; and ecological and evolutionary responses to anthropogenic disturbance.

**Prerequisites:** BIOL 301.

**Cross-listed course:** MSCI 574

**BIOL 575 - Marine Ecology (3 Credits)**

Structure, dynamics, and interactions between populations and communities in marine ecosystems. Attendance at designated departmental seminars is required. Three lecture hours per week.

**Prerequisites:** CHEM 111 and BIOL 301 or MSCI 311.

**Cross-listed course:** MSCI 575

**BIOL 575L - Marine Ecology Laboratory (1 Credit)**

Laboratory and field exercises in coastal environments.

**Prerequisite or Corequisite:** BIOL 575.

**Cross-listed course:** MSCI 575L

**BIOL 576 - Marine Fisheries Ecology (3 Credits)**

Interdisciplinary examination of the distribution, reproduction, survival, and historical variation of the principal commercial marine fisheries.

**Prerequisites:** BIOL 301.

**Cross-listed course:** MSCI 576

**BIOL 577 - Ecology of Coral Reefs (4 Credits)**

Structure, productivity, and biodiversity of coral reefs, emphasizing their sensitivity, stability, and sustainability. Taught as an extended field experience with daily lectures and guided research activities.

**Prerequisites:** BIOL 301 or MSCI 311.

**Cross-listed course:** MSCI 577

**BIOL 588 - Genomic Data Science (3 Credits)**

This course focuses on quantitative knowledge for interdisciplinary applications in genetics as well as hands-on experience in analyzing genetic data. In this course, students will have programming exercises in using analysis tools to conduct genome-wide analysis, annotation, and interpretation of genetic data using R/Bioconductor packages.

**Prerequisites:** C or better in STAT 201 or higher.

**Cross-listed course:** STAT 588

**BIOL 599 - Topics in Biology (1-3 Credits)**

Current developments in biological sciences. Readings and research on selected topics. Course content varies and will be announced in the schedule of classes by title.



**BIOL 610 - Hallmarks of Cancer (3 Credits)**

Survey of current concepts regarding the molecular and genetic factors that regulate the origin and progression of cancer. Readings based on current primary literature.

**Prerequisites:** BIOL 302 and BIOL 303.

**BIOL 612 - Virology - Classical and Emerging Concepts (3 Credits)**

Advanced study of viruses with regard to biochemical, molecular, pathological, epidemiological, and biotechnological aspects. Focus on animal viruses with particular emphasis on human pathogens.

**Prerequisites:** BIOL 302.

**BIOL 614 - Stem Cell Biology (3 Credits)**

Focuses on the understanding of how stem cells can be used to make fundamental biological discoveries with a special focus in neuroscience.

**Prerequisites:** C or better in BIOL 302.

**BIOL 620 - Immunobiology (3 Credits)**

Basic immunological concepts including antibody structure, function, and genetics; cellular immunology; transplantation; hypersensitivity; autoimmunity; and immunity to infectious diseases.

**Prerequisites:** BIOL 302.

**BIOL 625 - Medical Mycology (3 Credits)**

Advanced study of infectious diseases caused by fungi. Etiology, symptoms, and treatment of fungi related illnesses.

**Cross-listed course:** ENHS 625

**BIOL 627 - Marine Phytoplankton (3 Credits)**

Examines the physiology and ecology of phytoplankton, including environmental controls on community composition, primary productivity, and detection and characterization of water quality (eutrophication) and harmful algal blooms.

**Prerequisites:** MSCI 102 or MSCI 450 or BIOL 450.

**Cross-listed course:** MSCI 627

**BIOL 630 - Biology of Birds (3 Credits)**

Biology of birds at molecular, organismal, and population levels, emphasizing unique adaptations of the class of Aves.

**Prerequisites:** BIOL 301, BIOL 302, and BIOL 303.

**BIOL 634 - Biology of Neurological Diseases (3 Credits)**

Advances in molecular and cellular neurobiology that bring new understanding for human neurological disease.

**Prerequisites:** BIOL 302 and SCHC 330 or BIOL 405.

**BIOL 635 - Neurophysiology (4 Credits)**

Descriptive and experimental aspects of the neural basis of behavior, emphasizing cellular and molecular mechanisms. Two lecture and six laboratory hours per week. Three lecture hours per week.

**Prerequisites:** BIOL 302.

**BIOL 640 - Microbial Ecology (3 Credits)**

Interactions of microorganisms with each other, with more complex organisms, and with their environments. Three lecture hours per week.

**Prerequisites:** BIOL 550 and either BIOL 301 or MSCI 311.

**BIOL 641 - Biophysical Ecology (3 Credits)**

This course examines how the mechanisms by which animals and plants interact with their physical environments influence organismal physiology.

**Prerequisites:** BIOL 301, MATH 141 or MATH 122.

**BIOL 650 - Biochemical Evolution (3 Credits)**

Advanced study of related aspects of biological evolution. Rise of life from physical and chemical precursors, biochemical basis of adaptation to ecological pressures, and biochemical aspects of the origins and maintenance of biodiversity.

**Prerequisites:** BIOL 301, BIOL 302, BIOL 303.

**BIOL 651 - Limnology (4 Credits)**

A study of the aquatic environment and its biota. Three lecture and four laboratory hours per week.

**Prerequisites:** BIOL 301.

**BIOL 652 - Evolutionary Biology (3 Credits)**

An advanced course in evolutionary biology, including natural selection, neutral evolution, molecular evolution population genetics, quantitative genetics, sexual selection, speciation, human evolution, and the evolution of disease.

**Prerequisites:** BIOL 301 and BIOL 303.

**BIOL 653 - Bioinformatics (3 Credits)**

Studies of the principles of genetics and molecular biology as applied to adaptive evolution of genes and genomes.

**Prerequisites:** BIOL 302, BIOL 303.

**BIOL 654 - Speciation (3 Credits)**

Speciation as the source of biological diversity. Historical and biological viewpoints. Analysis of concepts of species and models of speciation. Two lectures and one recitation per week.

**Prerequisites:** BIOL 301 or BIOL 652.

**BIOL 655 - Biotechnology (3 Credits)**

Studies in molecular biology and genetics with emphasis on the use of newly developed techniques in biotechnology. Three lecture hours per week.

**Prerequisites:** BIOL 302 and BIOL 303.

**BIOL 656 - Experimental Biotechnology (4 Credits)**

Techniques used in biotechnology will be employed in the context of an experimental project. Twelve laboratory hours per week.

**Prerequisites:** BIOL 302, BIOL 302L.

**BIOL 660 - Biology of Mammals (4 Credits)**

Evolution, systematics, genetics, ecology, and adaptation of mammals. Emphasis on native South Carolina species. Two lectures and one two-hour laboratory per week, plus five field trips to be arranged.

**Prerequisites:** BIOL 301 or MSCI 311.

**BIOL 662 - Signal Transduction and Pathogenesis (3 Credits)**

Signaling pathways involved in human diseases, such as cancer, AIDS, autoimmune diseases and diabetes, and cellular processes involving apoptosis, cell cycle, cell-cell adhesion, growth factors, hormones, G protein-coupled receptors, cytokines and immune response.

**Prerequisites:** BIOL 302 and BIOL 303.

**BIOL 665 - Human Molecular Genetics (3 Credits)**

Molecular mechanisms underlying gene action and differentiation in man; the genetic bases for human variability and inborn metabolic errors leading to inherited diseases.

**Prerequisites:** BIOL 302 and BIOL 303.

**BIOL 667 - Molecular and Genetic Mechanisms of Disease Pathogenesis (3 Credits)**

An advanced examination of the molecular mechanisms underlying gene action in humans. Current literature illustrating the genotype-phenotype relationship in human disease pathogenesis will be discussed.

**Prerequisites:** BIOL 302 and BIOL 303.

**BIOL 668 - Metabolic Biochemistry of Human Disease (3 Credits)**

Core concepts of biochemistry as applied to human health and disease.

**Prerequisites:** C or higher in CHEM 555/BIOL 545 or CHEM 550/BIOL 541.

**Cross-listed course:** CHEM 655

**BIOL 670 - Plant Ecology (3 Credits)**

Structure and dynamics of plant populations and communities, including life histories, adaptations, and plant interactions. Three lecture hours per week.

**Prerequisites:** BIOL 301.

**BIOL 670L - Plant Ecology (1 Credit)**

Laboratory and field exercises in plant ecology. Four hours per week.

**Prerequisite or Corequisite:** BIOL 670.

**BIOL 671 - Plant Responses to the Environment (3 Credits)**

Physiological, molecular, and genetic examination of induced plant responses to various biotic and abiotic environmental stresses.

**Prerequisites:** BIOL 302.

**BIOL 690 - Ultramicroscopy (3 Credits)**

Theoretical and practical aspects of scanning and transmission electron microscopy, digital image acquisition and energy dispersive x-ray spectroscopy. Two lecture and one laboratory hour per week, plus a research project to be arranged.

**Prerequisites:** BIOL 302 or MSCI 311.

**BIOL 701 - Selected Topics in Biochemistry (1-3 Credits)**

Selected biochemical topics emphasizing research literature. One lecture hour per credit per week.

**Prerequisites:** two semesters of biochemistry.

**BIOL 702 - Selected Topics in Plant Biology (1-3 Credits)**

Selected botanical topics emphasizing research literature. One lecture hour per credit per week.

**Prerequisites:** two semesters of botany.

**BIOL 703 - Selected Topics in Ecology (1-3 Credits)**

Selected ecology topics emphasizing research literature. One lecture hour per credit per week.

**Prerequisites:** two semesters of ecology.

**BIOL 704 - Selected Topics in Genetics and Developmental Biology (1-3 Credits)**

Selected genetic and developmental biology topics emphasizing research literature. One lecture hour per credit per week.

**BIOL 705 - Selected Topics in Zoology (1-3 Credits)**

Selected zoological topics emphasizing research literature. One lecture hour per credit per week.

**BIOL 711 - Structure and Function of Nucleic Acids (3 Credits)**

A detailed study of nucleic acids including their structure/chemistry, biosynthesis, processing, and biological functions.

**BIOL 712 - DNA Transactions and Gene Expression (3 Credits)**

Advanced topics in Mendelian genetics, DNA repair/recombination, and mechanisms of gene expression. Three lecture hours per week.

**Prerequisites:** BIOL 303 or equivalent and BIOL 711.

**BIOL 714 - Advanced Cell Biology (3 Credits)**

Problems of cellular organization, interactions, and control. Cell growth and death, cell-cell recognition and communication, intracellular transport, the structure and assembly of cellular organelles, somatic cell genetics, and evolution of cells. Three lecture hours per week.

**Prerequisites:** BIOL 541 or equivalent.

**BIOL 717 - Biological Chemistry (3 Credits)**

A comprehensive treatment of the chemistry, metabolism, regulation, and function of biological systems.

**BIOL 718 - Biological Chemistry II (3 Credits)**

A continuation of BIOL 717. Three lecture hours per week.

**Prerequisites:** BIOL 717.

**BIOL 722 - Aquatic Bacteriology (3 Credits)**

The ecology and physiology of freshwater and marine bacteria. The functions of bacteria in aquatic habitats and the public health aspects of pollution as they relate to microbiology. Three lecture hours per week.

**Prerequisites:** BIOL 330 or equivalent.

**BIOL 722L - Aquatic Bacteriology Laboratory (1 Credit)**

Three laboratory hours per week.

**Prerequisite or Corequisite:** BIOL 722.

**BIOL 725 - Embryology of Angiosperms (3 Credits)**

Two lectures and two laboratory periods per week.

**BIOL 726 - Soil-Plant Relationships (3 Credits)**

Two lecture and three laboratory hours per week.

**Prerequisites:** BIOL 102.

**BIOL 727 - Marine Phytoplankton (3 Credits)**

Three lecture hours and one three-hour laboratory per week.

**Prerequisites:** BIOL 627.

**BIOL 728 - Advanced Phycology (3 Credits)**

Three lecture hours and one three-hour laboratory per week.

**Prerequisites:** BIOL 627.

**BIOL 729 - The Biology of Fish (3 Credits)**

Three lecture hours per week.

**BIOL 730 - The Biology of Fish (3 Credits)**

One seminar and six laboratory hours per week.

**Prerequisite or Corequisite:** BIOL 729.

**BIOL 731 - Advanced Invertebrate Zoology I (3 Credits)**

Principles of systematics and an in-depth study of invertebrate phylogeny and ecology. Two lecture and three laboratory hours per week.

**Prerequisites:** invertebrate zoology.

**BIOL 734 - The Vertebrates (3 Credits)**

Three lectures or conferences per week.

**BIOL 736 - Advanced Developmental Biology (3 Credits)**

The biochemical and molecular mechanisms by which a variety of organisms develop. Three lecture hours per week.

**Prerequisites:** BIOL 340 or BIOL 505, or equivalent.

**BIOL 741 - Fungal Physiology (3 Credits)**

Three lecture and three laboratory hours per week.

**BIOL 748 - Molecular Endocrinology (3 Credits)**

A brief introduction to general endocrinology followed by an in-depth examination of the molecular mechanisms of hormone action, including receptors, second messengers, and hormonal control of transcription/translation. The evolution of hormone-receptor systems will also be examined.

**Prerequisites:** CHEM 332.

**BIOL 749 - Methods in Molecular and Cell Biology (3 Credits)**

Team-taught course on the theory and practice of laboratory techniques for investigating the structure and function of cellular components, especially organelles, proteins, and nucleic acids. Three lecture hours per week. Lectures will be supplemented with laboratory demonstrations.

**Prerequisites:** one semester of biochemistry.

**BIOL 750 - Advanced Biological Oceanography (3 Credits)**

Three lecture hours per week.

**Prerequisites:** BIOL 450/MSCI 450.

**BIOL 752 - Marine Biogeochemistry (3 Credits)**

Biological, chemical, geological, and physical processes that influence the cycling of major bioactive elements (C, O, N, P, S) in marine waters and sediments.

**Cross-listed course:** MSCI 752

**BIOL 753 - Developmental Genetics (3 Credits)**

The action of genes in development and differentiation at the molecular, cellular, and organ (tissue) levels, with examples taken from microorganisms, plants, animals, and man. Three lecture hours per week.

**Prerequisites:** BIOL 350 and two semesters of biochemistry or equivalents.

**BIOL 754 - Oceanographic Techniques (1 Credit)**

Shipboard experience with basic techniques used by geological, physical, chemical, and biological oceanographers.

**Cross-listed course:** GEOL 754

**BIOL 755 - Quantitative Ecology (3 Credits)**

An intensive field course centered around field problems in a variety of habitats (freshwater, terrestrial, estuarine). Students will use a variety of quantitative sampling methods to test ecological hypotheses on several two-day field trips.

**Prerequisites:** BIOL 570.

**BIOL 757 - Special Topics in Biology (1-4 Credits)**

An intensive consideration of topics of current interest in biology. One lecture hour per credit per week.

**BIOL 758 - Research (1-3 Credits)**

Appropriate designation will be made for the particular program in any given semester.

**BIOL 759 - Physiological Ecology (3 Credits)**

Two lecture and three laboratory hours per week.

**BIOL 760 - Electron Microscopy (3 Credits)**

Theory and design of modern electron microscopes; advancement in the theory and practice of specimen preparation of biological materials; interpretation of ultrastructure of cells and tissues. Three lecture hours a week.

**BIOL 760L - Electron Microscopy Laboratory (1 Credit)**

Four laboratory hours per week.

**Prerequisite or Corequisite:** BIOL 760.

**BIOL 762 - Wetlands Ecology (3 Credits)**

A survey of the structure and function of wetland ecosystems emphasizing the current literature.

**BIOL 763 - Biology of Populations (3 Credits)**

Three lecture and two laboratory hours per week.

**BIOL 764 - Advanced Plant Physiology (3 Credits)**

Study of modern advances in plant physiology. Plant biotechnology topics, such as tissue culture, nitrogen fixation, photosynthesis, weed and pest control, molecular cloning, and genetic manipulation. Three lecture hours per week.

**Prerequisites:** BIOL 549.

**BIOL 765 - Theoretical Ecology (3 Credits)**

Theoretical bases of ecology are explored from current literature with topics from organismal, populational, community, and ecosystem approaches. Principles for the construction and testing of hypotheses and models.

**Prerequisites:** BIOL 570.

**BIOL 766 - Evolutionary Biology (3 Credits)**

Theoretical and empirical studies of the evolutionary process. Historical perspective of major developments in evolution as well as modern quantitative and ecological genetic studies.

**BIOL 768 - Ecological Modeling and Environmental Planning (4 Credits)**

Concepts in systems ecology and ecological modeling. Emphasis on the use of models and computer simulations in examining environmental interactions, predicting environmental impact, and facilitating the process of environmental planning.

**Cross-listed course:** ENHS 767, MSCI 767

**BIOL 769 - Reproductive Ecology (3 Credits)**

Theoretical aspects and examples of the variety of reproductive and life history patterns found in animals and plants as adaptations to various environmental constraints. Three lecture hours per week.

**Prerequisites:** BIOL 570.

**Cross-listed course:** MSCI 769

**BIOL 770 - Current Topics in Molecular Biology (3 Credits)**

Recent developments in cellular and molecular biology including genetic mechanisms, ultrastructure, and function of organelles and membranes. Lectures supplemented with readings from current literature. Primarily for the MAT program. Not available for MS or PhD credit in biology.

**BIOL 771 - Current Topics in Developmental Biology (3 Credits)**

Concepts of growth, differentiation, and morphogenesis of organisms in light of recent advances in biological knowledge. Lectures supplemented with readings from current literature. Primarily for the M.A.T. program. Not available for M.S. or Ph.D. credit in biology.

**BIOL 772 - Current Topics in Ecology (3 Credits)**

Ecological concepts with reference to recent advances in environmental sciences. Special attention to the ecology of the coast, swamps, and other habitats of importance in the Southeast. Primarily for the M.A.T. program. Not available for M.S. or Ph.D. credit in biology.

**BIOL 775 - Plants of South Carolina (4 Credits)**

Introduction to the major forms of plant life in the state. Includes fungi, algae, bryophytes, and vascular plants. Lecture-laboratory-field course primarily for the M.A.T. program. Not available for M.S. or Ph.D. credit in biology.

**BIOL 776 - Animals of South Carolina (4 Credits)**

Introduction to the major forms of animal life in the state. Animals will be studied and/or collected in their native habitat. Includes identification, behavior, and ecology of animals with emphasis on vertebrates. Lecture-laboratory-field course primarily for the M.A.T. program. Not available for M.S. or Ph.D. credit in biology.

**BIOL 777 - Statistical Phylogenetics and Molecular Evolution (3 Credits)**

Theory and applications of phylogenetics; estimation via Markov models, likelihood, distances and parsimony; hypothesis testing of evolutionary trees and parameters; related topics including molecular divergence time inference.

**Prerequisites:** B or better in MATH 241 or STAT 510.

**BIOL 798 - Research in Biology (1-9 Credits)**

Directed laboratory research and readings in the biological sciences for M.S. and Ph.D. students prior to preparation of theses and dissertations.

**BIOL 799 - Thesis Preparation (1-9 Credits)****BIOL 801 - Directed Readings in Molecular, Cellular, and Developmental Biology (1 Credit)**

Assigned readings in special topics in molecular, cellular, and developmental biology followed by classroom discussions. Designed to teach critical analysis of the scientific literature.

**BIOL 802 - Seminar in Plant Biology (1-2 Credits)**

A review of current literature in plant biology involving student presentations of seminars. One discussion hour per credit per week. The course may be repeated for credit.

**BIOL 803 - Seminar in Ecology (1-2 Credits)**

A review of current literature in ecology involving student presentations of seminars. One discussion hour per credit per week.

**BIOL 804 - Seminar in Molecular, Cellular, and Developmental Biology (1 Credit)**

Student presentations of papers from the current literature in molecular, cellular, and developmental biology. Designed to give experience in oral presentations. May be repeated.

**BIOL 805 - Seminar in Zoology (1-2 Credits)**

A review of current literature in zoology involving student presentations of seminars. One discussion hour per credit per week.

**BIOL 806 - Perspectives in Biological Research (1 Credit)**

Recent trends in biological research from the perspective of individual faculty members in the department. May be repeated.

**BIOL 899 - Dissertation Preparation (1-12 Credits)**

## Biomedical Engineering (BMEN)

**BMEN 532 - Micro/nanofluidics and Lab-on-a-Chip (3 Credits)**

Basic fluid mechanics, capillary, drop and micro/nanoparticle, electrokinetics; micropump, mixer, preconcentrator, electrophoresis, microactuator and particle manipulator; sensors for pressure, velocity, concentration, temperature in environmental monitoring/biodefence, clinical diagnostics, drug discovery/delivery.

**Prerequisites:** D or better in CHEM 112 and CHEM112L or CHEM 142; D or better in PHYS 212.

**BMEN 537 - Bio Nano/Micro Electro-Mechanical Systems (3 Credits)**

Fundamentals of nano- and microfabrication, metrology and their applications in biomedical engineering and science. The fabrication covers photolithography, nano/microfabrication for nano/microstructures, etching and additive techniques, MEMS integration and packaging, etc. Metrology focuses on characterization of nanostructures with imaging technologies.

**Prerequisites:** D or better in CHEM 112 and CHEM 112L or CHEM 142; D or better in PHYS 212.

**BMEN 546 - Delivery of Bioactive Agents (3 Credits)**

Routes of administration; mechanisms of drug absorption and biological barriers; pharmacokinetic modeling of drug distribution; drug excretion and biotransformation; design and evaluation of controlled release systems, targeted release systems, and responsive release systems.

**Prerequisites:** BIOL 302, CHEM 333, MATH 142.

**BMEN 547 - Immunoengineering (3 Credits)**

Engineering approaches to study and control immune reactions and their applications in therapy and diagnostics for infectious disease, cancer, allergy, autoimmunity, and transplantation.

**Prerequisites:** C or better in BMEN 240 or BIOL 302.

**BMEN 548 - Cardiovascular System: From Development to Disease (3 Credits)**

Survey of cardiovascular development, anatomy, physiology and pathology. Recent advances in our understanding of the basic mechanisms of congenital cardiovascular defects and cardiovascular disease. Engineering principles, detection and treatment of cardiovascular defects.

**Prerequisites:** BMEN 240 or BIOL 302.

**BMEN 565 - Advanced Biomechanics (3 Credits)**

Mathematical and theoretical analysis of the mechanical properties and functions of soft biological tissues to include arterial vessels.

**Prerequisites:** BMEN 260 or BMEN 263.

**BMEN 572 - Tissue Engineering (3 Credits)**

Molecular basis of bioregenerative engineering; biomaterial design; biocompatibility assessment; cell isolation and characterization; rapid prototyping, scaffold fabrication, and biofabrication; protein and gene delivery; bioreactor design; transport in biological tissues; applications of tissue engineering in regenerative medicine.

**BMEN 589 - Special Topics in Biomedical Engineering (1-3 Credits)**

Course content varies and will be announced in the schedule of classes by title. May be repeated as topic varies.

**BMEN 710 - Modeling and Simulation of Biomedical System (3 Credits)**

Analytical and quantitative techniques applied to engineering problems in biomedical transport, tissue mechanics, cellular and organ physiology, and control of medical devices.

**Prerequisites:** MATH 242.

**BMEN 713 - Human Cell and Molecular Biology for Biomedical Engineers (3 Credits)**

Advanced examination of the organization and function of the cell with emphasis on the biophysical and quantitative aspects of cellular function. Emphasis will be on the biomedical engineering applications of regulation of cell division, protein transcription and translation within the cell, cellular energetics, and intracellular networks for cell signaling and cell function.

**BMEN 720 - Transport Phenomena in Biomedical Systems (3 Credits)**

Conservation of momentum, energy, mass, physico-chemical properties of biofluids, blood rheology, circulation models and cardiovascular regulation, solute and oxygen transport in tissues, gas transport in lungs and respiratory gas exchange models, kinetics and compartmental modeling, modeling of artificial organs.

**Prerequisites:** D or better in BMEN 354.

**BMEN 723 - Anatomy and Physiology for Biomedical Engineers (3 Credits)**

An examination of human biological structure and function from an engineering perspective. Engineering principles will be used to analyze anatomical structures and physiological functions at the tissue, organ, and systems levels.

**Prerequisites:** EXSC 224 or BIOL 244.

**BMEN 795 - Biomedical Engineering Literature (1 Credit)**

Critical reading and literacy in the biomedical engineering discipline as it relates to students' research. Graduate Standing in the Biomedical Engineering Program.

**BMEN 797 - Biomedical Engineering Doctoral Research (1-12 Credits)**

Individual research to be arranged with the instructor. Graduate Standing in the Biomedical Engineering Program.

**BMEN 798 - Graduate Seminar in Biomedical Engineering (1 Credit)**

Graduate seminar on current topics in biomedical engineering. Instruction on critical analysis and communication in the discipline.

**BMEN 799 - Biomedical Engineering Masters Thesis Preparation (1-12 Credits)**

Thesis preparation for Masters Program. Graduate Standing in the Biomedical Engineering Program. Grading: Pass/Fail.

**BMEN 898 - Doctoral Seminar in Biomedical Engineering (1 Credit)**

Seminar for doctoral students on current biomedical engineering topics and instruction in professional preparation in the discipline. Graduate Standing in the Biomedical Engineering Program.

**BMEN 899 - Biomedical Engineering Doctoral Dissertation Preparation (1-12 Credits)**

Dissertation preparation for the Ph.D. Program. Graduate standing in the Biomedical Engineering program.

## Biostatistics (BIOS)

**BIOS 650 - Quantitative Methods in the Health Sciences (3 Credits)**

Designed for professionals and pre-professionals who wish to utilize quantitative methods in public and private decision-making; exploratory data analysis, research methods in natural and controlled environments, and elementary biostatistical methods.

**Prerequisites:** STAT 201.

**BIOS 700 - Introduction to Biostatistics (3 Credits)**

Health-related statistical applications. Descriptive statistics, probability, confidence intervals, hypothesis testing, regression, correlation, ANOVA. May not be used as part of a degree program in epidemiology or biostatistics. Three lecture hours and one laboratory hour per week.

**BIOS 701 - Concepts and Methods of Biostatistics (3 Credits)**

Descriptive and inferential statistical applications to public health. Probability, interval estimation, hypothesis testing, measures of association. Three lecture hours and one laboratory hour per week. Intended for those who will be involved in research applications of biostatistics.

**BIOS 709 - Basic Software for Public Health (1 Credit)**

Working with public health data using statistical software. Effective ways to store, clean, merge, and format public health data for analysis.

**BIOS 710 - Effective Data Management for Public Health (3 Credits)**

Statistical data management techniques. Microcomputer applications, communication between microcomputers and mainframe, tape and disk storage, access of large health-related databases.

**Prerequisite or Corequisite:** BIOS 700.

**BIOS 711 - Introduction to R Programming (1 Credit)**

Students will learn the software program R for performing data management. The course covers basic to advanced commands for properly formatting output, merging data, working with functions, graphing, using programming loops for preparing data for analysis for public health data.

**BIOS 712 - Introduction to Stata Software (1 Credit)**

Students will learn the software program Stata for performing data management. The course covers basic to advanced commands for properly formatting output, merging data, working with functions, graphing, using programming loops for preparing data for analysis for public health data.

**BIOS 714 - Introduction to MS Access for Public Health (1 Credit)**

This course focuses the uses of Microsoft Access for data management in public health. The course takes the student through building tables, forms, queries, reports and finishes with automated scripts for each of use with Access.

**BIOS 719 - Advanced SAS Methods for Public Health (1 Credit)**

This course focuses on advanced programming for managing and analyzing data using SAS. Building upon skills learned in BIOS 709 (Introduction to SAS), students will learn data management using PROC SQL. Students will also become familiar with the SAS Macro Language which prepares data for conducting efficient statistical analysis.

**BIOS 745 - Seminar in Biostatistics (1-2 Credits)**

Analysis of current and prospective issues in biostatistics, including historical foundations. Includes student exploration of unsolved problems and examination of central issues in biostatistics.

**BIOS 746 - Introduction to Complex Survey Data Analysis (1 Credit)**

Students will learn the basics of data collection methods, sampling design for linear, logistic, and survival analysis complex models using survey data. Students will also learn about weight adjustments, imputation methods with an emphasis on both applied models and the theory behind them.

**Prerequisites:** BIOS 701 and BIOS 709 or equivalent.

**BIOS 748 - Surgery and Emergency Medicine (2 Credits)**

Specialized medical topics in emergency and surgical medicine.

**BIOS 751 - Health Data Systems (3 Credits)**

Origin and operation of databases serving governmental and institutional policy and management of programs.

**Prerequisites:** BIOS 700, HSPM 700.

**BIOS 752 - Vital Record and Health Survey Data Analysis (3 Credits)**

Accessing, managing, analyzing, and interpreting results from state and national vital records and health survey data sets. Common problems, programming techniques, and analytic considerations.

**Prerequisites:** BIOS 700, BIOS 710, EPID 700.

**BIOS 753 - Community Health Studies (3 Credits)**

Process, skills, and management of undertaking health studies in the human community.

**Prerequisites:** BIOS 700, EPID 700.

**BIOS 754 - Discrete Data Analysis (3 Credits)**

Analysis of discrete data in public health studies. Relative risk, odds ratio, rates and proportions, contingency tables, logistic regression, introduction to other advanced topics. Not for biostatistics majors.

**Prerequisites:** EPID 701, BIOS 710, BIOS 757.

**BIOS 755 - Introduction to Longitudinal Data Analysis (3 Credits)**

Introduction to principles and methods for longitudinal & multi-level modeling. Focus on data analysis and interpretation.

**Prerequisites:** BIOS 757.

**BIOS 757 - Intermediate Biostatistics (3 Credits)**

Public health applications of correlation, regression, multiple regression, single and multi-factor analysis of variance and analysis of covariance.

**Prerequisites:** a course in introductory statistics.

**BIOS 758 - Advanced Linear Models in Biostatistics (3 Credits)**

Public health applications of correlation, regression, multiple regression, single and multi-factor analysis of variance and analysis of covariance. Additional topics in analysis of health data including regression diagnostics, multi-collinearity of observational data, ridge/nonlinear regression, principal components, random/mixed effects, unbalanced designs, repeated measures and sampling and design effects.

**Prerequisites:** BIOS 701.

**BIOS 759 - Theory and Methods of Discrete Data Analysis (3 Credits)**

The concepts, principles, and biostatistical techniques necessary to analyze categorical epidemiological data including dose response curves, life tables, and discrete measures of association. Estimation of parameters for logistic and other commonly used epidemiological models.

**Prerequisites:** EPID 701, BIOS 757.

**BIOS 760 - Biostatistical Methods in Clinical Trials (3 Credits)**

The basic and advanced statistical techniques necessary for the design, conduct, analysis, and interpretation of results of clinical trials.

**Prerequisites:** EPID 741, BIOS 757.

**BIOS 761 - Survival Analysis (3 Credits)**

Methods for the analysis of survival data in the biomedical setting. Underlying concepts; standard parametric and nonparametric methods for one or several samples; concomitant variables and the proportional hazards model.

**Prerequisites:** BIOS 757 or BIOS 758.

**BIOS 762 - Biostatistical Modeling of Genomic Data (3 Credits)**

This course is an introduction to important topics and key concepts in statistical genetics, with emphasis on statistics methods and their applications to human complex diseases. The course will cover major concepts and classical statistical methods for the analysis of family and population based human genetic data.

**Prerequisites:** BIOS 757 or equivalent.

**BIOS 765 - Research Design in the Biomedical Sciences (3 Credits)**

Fundamentals of constructing, analyzing, and interpreting biomedical studies; internal and external validity, sample size determination, completely random designs, blocking crossover designs, factorial designs, confounding, nested designs, repeated measure designs.

**Prerequisites:** EPID 741, BIOS 757.

**BIOS 770 - Applied Longitudinal Data Analysis (3 Credits)**

Modern methods for the analysis of repeated measures, correlated outcomes, and longitudinal data, including repeated measures ANOVA, generalized linear models, random effects, and generalized estimating equations.

**Prerequisites:** BIOS 757 or STAT 701 or STAT 705.

**Cross-listed course:** STAT 771

**BIOS 775 - Biostatistical Aspects of Bioinformatics (3 Credits)**

Bioinformatics analyses related to public health and biomedical research. Gene-gene and gene-environment interaction, phylogeny analysis in disease classification, and clustering for expression data. Data analyses, simulation studies, algorithms, and interpretation of health data.

**Prerequisites:** BIOS 757.

**BIOS 780 - Introduction to Quantile Regression (3 Credits)**

Principles and methods of quantile regression, a robust and distribution-free statistical approach that extends the classical mean regression to the analysis of complex treatment effects.

**Prerequisites:** BIOS 757.

**BIOS 790 - Independent Study (1-6 Credits)**

Directed research on a topic to be developed by M.P.H. or M.S.P.H. student and instructor. May be repeated.

**BIOS 794 - Selected Topics in Biostatistics (1-6 Credits)**

Content varies by title. Course may be repeated for a total of 6 credit hours.

**BIOS 798 - Public Health Practice (1-6 Credits)**

Performance of a limited work or service project in a public need setting, pursuit of planned learning objectives related to previously identified aspects of the student's chosen role. Self-monitoring and regular seminars focusing on learning accomplishments.

**Prerequisites:** 9-10 hours of specified courses including EPID 700, BIOS 700.

**BIOS 799 - Thesis Preparation (1-9 Credits)****BIOS 805 - Categorical Data Analysis (3 Credits)**

Advanced methods for analysis of discrete data. Higher order contingency tables, log-linear and other generalized linear models. Multivariate methods for matched pairs and longitudinal data.

**Prerequisites:** BIOS 759 or STAT 704.

**Cross-listed course:** STAT 770

**BIOS 808 - Environmetrics (3 Credits)**

Statistical methods for environmental and ecological sciences, including nonlinear regression, generalized linear models, spatial analyses/kriging, temporal analyses, meta-analysis, quantitative risk assessment.

**Prerequisites:** BIOS 757 or BIOS 701 or STAT 705.

**Cross-listed course:** STAT 708

**BIOS 809 - Environmetrics II (3 Credits)**

Theoretical underpinnings of environmetrics. Spatial statistics, temporal and longitudinal analysis, hierarchical modeling, and Bayesian inferences for environmental data.

**Prerequisites:** STAT 708 or BIOS 808; STAT 714.

**Cross-listed course:** STAT 709

**BIOS 811 - Survival Analysis II (3 Credits)**

Parametric survival analysis, accelerated failure time model, frailty model, competing risk mode and multi-state model. Techniques motivated by applications in epidemiology and clinical medicine research, applications demonstrated using public health data sets.

**BIOS 815 - Generalized Linear Models (3 Credits)**

Statistical theory and applications extending regression and analysis of variance to non-normal data. An integrated treatment encompassing logistic and other binary regressions, log-linear models, and gamma regression models.

**Prerequisites:** STAT 713 or STAT 513 and STAT 705 or BIOS 757.

**Cross-listed course:** STAT 775

**BIOS 816 - Advanced R Programming in Public Health (3 Credits)**

R is a free and open source software environment for statistical computing and graphics. This course provides the principles and techniques to efficiently design, implement, and execute simulation and data analysis routines in quantitative fields like biostatistics, statistics, engineering, finance, and data science.

**Prerequisites:** BIOS 711.

**BIOS 820 - Bayesian Biostatistics and Computation (3 Credits)**

Bayesian statistical methods including hierarchical modeling and the use of the Markov Chain Monte Carlo (MCMC) methods.

**Prerequisites:** STAT 705 or BIOS 757.

**BIOS 822 - Statistical Methods in Spatial Epidemiology (3 Credits)**

A comprehensive introduction to the statistical methods used in the analysis of geo-referenced spatial health data. Topics range from disease mapping to prospective surveillance.

**Prerequisites:** BIOS 757 and BIOS 759.

**BIOS 825 - Multivariate Biostatistics (3 Credits)**

Analysis of multivariate data as found in biomedical studies: multivariate linear models, principal component analysis, factor analysis, discriminant and cluster analysis. Other special multivariate topics such as principal component regression.

**Prerequisites:** STAT 516 or BIOS 757.

**BIOS 845 - Doctoral Seminar (1-3 Credits)**

May be repeated for credit.

**Prerequisites:** complete at least one semester of course work and consent of instructor.

**BIOS 850 - Binary Dose Response Theory and Methods (3 Credits)**

Threshold, mass action and target theory; empirical dose response functions; methods in current use among health science researchers.

**Prerequisites:** STAT 512.

**BIOS 890 - Independent Study (1-3 Credits)**

Directed research on a topic to be developed by doctoral student and instructor. May be repeated.

**BIOS 894 - Selected Topics in Biostatistics (3 Credits)**

Discussion on current and emerging issues in biostatistics.

**BIOS 898 - Doctor of Public Health Practicum (1-6 Credits)**

Students are required to conduct applied public health methods and strategies as a part of their practicum experience. In particular, the student should successfully implement and interpret the results of biostatistical methods in the organization.

**BIOS 899 - Dissertation Preparation (1-12 Credits)**

**Prerequisite:** one full year (18 hours) of graduate study beyond the master's level.

## BMSC - Biomedical Science (BMSC)

**BMSC 700 - Biomedical Science Interdisciplinary Laboratory I (1 Credit)**

Survey for new biomedical science graduate students of major problem areas and research methods in biomedical science with introduction to faculty, services, facilities, and major equipment of the basic science departments of the School of Medicine.

**BMSC 701 - Biomedical Science Interdisciplinary Laboratory II (3 Credits)**

Intensive tutorial for advanced biomedical science graduate students in laboratory techniques and/or methodology outside of department of specialization.

**Prerequisites:** BMSC 700.

**BMSC 702 - Medical Cell Biology I (4 Credits)**

The structure and assembly of eucaryotic cells, mechanisms of gene expression, and the cell biology of the immune system. Methods in cell biology are also discussed.

**Prerequisites:** basic biochemistry.

**BMSC 705 - Medical Cell Biology II (4 Credits)**

A continuation of BMSC 702, this course will cover cell-cell communication, cell motility, extracellular matrices, stem cells, cellular embryology, and the interactions of viruses with cells. Relevant methods will also be presented.

**Prerequisites:** BMSC 702.

**BMSC 706 - Ethics in Biomedical Research (2 Credits)**

Discussion of major ethical issues related to biomedical research. Two hours of lecture and small-group discussion per week.

**BMSC 707 - Biochemistry for the Biomedical Sciences (3 Credits)**

This course will cover the structure and function of proteins, lipids and carbohydrates. Special emphasis will be on the mechanisms of enzyme catalysis and the influence of the cellular environment on catalysis. The role of specific enzymes such as kinases in signal transduction and metabolic control will be emphasized.

**BMSC 708 - Human Cell and Molecular Biology for Biomedical Sciences (3 Credits)**

Examination of the organization and function of the cell with emphasis on the biophysical and quantitative aspects of cellular function. Emphasis will be on the regulation of cell division, protein transcription and translation within the cell, cellular energetics, and intracellular networks.

**BMSC 710 - Medical Molecular Biology (4 Credits)**

Theory and practice of molecular biology as applied to medical research. Nucleic acid structure and function, methodology, genome organization and DNA dynamics.

**Prerequisites:** BMSC 754, BMSC 755.

**BMSC 720 - Signal Transduction (4 Credits)**

Transmembrane signaling processes and regulatory mechanisms involved in neurotransmission and drug action. Emphasis on membrane receptors linked to ion channels, guanine nucleotide binding proteins, tyrosine kinase activity and intracellular receptors.

**Prerequisites:** BMSC 755.

**BMSC 730 - Cardiovascular Science (4 Credits)**

Anatomy, pathology, pharmacology and physiology of the cardiovascular system taught from a research-oriented perspective.

**BMSC 740 - Human Anatomy for Health Sciences (6 Credits)**

Instruction in normal human anatomy and embryology, as well as pathological variations during disease states, to include advanced anatomical imaging techniques such as radiography and ultrasonography.

**BMSC 741 - Pathophysiology for Health Sciences (6 Credits)**

Pathophysiologic mechanisms that underlie common diseases related to different organ systems.

**BMSC 742 - Summative Experience for Physician Assistants (1 Credit)**

Assessing the Physician Assistant student's readiness for clinical practice. The course will consist of a series of summative evaluations and board preparation.

**BMSC 743 - Clinical Immersion for PAs (2 Credits)**

Introduction to the clinical setting to include HIPAA training, shadowing clinicians, and basic life support training.

**BMSC 744 - Interprofessional Seminar for Health Professionals (1 Credit)**

Formal and informal codes of interprofessional conduct of the health science disciplines. Group discussion of implications for interprofessional research, clinical practice, and administration.

**BMSC 745 - Medical Interviewing (2 Credits)**

Instruction in medical interviewing, medical documentation, patient assessment, and patient management.

**BMSC 746 - Physical Diagnosis (6 Credits)**

Instruction in developing the techniques necessary to begin the evaluation of patients by ascertaining symptoms and evaluating physical signs of disease.

**BMSC 747 - Diagnostic Testing (2 Credits)**

Analysis, utilization and interpretation of diagnostic testing modalities in medicine.

**BMSC 748 - Surgery and Emergency Medicine (2 Credits)**

Specialized medical topics in emergency and surgical medicine.

**BMSC 749 - Clinical Medicine-Across the Lifespan (2 Credits)**

Instruction in clinical skills and knowledge required in primary care practices, including patients of all ages.

**BMSC 750 - Population Health and Health Policy (3 Credits)**

Instruction in patient-centered health care delivery systems to include patient safety, patient education, and preventive medicine with a focus on population health.

**BMSC 751 - Behavioral Health (2 Credits)**

Instruction in clinical skills and knowledge to understand the presentation and mechanisms of mental health problems, emphasizing a psychopathology approach to the patient.

**BMSC 752 - Medical Law and Ethics (2 Credits)**

Ethical issues and legal implications in patient-centered health care delivery systems.

**BMSC 753 - Physician Assistant Professional Practice (1 Credit)**

Instruction related to PA professional issues.

**BMSC 754 - Biomedical Biochemistry I (4 Credits)**

First of a two-semester sequence covering the major areas of biochemistry in a biomedical context. Chemistry of amino acids and proteins, enzymology, metabolism of carbohydrates and lipids. Emphasis is on biomedical research applications. Four lecture hours per week.

**BMSC 755 - Medical Genetics and Laboratory Diagnostics (2 Credits)**

Fundamental genetics, the role of human genetic factors in clinical medicine, and interpretation of laboratory data.

**BMSC 756 - Advancing Medical Practice through Research (3 Credits)**

Instruction in critical thinking skills and research methods to prepare students to search, interpret and evaluate the medical literature and perform clinical research.

**BMSC 758 - Internal Medicine (4 Credits)**

Supervised clinical practicum for physician assistant students in Internal Medicine.

**BMSC 759 - Women's Health (4 Credits)**

Supervised clinical practicum for physician assistant students in OB/GYN.

**BMSC 760 - Pediatrics (4 Credits)**

Supervised clinical practicum for physician assistant students in Pediatrics.

**BMSC 761 - Behavioral Medicine (4 Credits)**

Supervised clinical practicum for physician assistant students in Behavioral Medicine.

**BMSC 762 - General Surgery (4 Credits)**

Supervised clinical practicum for physician assistant students in General Surgery.

**BMSC 763 - Emergency Medicine (4 Credits)**

Supervised clinical practicum for physician assistant students in Emergency Medicine.

**BMSC 764 - Orthopedics (4 Credits)**

Supervised clinical practicum for physician assistant students in Orthopedics.

**BMSC 765 - Practicum Elective (4 Credits)**

Supervised clinical practicum for physician assistant students in area of student's choice with approval of the Director of Clinical Education. Elective can be in a specialty or a core area.

**BMSC 766 - PA Clinical Medicine and Therapeutics I (7 Credits)**

Examines diseases related to different organ systems including review of pathophysiological basis of disease, resulting clinical signs/symptoms and overview of treatment strategies.

**Prerequisites:** BMSC 740 and PHPH 701.

**BMSC 767 - PA Clinical Medicine and Therapeutics II (6 Credits)**

Examines diseases related to different organ systems including review of pathophysiological basis of disease, resulting clinical signs/symptoms and an overview of treatment strategies.

**Prerequisites:** BMSC 766.

**BMSC 768 - PA Clinical Medicine and Therapeutics III (6 Credits)**

Examines diseases related to different organ systems including a review of pathophysiological basis of disease, resulting clinical signs/symptoms and an overview of treatment strategies.

**Prerequisites:** BMSC 767.



**BMSC 769 - PA Clinical Medicine and Therapeutics IV (7 Credits)**

Examines disease related to different organ systems including review of pathophysiological basis of disease, resulting clinical signs/symptoms and overview of treatment strategies.

**Prerequisites:** BMSC 766, BMSC 767, BMSC 768.

**BMSC 770 - Clinical Skills Lab (3 Credits)**

Performing clinical procedures and using technology such as ultrasonography in clinical practice.

**BMSC 780 - Biomedical Research (1-2 Credits)**

Research project conducted with mentor focused on advancing medical practice.

**BMSC 781 - Family Medicine PA Program Practicum (4 Credits)**

First of two supervised clinical practicums for physician assistant students in Family and Preventive Medicine.

**Prerequisites:** Successful completion of the didactic PA program coursework during the first year.

**BMSC 782 - Family Medicine PA Program Practicum 2 (4 Credits)**

2nd of two four-week supervised clinical rotations for physician assistant students in Family and Preventive Medicine.

**Prerequisites:** BMSC 781.

**BMSC 783 - Physician Assistant Capstone Portfolio (1 Credit)**

Portfolio project conducted with faculty mentor focused on community service, continuing medical education, evidence-based medicine, research, and advancing medical practice.

**BMSC 799 - Thesis Preparation (1-9 Credits)****BMSC 801 - Seminar in Biomedical Science (2 Credits)**

Professional development and scientific update by attending Biomedical Science Seminar Series and meeting with speakers in section one for one credit. Section two for two credits also includes student presentations of literature review topics and current research. May be repeated for credit.

## Business Administration (BADM)

**BADM 700 - Master of Science Project (1-15 Credits)**

Preparation of an applied research project in a functional area of business administration under the supervision of a graduate faculty member.

**BADM 780 - Readings and Research (1-3 Credits)****BADM 790 - Special Topics in Business (1-6 Credits)**

Analysis of current topics, issues, and practices in business. May be repeated as content varies by title for a maximum of 9 credit hours per program of study.

**BADM 799 - Thesis Preparation (1-9 Credits)**

To be arranged by candidates for the Master of Science degree with the instructor under whose direction the master's thesis is being written.

**BADM 880 - Readings and Research (1-6 Credits)****BADM 881 - Readings and Research (3 Credits)****BADM 899 - Dissertation Preparation (1-12 Credits)**

## Chemical Engineering (ECHE)

**ECHE 520 - Chemical Engineering Fluid Mechanics (3 Credits)**

Multi-phase pressure drop, phase contacting, flow through porous media, fluidization, mixing, and turbulence.

**Prerequisites:** ECHE 320 or ENCP 360.

**ECHE 521 - Computational Fluid Dynamics for Engineering****Applications (3 Credits)**

Introduction to the use of computational fluid dynamics codes to analyze flow, heat, and mass transfer problems of practical engineering applications.

**Prerequisites:** ECHE 320 or EMCH 360 or ECIV 360 or ENCP 360 or AESP 265.

**ECHE 530 - Intermediate Chemical Engineering Kinetics (3 Credits)**

Intermediate concepts of chemical kinetics, batch and flow reactors, catalysts and reactor design, including non-ideal systems.

**Prerequisites:** C or better in ECHE 311.

**Prerequisite or Corequisite:** D or better in ECHE 321.

**ECHE 540 - Intermediate Separation Process Design (3 Credits)**

Intermediate level design of stagewise chemical separation cascades; analysis of binary and ternary systems; multicomponent separations, plate and column specification procedures; distillation, crystallization, extraction, and leaching.

**Prerequisites:** C or better in ECHE 300.

**Prerequisite or Corequisite:** D or better in ECHE 311.

**ECHE 550 - Chemical-Process Dynamics and Control (3 Credits)**

Fundamental physical and chemical principles in mathematically modeling the dynamic response of chemical processes; feedforward and feedback control systems; design of control schemes for selected chemical processes.

**Prerequisites:** C or better in ECHE 300 and MATH 242; D or better in ECHE 456.

**ECHE 567 - Process Safety, Health and Loss Prevention (3 Credits)**

Reliability, availability, and fault-tree analyses, risk indices, hazard evaluation, vapor cloud modeling, toxicology, material safety classification and regulations, individual/corporate ethical responsibilities.

**Prerequisite or Corequisite:** ECHE 466.

**ECHE 571 - Corrosion Engineering (3 Credits)**

Basic principles of corrosion engineering developed from a chemical engineering approach to thermodynamics, kinetics, mass transfer, and potential theory.

**Prerequisites:** ECHE 311.

**ECHE 572 - Polymer Processing (3 Credits)**

Industrial polymers with emphasis on their characterization and on the modeling of the major polymer fabrication processes.

**ECHE 573 - Next Energy (3 Credits)**

An examination of energy technologies that will enable society to move from an economy based on fossil fuels to one based on sustainable energy.

**ECHE 574 - Combustion (3 Credits)**

Fundamental process and applications related to the broad field of combustion and energy generation including emissions control technologies.

**Prerequisites:** ECHE 430.

**ECHE 589 - Special Advanced Topics in Chemical Engineering (3 Credits)**

Course content varies and will be announced in the schedule of classes by title. May be repeated as topic varies.

**ECHE 700 - Chemical Process Analysis (3 Credits)**

Quantitative analysis of industrial chemical operations. Equilibrium relations, material and energy balances, and reaction kinetics principles are used to analyze a variety of chemical processes and systems.

**ECHE 709 - Selected Topics in Industrial Stoichiometry (3 Credits)**

Special topics in industrial stoichiometry with emphasis on current research.

**ECHE 710 - Advanced Chemical Engineering Thermodynamics (3 Credits)**

Mass, energy, and entropy balance analysis of complex systems; evaluation of thermodynamic property changes of pure materials; solution thermodynamics of single-phase multicomponent systems; phase and chemical reaction equilibrium.

**Prerequisites:** ECHE 311.

**ECHE 719 - Selected Topics in Chemical Engineering Thermodynamics (3 Credits)**

Special topics in chemical engineering thermodynamics with emphasis on current research.

**ECHE 720 - Advanced Fluid Flow Analysis (3 Credits)**

Theory and application of fluid flow phenomena; momentum equations, conformal mapping, empirical methods, boundary layers, dimensional analysis.

**Prerequisites:** ENCP 360 and MATH 242.

**ECHE 721 - Advanced Heat Flow Analysis (3 Credits)**

Theory and application of heat flow phenomena; classical techniques and finite-difference numerical methods; conduction, convection, radiation, boiling.

**Prerequisites:** ECHE 321 and ECHE 720.

**ECHE 722 - Advanced Mass Transfer (3 Credits)**

Diffusive and convective mass transfer. Applications of the Stefan-Maxwell equations, prediction of diffusion coefficients, convective mass transport, correlations for mass transfer coefficients, and combined mass transfer and reaction modeling.

**Prerequisite or Corequisite:** ECHE 720.

**ECHE 725 - Rheology (3 Credits)**

Rheological characteristics of viscous, elastic, viscoelastic, and plastic substances; non-Newtonian fluid flow, viscometry, and rheogoniometry; rheological equations of state; engineering applications.

**ECHE 728 - Selected Topics in Fluid Mechanics (3 Credits)**

Special topics in fluid mechanics with emphasis on current research.

**ECHE 729 - Selected Topics in Heat and Mass Transfer (3 Credits)**

Special topics in heat and mass transfer with emphasis on current research.

**ECHE 730 - Chemical Reactor Design (3 Credits)**

Optimum temperature sequencing. Modeling of non-ideal reactors. Theories of catalysis with emphasis on the rate of diffusion. Interpretation of experimental catalytic data and use of these data in reactor design.

**ECHE 739 - Selected Topics in Kinetics and Reactor Design (3 Credits)**

Special topics in kinetics and reactor design with emphasis on current research.

**ECHE 740 - Distillation (3 Credits)**

Analytical, shortcut, and computer techniques for plate contacting of multicomponent systems. Review of binary separations, V-L-E models, azeotropic and extractive distillation, effects of non-key components, computational schemes, and convergence criteria.

**ECHE 741 - Liquid-Liquid Extraction (3 Credits)**

Principles of modeling liquid-liquid extraction cascades. Evaluation of L-L-E, ternary systems, design applications for hydrometallurgical systems, interlinked cascade structures for multiple solute systems, efficiency of process equipment, and synergism.

**ECHE 742 - Adsorption Fundamentals and Processes (3 Credits)**

Advanced principles of adsorption and adsorption processes including adsorbents, thermodynamics, kinetics, fixed bed adsorption and cyclic adsorption processes.

**ECHE 749 - Selected Topics in Separations (3 Credits)**

Special topics in separations with emphasis on current research.

**ECHE 750 - Process Dynamics and Control (3 Credits)**

Advanced topics in chemical process dynamics and control. Multivariate analysis, system identification, sampling, optimal process control.

**Prerequisites:** ECHE 550.

**ECHE 759 - Selected Topics in Process Control (3 Credits)**

Special topics in process control with emphasis on current research.

**ECHE 769 - Selected Topics in Chemical Engineering Design (3 Credits)**

Special topics in chemical engineering design with emphasis on current research.

**ECHE 770 - Electrochemical Engineering (3 Credits)**

Electrochemical engineering principles developed from thermodynamic, kinetic, mass transfer, and potential theory. Numerical analysis and design of electrochemical systems. Statistical analysis of experimental data and industrial experimental designs.

**ECHE 771 - Corrosion Engineering (3 Credits)**

Corrosion engineering principles developed from thermodynamic, kinetic, mass transfer, and potential theory. Numerical analysis of corroding systems, statistical analysis of experimental data, and industrial experimental designs.

**ECHE 772 - Principles of Polymer Systems (3 Credits)**

Theory and applications of polymer systems. Structure, physical properties, rheological, and mechanical behavior of polymers. Polymerization reactions and industrial polymerization processes. Fabrication techniques.

**ECHE 789 - Selected Topics in Chemical Engineering (3 Credits)**

Approved for special topic offerings.

**ECHE 797 - Research (1-12 Credits)**

Individual research to be arranged with instructor.

**ECHE 798 - Graduate Seminar in Chemical Engineering (1-2 Credits)**

Seminar on current topics in chemical engineering. Includes oral presentations by students on research projects.

**ECHE 799 - Thesis Preparation (1-12 Credits)**

To be arranged by candidates for the master's degree with the thesis advisor.

**ECHE 865 - Chemical Process Safety and Loss Prevention (3 Credits)**

Chemical process quantitative risk analysis, consequence modeling, risk estimation, and hazards assessment; design principles including inherent safety and mitigation techniques; elements of process safety management.

**Prerequisites:** ECHE 720.

**ECHE 899 - Dissertation Preparation (1-12 Credits)**

# Chemistry (CHEM)

## CHEM 511 - Inorganic Chemistry (3 Credits)

Consideration of atomic structure, valence, complex compounds, and systematic study of the periodic table.

**Prerequisites:** C or higher in CHEM 334, PHYS 212, and MATH 241.

## CHEM 541L - Physical Chemistry Laboratory (2 Credits)

Applications of physical chemical techniques. Five laboratory hours and one recitation hour per week.

**Prerequisites:** C or higher in CHEM 321L or in CHEM 322L or in CHEM 142.

**Corequisite:** CHEM 541 (unless grade of C or higher in CHEM 541 earned previously).

## CHEM 542 - Physical Chemistry (3 Credits)

Spectroscopy, statistical mechanics, and chemical applications of quantum mechanics.

**Prerequisites:** C or higher in CHEM 112 or in CHEM 142, MATH 241 and PHYS 212.

## CHEM 542L - Physical Chemistry Laboratory (2 Credits)

Applications of physical chemical techniques. Five laboratory hours and one recitation hour per week.

**Prerequisites:** C or higher in CHEM 321L or in CHEM 142.

**Corequisite:** CHEM 542 (unless grade of C or higher in CHEM 542 earned previously).

## CHEM 545 - Physical Biochemistry (3 Credits)

A survey of physical methods essential for studies of biomacromolecules. Three lecture hours per week.

**Prerequisites:** C or higher in CHEM 541 and in CHEM 550 or CHEM 555.

## CHEM 550 - Biochemistry (3 Credits)

Description of biological macromolecules and major metabolic pathways. Three lecture hours per week.

**Prerequisites:** C or higher in CHEM 334.

**Cross-listed course:** BIOL 541

## CHEM 550L - Biochemistry Laboratory (1 Credit)

Experiments and demonstrations illustrating the principles of biochemistry. Three laboratory hours per week.

**Prerequisite or Corequisite:** C or higher in CHEM 550 or BIOL 541 or CHEM 555 or BIOL 545.

**Cross-listed course:** BIOL 541L

## CHEM 555 - Biochemistry/Molecular Biology I (3 Credits)

Essentials of modern biochemistry. First semester of a two-semester course. Three lecture hours per week.

**Prerequisites:** C or higher in CHEM 334.

**Cross-listed course:** BIOL 545

## CHEM 556 - Biochemistry/Molecular Biology II (3 Credits)

Essentials of modern biochemistry and molecular biology. Three lecture hours per week.

**Prerequisites:** C or higher in BIOL 302.

**Cross-listed course:** BIOL 546

## CHEM 619 - Special Topics in Inorganic Chemistry (1-3 Credits)

Current developments in inorganic chemistry. Readings and research on selected topics. Course content varies by title and will be announced in the schedule of classes. May be repeated for credit.

## CHEM 621 - Instrumental Analysis (3 Credits)

Chemical instrumentation including electronics, signal processing, statistical analysis, molecular/atomic spectroscopy, electrochemical methods, chromatography, and mass spectrometry. Three lecture hours per week.

**Prerequisites:** C or higher in CHEM 321 or CHEM 322.

## CHEM 621L - Instrumental Analysis Lab (1 Credit)

Methods, principles and strategies for chemical instrumentation in analysis. Chemical instrumentation laboratory with environmental, forensic, and biotechnology applications. Three laboratory hours per week.

**Corequisite:** CHEM 621.

## CHEM 622 - Forensic Analytical Chemistry (3 Credits)

Analytical chemical methods in forensic science, including gathering of evidence, toxicology, drug identification, analysis of trace evidence, arson analysis, and DNA/serology.

**Prerequisites:** C or higher in CHEM 321, CHEM 321L and in CHEM 334, CHEM 332L or CHEM 334L.

## CHEM 623 - Introductory Environmental Chemistry (3 Credits)

Study of the chemical reactions and processes that affect the fate and transport of organic chemicals in the environment. Three lecture hours per week.

**Prerequisites:** C or higher in CHEM 321, in CHEM 333, and in MATH 142.

## CHEM 624 - Aquatic Chemistry (3 Credits)

Study of the chemical reactions and processes affecting the distribution of chemical species in natural systems. Three lecture hours per week.

**Prerequisite or Corequisite:** CHEM 321, MATH 142.

**Cross-listed course:** MSCI 624

## CHEM 629 - Special Topics in Analytical Chemistry (1-3 Credits)

Current developments in inorganic chemistry. Readings and research on selected topics. Course content varies by title and will be announced in the schedule of classes. May be repeated for credit.

## CHEM 633 - Introduction to Polymer Synthesis (3 Credits)

Special emphasis on the modern synthesis of polymeric materials. Definitions, characterization, and applications of polymers will be briefly presented.

**Prerequisites:** C or higher in CHEM 334.

## CHEM 639 - Special Topics in Organic Chemistry (3 Credits)

Current developments in organic chemistry. Readings and research on selected topics. May be repeated as content varies by title.

## CHEM 643 - Computational Chemistry (3 Credits)

This course is designed to familiarize students with theory and use of modern electronic structure codes, as well as to develop critical thinking and problem-solving skills and to improve computer literacy.

**Prerequisites:** C or higher in CHEM 541 or CHEM 542.

**CHEM 644 - Materials Chemistry (3 Credits)**

Introduction to materials science; structural and electronic description of inorganic-based solids; experimental techniques in materials chemistry; interfacial energetics and optoelectronic processes at metal and semiconductor surfaces.

**Corequisite:** CHEM 542 (unless a grade of C or higher earned previously).

**CHEM 649 - Special Topics in Physical Chemistry (1-3 Credits)**

Current developments in physical chemistry. Readings and research on selected topics. Course content varies by title and will be announced in the schedule of classes. May be repeated for credit.

**CHEM 655 - Metabolic Biochemistry of Human Disease (3 Credits)**

Core concepts of biochemistry as applied to human health and disease.

**Prerequisites:** C or higher in CHEM 555/BIOL 545 or CHEM 550/BIOL 541.

**Cross-listed course:** BIOL 668

**CHEM 659 - Special Topics in Biochemistry (3 Credits)**

Selected topics in the field of biochemistry. May be repeated as content varies by title.

**Prerequisites:** C or higher in CHEM 555/BIOL 545 or CHEM 550/BIOL 541.

**CHEM 700 - Methods of Solving Problems in Chemistry (3 Credits)**

Various approaches to solving problems in gas laws, solution chemistry, and equilibrium. Comparison of the pedagogical merits of the different approaches. For teachers of chemistry, M.A. Students. Three lectures per week.

**CHEM 701 - Seminar (1 Credit)**

Required of all graduate students. Fall or Spring limit of 2 credits.

**CHEM 701A - Seminar (1 Credit)**

A survey of chemical research at the University of South Carolina.

Required of all first-year degree candidates in chemistry.

**CHEM 702 - Structure and Bonding in Covalent Molecules (4 Credits)**

Covalent bonding in compounds of the first short period elements, with emphasis on those of boron, carbon, and nitrogen. Structure of molecules, some important functional groups, resonance in unsaturated compounds, stereochemistry, and organometallic compounds. For teachers of chemistry, M.A.T., or M.Ed. students. Three lectures and one discussion period per week.

**CHEM 703 - Molecular Reactions (4 Credits)**

General types of organic reactions, including those of biochemistry. Industrial preparations of both organic and inorganic compounds of major importance. For teachers of chemistry, M.A.T., or M.Ed. students. Three lectures and one discussion period per week.

**CHEM 704 - Energy, Equilibrium, and Chemical Change (4 Credits)**

The basic laws of chemical thermodynamics, chemical kinetics, and equilibrium, with emphasis on the practical and theoretical importance of the interconversion of chemical energy with other forms of energy. For teachers of chemistry, M.A.T., or M.Ed. students. Three lectures and one discussion period per week.

**CHEM 705 - Modern Instrumental Methods in Chemistry (4 Credits)**

A survey of the applications of modern instrumental techniques to the solution of chemical problems, with emphasis on development of a basic understanding of the experiment and on interpretation of data. For teachers of chemistry, M.A.T., or M.Ed. students. Three lectures and one discussion period per week.

**CHEM 706 - Chemistry in Living Systems (4 Credits)**

The structures and functions of proteins, nucleic acids, lipids, enzymes, and other biologically important molecules; the role of these molecules in the major metabolic pathways. For teachers of chemistry, M.A.T., or M.Ed. students. Three lectures and one discussion period per week.

**CHEM 709 - Special Topics in Chemical Education (1-6 Credits)**

Selected chemical topics with emphasis on modern chemical concepts. For teachers of chemistry, M.A.T., I.M.A. and M.Ed. students. Lectures, discussion, laboratories, depending on credit offered.

**CHEM 711 - Physical-Inorganic Chemistry (3 Credits)**

The use and interpretation of modern physical measurements of particular application to inorganic chemistry, including X-ray, ESR, magnetic measurements, Mössbauer spectra, ligand field theory, and reaction mechanisms.

**CHEM 712 - The Chemistry of Transition Elements (3 Credits)**

Systematic study of the reactions and bonding of the d and f transition elements.

**CHEM 713 - The Chemistry of the Representative Elements (3 Credits)**

Systematic study of the structure and bonding of the inorganic compounds of main group elements.

**CHEM 719 - Special Topics in Inorganic Chemistry (3 Credits)**

May be repeated as content varies by title.

**CHEM 721 - Electroanalytical Chemistry (3 Credits)**

Theory and application of classical and modern electrochemical techniques.

**CHEM 722 - Spectrochemical Methods of Analysis (3 Credits)**

A comprehensive study of the theory, instrumentation, methodology, and analytical applications of modern atomic and quantitative molecular spectrometry.

**CHEM 723 - Separation Methods in Analytical Chemistry (3 Credits)**

Modern techniques for analytical separations including distillation, extraction, gas chromatography, and liquid chromatography. Basic theory and practical applications. Three lecture hours per week.

**CHEM 729 - Special Topics in Analytical Chemistry (3 Credits)**

May be repeated as content varies by title.

**CHEM 735 - Structural and Mechanistic Organic Chemistry (3 Credits)**

Basic concepts of structure, bonding, stereochemistry, and reaction mechanisms as applied to organic compounds and synthetic transformations.

**CHEM 736 - Mechanistic and Synthetic Organic Chemistry (3 Credits)**

A continuation of CHEM 735 with special emphasis on organic synthesis.

**Prerequisites:** CHEM 735.

**CHEM 739 - Special Topics in Organic Chemistry (3 Credits)**

May be repeated as content varies by title.

**CHEM 741 - Chemical Thermodynamics (3 Credits)**

A development of classical thermodynamics and its application to chemical changes.

**Prerequisites:** CHEM 542.

**CHEM 742 - Surface Science (3 Credits)**

The principles of surface processes – structure and electronic properties, adsorption and reactions, surface characterization using spectroscopy and microscopy.

**CHEM 743 - Quantum Chemistry (3 Credits)**

An introduction to the application of quantum mechanics to problems in chemistry.

**Prerequisites:** CHEM 542; differential equations.

**CHEM 744 - Statistical Mechanics (3 Credits)**

Calculations of the thermodynamic properties of chemical systems from molecular properties. Theory and applications.

**Prerequisites:** CHEM 542; differential equations.

**CHEM 745 - Introductory Crystallography (3 Credits)**

Point and space groups. Matrix representation and the derivation of the space groups. Significance of general and special positions. Powder and single crystal methods. Limitation imposed upon molecules by space group considerations. Introduction to structure analysis. Patterson and electron density functions. Refinement techniques.

**CHEM 747 - Spectroscopy and Molecular Structure (3 Credits)**

Study of the rotational, vibrational, and electronic spectra of polyatomic molecules for the elucidation of molecular structures.

**CHEM 749 - Special Topics in Physical Chemistry (3 Credits)**

May be repeated as content varies by title.

**CHEM 751 - Biosynthesis of Macromolecules (3 Credits)**

A detailed consideration of the enzymological basis for the synthesis of DNA, RNA, and protein including mechanisms for the regulation of these processes. Focus will be on eucaryotic mechanisms though procaryotic systems will be covered as necessary for background.

**CHEM 752 - Regulation and Integration of Metabolism (3 Credits)**

Biochemical organization of the cell. Regulation and integration of metabolism. Membrane structure and function. Energy transduction processes.

**CHEM 753 - Enzymology and Protein Chemistry (3 Credits)**

An analysis of the isolation, composition, structure, and function of enzymes emphasizing their kinetic, mechanistic, and regulatory features. Protein chemistry: amino acid and protein sequence analysis; chemical modification methodologies; analysis of higher order structures of proteins.

**CHEM 754 - Biomedical Biochemistry I (4 Credits)**

First of a two-semester sequence covering the major areas of biochemistry in a biomedical context. Chemistry of amino acids and proteins, enzymology, metabolism of carbohydrates and lipids. Emphasis is on biomedical research applications. Four lecture hours per week.

**CHEM 755 - Biomedical Biochemistry II (4 Credits)**

A continuation of CHEM 754. Topics include nucleic acids and protein biosynthesis, blood chemistry, respiration, acid-base chemistry, metabolism, and nutrition. Four lecture hours per week.

**Prerequisites:** CHEM 754.

**CHEM 759 - Special Topics in Molecular Biochemistry (3 Credits)**

May be repeated as content varies by title.

**CHEM 790 - Introduction to Research (3 Credits)**

A laboratory and introduction to modern research techniques. Six hours of laboratory per week and individual consultation with instructor.

**CHEM 791 - Introduction to Research (1-3 Credits)**

A continuation of CHEM 790. Six hours of laboratory per week and individual consultation with instructor.

**Prerequisites:** CHEM 790.

**CHEM 798 - Research in Chemistry I (1-12 Credits)**

Directed laboratory research and readings in chemistry.

**CHEM 799 - Thesis Preparation (1-12 Credits)****CHEM 898 - Research in Chemistry II (1-12 Credits)**

A continuation of CHEM 798 for Ph.D. candidates.

**CHEM 899 - Dissertation Preparation (1-12 Credits)**

## Chinese (CHIN)

**CHIN 550 - Advanced Special Topics in Chinese Studies (3 Credits)**

Advanced special topics in Chinese studies. May be repeated as content varies by title.

**CHIN 777 - Supervised Instruction in Teaching Foreign Languages in College (0 Credits)**

Supervised direction of foreign language teaching in college. Required of all graduate assistants who are teaching. This course will not count toward the MA or PhD degree.

## Civil Engineering (ECIV)

**ECIV 502 - Life Cycle Assessment of Civil and Environmental Engineering Systems (3 Credits)**

The steps of conducting and interpreting an environmental life cycle assessment on civil and environmental engineering systems. Fundamentals associated with conducting a life cycle assessment, including goal and scope, inventory analysis, impact assessment, and interpretation.

**Prerequisites:** D or better in ECIV 350 and D or better in either ECIV 303, ECIV 325, ECIV 327, ECIV 330, ECIV 340 or ECIV 362.

**ECIV 503 - Structural Modeling and Experimental Methods (3 Credits)**

Introduction of structural modeling; strain gauge instrumentation; force, displacement, acceleration, pressure, temperature measurements; concrete and steel modeling; size effects; analysis of experimental data.

**Prerequisites:** ECIV 327.

**ECIV 520 - Structural Analysis II (3 Credits)**

Advanced methods of structural analysis with emphasis on matrix methods. Development of the generalized matrix force and matrix displacement methods of static analysis, with applications to trusses and frames.

**Prerequisites:** ECIV 320.

**ECIV 521 - Numerical Methods in Mechanics (3 Credits)**

Numerical modeling of typical engineering problems. Numerical solution of linear and nonlinear, boundary and initial value problems. Introduction to optimization.

**Prerequisites:** D or better in ECIV 201 or ENCP 201.

**ECIV 524 - Structural Vibrations (3 Credits)**

Response of single- and multiple-degree of freedom structurally dynamic systems to impact, harmonic, wind, and seismic excitations.

**Prerequisites:** ECIV 320.

**ECIV 526 - Timber and Masonry Design (3 Credits)**

Basic engineering properties of timber and masonry materials, design methods and philosophies for timber and masonry structures. Particular attention is paid to current codes, specifications and analysis.

**Prerequisites:** C or better in ECIV 320.

**ECIV 530 - Foundation Analysis and Design (3 Credits)**

Subsurface investigation procedures. Theoretical and practical aspects of the design of earth retaining structures, spread footings, and pile foundations.

**Prerequisites:** ECIV 330.

**ECIV 531 - Design of Earth Structures (3 Credits)**

Geotechnical engineering problems associated with the behavior of earth masses. Soil shear strength, lateral earth pressure, design of retaining structures, slope stability, water flow through soils.

**Prerequisites:** ECIV 330.

**ECIV 533 - Geosynthetics and Geotechnical Design of Landfills (3 Credits)**

Principles for the design, construction, and performance of waste containment systems. Characterization of barrier materials; geosynthetics; design of liner and leachate collection systems; stability and deformation analyses of landfills.

**Prerequisites:** ECIV 330.

**ECIV 535 - Geotechnical Engineering in Transportation (3 Credits)**

Remote sensing and engineering geology. Field and laboratory testing. Design and maintenance methods for flexible and rigid pavements. Topics in tunnel design and buried conduit.

**Prerequisites:** ECIV 330.

**ECIV 539 - Experimental Methods in Geotechnical Engineering (3 Credits)**

Overview of transducers, signal conditioning and data acquisition; test control methods, data analysis and measurement errors; testing systems to measure soil strength, stiffness, and hydraulic conductivity; laboratory projects and examinations.

**Prerequisites:** ECIV 330, ECIV 330L.

**ECIV 540 - Transportation Systems Planning (3 Credits)**

Fundamental interactions between supply and demand in transportation systems. Modeling transportation demand and trip-making behavior. Evaluation of alternatives for decision making.

**Prerequisites:** ECIV 340.

**ECIV 541 - Highway Design (3 Credits)**

Design of transportation facilities using relevant tools and guidelines with emphasis on physical and operational aspects of arterials, freeways, intersections, and interchanges, including geometry, capacity, control, and safety.

**Prerequisites:** D or better in ECIV 111 or ENCP 102 and D or better in ECIV 340.

**ECIV 542 - Traffic Engineering (3 Credits)**

Capacity analysis of freeways and arterials. Traffic flow characteristics and basic relationships among traffic flow parameters. Signalized and unsignalized intersection control and signal timing design.

**Prerequisites:** ECIV 340.

**ECIV 543 - Traffic Safety Analysis (3 Credits)**

Research concepts and methodologies to enable students to identify the underlying reasons and factors that contribute to traffic crashes and determine appropriate countermeasures.

**Prerequisites:** D or better in ECIV 340.

**ECIV 551 - Elements of Water and Wastewater Treatment (3 Credits)**

Unit operations and processes employed in the physical, chemical, and biological treatment of water and wastewater. Design of water and wastewater treatment systems.

**Prerequisites:** ECIV 350.

**ECIV 555 - Principles of Municipal Solid Waste Engineering (3 Credits)**

Fundamentals and engineering principles of solid waste generation, characterization, collection and transport, source reduction and recycling, and physical, chemical, and biological treatment strategies.

**Prerequisites:** ECIV 350.

**ECIV 556 - Air Pollution Control Engineering (3 Credits)**

Introduction to the sources of air pollution and the engineering principles used for control and prevention.

**Prerequisites:** ECIV 350.

**ECIV 557 - Sustainable Construction for Engineers (3 Credits)**

Instruction to sustainable engineering design alternatives and principles for construction and site development from preconstruction through design and the construction phase.

**Prerequisites:** ECIV 350 and ECIV 570.

**ECIV 558 - Environmental Engineering Process Modeling (3 Credits)**

Modeling fate and transport phenomena in environmental processes with applications in engineered unit operators and natural systems.

**Prerequisites:** ECIV 350 and MATH 242.

**ECIV 560 - Open Channel Hydraulics (3 Credits)**

Steady and unsteady flows in single or multiple-channel systems.

**Prerequisites:** ECIV 360.

**ECIV 562 - Engineering Hydrology (3 Credits)**

Applications of hydrologic techniques to design problems; stormwater simulation models; urban stormwater.

**Prerequisites:** ECIV 360.

**ECIV 563 - Subsurface Hydrology (3 Credits)**

Hydrologic cycle, subsurface physical properties, equations of groundwater flow, well flow, well design, groundwater resource development, design of dewatering systems, groundwater contamination.

**Prerequisites:** ECIV 201, ECIV 360.

**ECIV 570 - Land Development for Engineers (3 Credits)**

Fundamentals of designing and permitting the conversion of land to new or altered states, including environmental issues, traffic and parking, utility resources, site engineering, ADA, safety, planning, and zoning requirements.

**Prerequisites:** Three from ECIV 320, ECIV 330, ECIV 340, ECIV 350, and ECIV 362.

**ECIV 580 - Railway Engineering I (3 Credits)**

Introduction to the analysis and design of the railway infrastructure for freight and passenger systems to include track and track support systems, grade crossings, special trackwork, construction, inspection, assessment and compliance.

**Prerequisites:** ECIV 303, ECIV 320, ECIV 330, ECIV 340.

**Corequisite:** ECIV 303.

**ECIV 582 - Operation and Logistics of Railway Systems (3 Credits)**

Principles of rail operations; Network management; Best practices for train planning, performance management and delivery of service; technical elements of a railway from an operations perspective (train controls, signaling, communications, yards, tractive power etc).

**Prerequisites:** ECIV 340.

**ECIV 588 - Design of Railway Bridges and Structures (3 Credits)**

Introduction to railway infrastructure; Structural design considerations and criteria of railway structures; Bridge types and components; Planning and preliminary design of modern railway bridges; Loads and forces; Structural analysis and design of steel railway bridges and components.

**Prerequisite or Corequisite:** ECIV 330; ECIV 325 or ECIV 327.

**ECIV 705 - Deterministic Civil and Environmental Systems Engineering (3 Credits)**

Planning, design, and operation of large-scale, integrated civil and environmental engineering systems, with applications of mathematical programming and other search models.

**Prerequisites:** ECIV 405.

**ECIV 706 - Probabilistic Civil and Environmental Systems Engineering (3 Credits)**

Civil and environmental systems engineering under uncertainty, including decision rules, decision theory, uncertainty propagation, stochastic programming, and conservative design.

**Prerequisites:** STAT 509.

**ECIV 707 - Management of Engineering Projects (3 Credits)**

This course focuses in studying the life-cycle of a project using a systems engineering approach. Industry standards for engineering companies as well as practical considerations are studied through the semester.

**ECIV 708 - Engineering Risk and Reliability (3 Credits)**

Risk analysis is presented in the context of reliability in design including applications to mechanical and electrical systems with discussion of failure modes and life cycle costs.

**ECIV 712 - Boundary Element Methods in Engineering (3 Credits)**

Introduction to boundary element methods and their computer implementation. Steady-state and transient solutions of two- and three-dimensional problems of elasticity and potential flow.

**Prerequisites:** ENCP 260, MATH 242.

**ECIV 720 - Advanced Structural Mechanics and Analysis (3 Credits)**

Development of concepts and practical applications of the finite element method of structural analysis with emphasis on the displacement method approach. Initial strains, specified displacements, numerical integration, and isoparametric elements are included.

**Prerequisites:** ECIV 520.

**ECIV 722 - Theory and Design of Plates and Shells (3 Credits)**

Development of the fundamental differential equations for plates. Miscellaneous classic plate solutions. Membrane and bending solutions for shells of revolution, circular cylindrical shells, hyperbolic paraboloid shells and circular cylindrical barrel shells.

**Prerequisites:** MATH 242.

**ECIV 724 - Dynamics of Structures (3 Credits)**

Lumped and continuous multidegree of freedom mechanical systems and structural assemblies. Steady-state, shock, and random excitation. Modal analysis, numerical methods. Introduction to wave propagation, earthquake engineering, and nonlinear vibrations.

**Prerequisites:** ENCP 260, MATH 242.

**ECIV 725 - Advanced Analysis and Design in Structural Metals (3 Credits)**

Analysis and behavior of metal structural components under general loading combinations. Buckling phenomena of thin-walled open sections in the elastic and inelastic regions, and correlation with design code criteria. Behavior and design of plate girders.

**Prerequisites:** ECIV 425.

**ECIV 726 - Repair and Retrofit of Structures (3 Credits)**

Analysis and modeling existing and repaired structures. Selection, modeling, and design of repair and/or retrofit measures.

**Prerequisites:** ECIV 520.

**ECIV 727 - Advanced Analysis and Design of Reinforced Concrete (3 Credits)**

Design of multistory structures, two-way slabs, joints in buildings, pavement design, and miscellaneous topics.

**Prerequisites:** ECIV 427.

**ECIV 728 - Prestressed Concrete Analysis and Design (3 Credits)**

Pre-stressing methods and materials; flexural analysis, shear and torsion, design of simple, composite and continuous beams. Deflections, slab design, and study of axially loaded members.

**Prerequisites:** ECIV 327.

**ECIV 730 - Advanced Soil Mechanics (3 Credits)**

Course covers the mechanical properties of soil; analysis of the field and laboratory tests to determine soil properties required for foundation analysis and design; consolidation theory; and settlement analysis.

**Prerequisites:** ECIV 530.

**ECIV 731 - Slope Stability, Retaining Systems and Lateral Earth Pressure (3 Credits)**

Shear strength of soil and rock under effective stress. Slope stability analysis, tieback and reinforced earth systems. Computation of earth pressures for excavations and tunnels. Dewatering for construction.

**Prerequisites:** ECIV 530.

**ECIV 732 - Theoretical and Numerical Methods in Geomechanics (3 Credits)**

Constitutive models and their numerical implementation. Elastic and plastic approaches to analysis. Finite element applications to geomechanics problems. Layer analysis, arching, and stability case studies.

**Prerequisites:** ECIV 530.

**ECIV 733 - Physico-chemical Properties of Soils (3 Credits)**

Soil mineralogy, chemistry, and clay-water systems. Impact of soil fabric and microstructure on engineering behavior. Soil-contaminant interaction. Barriers and liners for containment.

**Prerequisites:** ECIV 530.

**ECIV 734 - Dynamics of Soils and Foundations (3 Credits)**

Properties of soils under dynamic loading. Harmonic and periodic motion. Free and forced vibrations. Vibrations of footings on an elastic half-space. Cyclic loadings and liquefaction, earthquake response of soils.

**Prerequisites:** ECIV 330.

**ECIV 736 - Ground Improvement Techniques (3 Credits)**

Application of soil mechanics principles to improving the engineering characteristics of soil and rock. Topics include mechanisms of soil densification, preconsolidation, grouting, ground freezing, reinforced earth, and soil nailing.

**Prerequisites:** ECIV 530.

**ECIV 737 - Advanced Foundation Design (3 Credits)**

Application of soil mechanics to design and analysis of foundations. Shallow foundations, bearing capacity, settlement. Deep foundations, axial and lateral loading, wave equation analysis, drilled shafts. Design and construction issues.

**Prerequisites:** ECIV 530.

**ECIV 742 - Intermodal Freight Transport (3 Credits)**

Marine container terminal design and operations, rail-yard design and operations, cross-dock terminal design and operations, drayage routing and scheduling, and network design. Application of operations research techniques to intermodal transportation.

**Prerequisites:** D or better in ECIV 705.

**ECIV 744 - Discrete Choice Analysis of Travel Demand (3 Credits)**

Individual choice theory; binary choice models; unordered multinomial and multi-dimensional choice models; sampling theory and sample design; ordered multinomial models, aggregate prediction with choice models; joint stated preference and revealed preference modeling, and longitudinal choice analysis; review of state-of-the-art and future directions.

**Prerequisites:** D or better in STAT 509.

**ECIV 746 - Flows in Transportation Networks (3 Credits)**

Design, operation, and management of traffic flows over complex transportation networks. Covers two major topics: traffic flow modeling and traffic flow operations. Includes deterministic and probabilistic models, elements of queueing theory, and traffic assignment. Concepts and methods are illustrated through various applications and examples.

**Prerequisites:** D or better in ECIV 706.

**ECIV 748 - Traffic Flow Theory (3 Credits)**

Survey of statistical techniques useful in traffic engineering. Deterministic and stochastic models of traffic flow. Operations research techniques. Simulation by digital computer. Applications to highway problems.

**Prerequisites:** ECIV 541, STAT 509.

**ECIV 750 - Principles of Environmental Engineering Process (3 Credits)**

Basic physical, chemical, and biological processes applied to aqueous systems.

**Prerequisites:** CHEM 112 and MATH 142.

**ECIV 751 - Water and Wastewater Treatment Theory I (3 Credits)**

Physical and chemical water and wastewater treatment processes. Topics include mixing, coagulation, sedimentation, filtration, oxidation, absorption, and ion exchange.

**Prerequisites:** ECIV 750.

**ECIV 752 - Water and Wastewater Treatment Theory II (3 Credits)**

Biological water and wastewater treatment process. Topics include activated sludge, biofilms, nutrient removal, lagoons, and sludge treatment and disposal.

**Prerequisites:** ECIV 750.

**ECIV 753 - Unit Operations Laboratory for Water and Wastewater Treatment (3 Credits)**

Laboratory experiments in selected processes for water and wastewater treatment.

**Prerequisites:** ECIV 350L.

**ECIV 755 - Industrial Wastewater Treatment (3 Credits)**

Industrial sources, characteristics, and treatment plant design.

**Prerequisites:** ECIV 751 or ECIV 752.

**ECIV 760 - Computational Hydraulics (3 Credits)**

Unsteady flow in open channels and pipes: theory, governing equations, and methods for their solution.

**Prerequisites:** ECIV 560.

**ECIV 761 - Numerical Methods in Subsurface Hydrology (3 Credits)**

Formation of groundwater flow and solute transport problems: theory and practice, numerical methods, solution techniques.

**Cross-listed course:** GEOL 775

**ECIV 762 - Advanced Hydrology (3 Credits)**

Advanced theories and techniques used in stormwater modeling; kinematic hydrology; soil physics infiltration; deterministic and parametric stormwater models; stochastic methods.

**Prerequisites:** ECIV 562.

**ECIV 763 - Unsaturated Flow Theory (3 Credits)**

Moisture content-matric suction relationships, theory of flow in unsaturated soils, governing equations, measurement techniques, computer modeling of flow and transport.

**Prerequisites:** ECIV 563.

**ECIV 764 - Contaminant Transport (3 Credits)**

Quantitative study of conservative and non-conservative pollutant transport in groundwater. Special topics include: transport processes, field techniques to determine aquifer transport parameters, and computer modeling of flow and transport.

**Prerequisites:** ECIV 563.

**ECIV 765 - Erosion and Sediment Control (3 Credits)**

Erosion, sediment transport, methods for control, pond hydraulics and performance, nonpoint source pollution, stream water quality.

**Prerequisites:** ECIV 562.

**ECIV 766 - Fluid Transients (3 Credits)**

Definitions; derivation of governing equations; methods of solution; method of characteristics; transients caused by turbomachinery, and methods for controlling transients.

**Prerequisites:** ENCP 360.

**ECIV 767 - Sediment Transport and River Mechanics (3 Credits)**

Sediment properties, review of fluid mechanics of sediment transport as bedload and suspended load, stability analysis of bedforms, alternate bars, growth and migration of meander bends.

**Prerequisites:** ECIV 560.



**ECIV 784 - Dynamic Analysis of Railway Systems (3 Credits)**

Dynamic characteristics of railway systems and their components; Modeling and simulations of railway systems including trains, track and ballast; Dynamic interaction of components including wheel-rail and train-bridge interaction; Study of environmental vibrations; Advanced topics on infrastructure assessment, infrastructure upgrade and vibration mitigation.

**Prerequisites:** ECIV 524.

**Prerequisite or Corequisite:** ECIV 520.

**ECIV 789 - Design Project in Railway Engineering (4 Credits)**

Application of engineering design principles in railway projects; project management; project scheduling; cost estimation; ethics; environmental and social impact; design drawings; report documents.

**Prerequisites:** ECIV 580 or ECIV 582.

**ECIV 790 - Selected Topics in Civil Engineering (3-9 Credits)**

Individual studies and/or investigations of special topics in the field of civil engineering.

**ECIV 797 - Research in Civil Engineering (1-12 Credits)**

Credits to be designated upon registration.

**ECIV 798 - Seminar in Civil and Environmental Engineering (0 Credits)**

Seminar on current topics in civil and environmental engineering. Includes oral presentations by students on their research projects. Recommended by the department that all graduate students participate each semester the seminar series is offered.

**ECIV 799 - Thesis Preparation in Civil Engineering (1-12 Credits)**

To be arranged by candidates for the master's degree with the instructor under whose direction the master's thesis is being written.

**ECIV 899 - Dissertation Preparation in Civil Engineering (1-12 Credits)**

## Classics (CLAS)

**CLAS 586 - Classical Mythology (3 Credits)**

The major Greek and Roman myths, with emphasis on their meaning, functions, and influence on ancient and later Western culture.

**CLAS 598 - Classics of Western Literary Theory (3 Credits)**

Problems of literary theory in texts from the ancients to the 17th century, with an emphasis on the classical tradition.

**Cross-listed course:** CPLT 701, ENGL 733

**CLAS 777 - Supervised Instruction in Teaching Foreign Languages in College (0 Credits)**

Supervised direction of foreign language teaching in college. Required of all graduate assistants who are teaching. This course will not count toward the MA or PhD degree.

## Communication Disorders (COMD)

**COMD 500 - Introduction to Speech-Language Pathology and Audiology (3 Credits)**

Human communication disorders with an overview of prevention and treatment programs.

**COMD 501 - Anatomy and Physiology of Speech and Hearing Mechanisms (3 Credits)**

An intensive study of the anatomy and physiology of the speech and hearing mechanisms.

**COMD 507 - Language Theory and Phonetics (3 Credits)**

Study of language theory and international phonetics alphabet transcription.

**COMD 521 - Introduction to Clinical Procedures in Speech Pathology (1 Credit)**

Diagnostic and therapeutic programs for the communicatively handicapped will be observed in the public school and various rehabilitative settings. Discussion and study of basic therapeutic theories and procedures utilized in speech therapy. Introduction to phonetics or equivalent or permission of instructor.

**COMD 525 - Selected Topics (1-3 Credits)**

Presentation of current experimental or innovative programs in diagnosis and treatment of the communicatively impaired. Course is designed to update the practicing clinician in specific areas of expertise. May be repeated for credit. Individual topics to be announced by title. Permission of instructor.

**COMD 526 - Disorders of Articulation: Evaluation and Therapy (3 Credits)**

The diagnosis and treatment of articulation problems in children and adults, including analysis of current research in testing and therapy for articulation disorders.

**Prerequisites:** COMD 501 and COMD 507 or equivalents.

**COMD 560 - Observation of Speech Language Pathology (1-3 Credits)**

Introduction to the clinical process through observation of various diagnostic reports and intervention programs included.

**COMD 570 - Introduction to Language Development (3 Credits)**

The language acquisition process in normal children, including the development of semantics, morphology, syntax, phonology, and pragmatics; American dialects and bilingualism.

**Prerequisites:** COMD 501 and COMD 507.

**Cross-listed course:** LING 570

**COMD 700 - Advanced Seminars in Speech Sound Disorders (3 Credits)**

Study of advanced alternative procedures for the evaluation and management of individuals with significant phonological disturbances.

**COMD 701 - Stuttering: Evaluation and Therapy (1-3 Credits)**

An introduction to the problem of stuttering; its possible causes; the management and training of clients.

**COMD 702 - Cleft Palate-Craniofacial Disorders: Evaluation and Management (1-3 Credits)**

Nature, diagnosis and treatment of cleft palate and craniofacial anomalies.

**COMD 703 - Genetics of Communication Disorders (1 Credit)**

Genetic factors that contribute to disorders of speech, language, and hearing.

**COMD 704 - Disorders of Voice: Evaluation and Therapy (1-3 Credits)**

The diagnosis and treatment of voice disorders in children and adults. The neurological, physiological, and psychological bases of voice disorders will be considered.

**COMD 705 - Adult Speech, Language, and Cognitive Disorders (3 Credits)**

Neuropathological bases for language disorders in adults; includes differential diagnosis and remediation techniques.

**Prerequisite or Corequisite:** COMD 744.

**COMD 706 - Preschool Language Development and Disorders (3 Credits)**

Components of communication, oral language, and speech in preschool children with diverse problems across all aspects of language learning, including factors that serve as precursors to literacy skills as well as evidence-based approaches to language assessment and intervention.

**COMD 707 - Clinical Evaluation in Communicative Disorders (1-3 Credits)**

Assigned readings and reports combined with clinical practice in the evaluation of cases in areas such as aphasia, cerebral palsy, voice disorders, articulation problems, stuttering, or cleft palate.

**COMD 708 - Directed Study in Speech Pathology (3 Credits)**

Directed readings and/or research in speech pathology. May be repeated for credit.

**COMD 709 - Laryngectomy Clinical Management (1-3 Credits)**

Pre- and postoperative clinical management of the laryngeal patient with emphasis on communication and related problems.

**COMD 710 - Selected Topics in Speech Pathology (1-3 Credits)**

Individually assigned directed readings in speech pathology. May be repeated for credit when the topics covered or subject matter is different.

**COMD 711 - Seminar in Speech Pathology (1-3 Credits)**

An in-depth study of selected issues. May be repeated for credit when the topics covered or subject matter is different.

**COMD 712 - Management and Coordination of Programs in Speech Pathology and Audiology (1-3 Credits)**

A study of management systems in funding, scheduling, and case load.

**COMD 713 - Neurogenic Disorders of Speech (1-3 Credits)**

Clinical management of the neurogenic speech disorders. Major emphasis on neuroanatomy and pathophysiology; sign and symptoms, etiology, and the diagnosis and treatment of the major disorders.

**Prerequisite or Corequisite:** COMD 502, COMD 700, AND COMD 724 or equivalent course.

**COMD 714 - Gerontology and Communicative Disorders (1-3 Credits)**

Aging, communicative processes and problems associated with aging, and specific communicative disorders associated with aging. Methods of assessment and rehabilitation will be considered.

**COMD 715 - Augmentative Communication: Assessment and Intervention (1-3 Credits)**

A study of historical perspectives, current issues, assessment, intervention techniques, and training strategies in augmentative communication.

**COMD 716 - Public Health Perspectives in Communication Sciences and Disorders (1 Credit)**

Public health issues and historical context related to speech, language, and hearing from local, national and global perspectives.

**COMD 717 - Professional Issues in Speech-Language Pathology (1 Credit)**

Issues affecting speech-language pathologists including professional education, certification, licensure, legislation, standards, and ethics.

**Prerequisites:** COMD 521 and COMD 712.

**COMD 720 - School-Age Language & Literacy Development and Disorders (3 Credits)**

The relationship between oral and written language and factors that impact reading and writing (phonological awareness, phonics, vocabulary). Reading (word-level, comprehension, fluency) and writing (composition, spelling) development, assessment, intervention and issues related to delivery of literacy services in the schools.

**COMD 721 - Cognitive Rehabilitation (1-3 Credits)**

Traumatic brain injury and implications for speech and language function including diagnostic evaluation and remediation.

**Prerequisite or Corequisite:** COMD 502 or equivalent course.

**COMD 722 - Dysphagia (1-3 Credits)**

Normal function and pathologic changes of the swallowing mechanism, including evaluation and therapeutic techniques.

**COMD 723 - Language Disorders in Adolescents (1-3 Credits)**

Diagnosis and treatment of communication problems in adolescent children, including educational psychosocial sequelae.

**COMD 724 - Introduction to Medical Speech-Language Pathology (1 Credit)**

Practical application skills for speech-language pathology in the medical setting.

**COMD 725 - Pediatric Dysphagia (1-3 Credits)**

Anatomical and physiological orientation to oral-pharyngeal swallowing disorders in young children.

**Prerequisite or Corequisite:** COMD 502, COMD 722, AND COMD 724 or equivalent course.

**COMD 726 - Advanced Cognitive Retraining (3 Credits)**

Issues in traumatic brain injury and implications for speech and language function.

**COMD 727 - Advanced Study of Literacy for Speech-Language Pathologists (2 Credits)**

Theories of reading development with regard to their implications for assessment and intervention. Connections between oral and written language skills, including vocabulary as a link between word level and text-level skills. Overall framework for thinking about literacy as a multi-component language skill.

**COMD 735 - Counseling in Speech-Language Pathology (2 Credits)**

The use of counseling skills by speech-language pathologists regarding the impact of communication disorders on the family system, the importance of interpersonal communication in counseling, and the principles and processes of counseling in facilitating behavior change.

**COMD 738 - The Speech Pathologists Role in Working with Children with Autism Spectrum Disorders (2 Credits)**

Speech-language pathologists (SLPs) are key team members in the assessment and treatment of individuals with Autism Spectrum Disorders (ASD), with 90% of school-based SLPs serving children with ASD. This course is intended to prepare students for the assessment and interventions targeting language and communication skills for children with ASD.

**COMD 744 - Neurocognitive Bases of Language Behavior (3 Credits)**

Neurocognitive bases for speech and language in the central nervous system including anatomy and physiology and theoretical constructs of language.

**Prerequisites:** COMD 501.

**COMD 745 - Introduction to Speech Science and Acoustic Measurement (3 Credits)**

The physical and related psychological attributes of speech. Use of electronic instruments and laboratory practices in measurement of acoustic variables. Introduction to information theory.

**Prerequisites:** COMD 501 and COMD 507.

**COMD 748 - Speech Pathology Management of Patients with Tracheostomy & Ventilator Dependency (2 Credits)**

Communication options and dysphagia management for speech-language pathologists working with tracheostomized patients.

**Prerequisites:** COMD 722.

**COMD 750 - Introduction to Audiology and Aural Habilitation (3 Credits)**

Basic anatomy and psycho-physics of hearing, pathologies of hearing loss, introduction to identification procedures including hearing screening and pure-tone audiometry, impact of hearing loss on preschool and school-aged children, and educational, psychological, and medical aspects of auditory habilitation.

**Prerequisites:** COMD 507 and COMD 504.

**COMD 754 - Aural (Re)Habilitation of Children and Adults (3 Credits)**

Effects of hearing loss on a child's development and also on adult function and quality of life (linguistic, intellectual, social, and educational). Communication assessment and case management, including parent and patient training, education, and counseling.

**Prerequisite or Corequisite:** COMD 501, COMD 745, and COMD 750 or their equivalent.

**COMD 755 - Aural Rehabilitation of Adults (3 Credits)**

Comprehensive rehabilitation of hearing-impaired adults with emphasis upon amplification, auditory training, and speech reading in developing communication skills.

**COMD 760 - Cochlear Implants (3 Credits)**

Anatomy and physiology of the normal cochlea and the eighth cranial nerve. Evoked otoacoustic emissions as a diagnostic medium. Cochlear pathology with emphasis on candidacy for cochlear implantation.

**COMD 761 - Habilitation of Individuals with Cochlear Implants (1-3 Credits)**

Clinical techniques for the communication assessment and habilitation of the child post cochlear implantation.

**COMD 762 - Aural Habilitation: Manual Communication (1-3 Credits)**

Basic sign vocabulary for speech-language pathologists' professional use with hearing-impaired clients. Focus on the nature and components of manual language systems.

**COMD 772 - Practicum in Speech Language Pathology and Audiology (1-13 Credits)**

Supervised clinical practice in screening, diagnosis, and therapy.

**COMD 774 - Internship in Speech Pathology (3-13 Credits)**

Supervised internship in diagnosis and treatment of children and adults with communicative disorders in clinical and public school settings in field situations.

**COMD 790 - Introduction to Research in Speech Pathology and Audiology (3 Credits)**

An introduction to research methods applicable to and utilized in speech pathology and audiology. An analysis of basic and applied research.

**COMD 791 - Research Methodology (3 Credits)**

Preparation of research designs, procedures of sampling and use of statistical measures.

**COMD 799 - Thesis Preparation (1-9 Credits)****COMD 800 - Seminar in Speech Pathology (3 Credits)**

An in depth exploration of problems, theories, and research in a specific area of speech pathology. May be repeated for credit when the topic(s) covered is different. Individual topics to be announced with title.

**COMD 801 - Advanced Topics in Speech Pathology (3 Credits)**

A series of lectures, presentations, and discussion sessions in a selected area of speech pathology. May be repeated for credit when the topic(s) covered is different. Individual topics to be announced with title.

**COMD 802 - Contemporary Issues In Speech Pathology (3 Credits)**

Issues of local, state, and national import related to the prevention or solution of problems in speech pathology.

**COMD 803 - Advanced Study of Clinical Phonology (3 Credits)**

Introduction to nonlinear phonological theory (e.g., autosegmental, metrical) and its application for assessment and intervention of children with phonological disorders.

**COMD 805 - Advanced Study of Language Disorders in Adults (3 Credits)**

Theories of language processing, language development, and the effects of neural pathology on the normal language process.

**COMD 820 - Advanced Speech Science (3 Credits)**

Advanced study of the physical and related psychological attributes of sound and measurement of acoustic variables of sound and speech. Review of current research in speech science.

**COMD 821 - Advanced Hearing Science (3 Credits)**

The normal auditory system; middle ear and cochlear physiology as determiners of auditory psychophysics.

**COMD 822 - Normal Bases of Speech Production (3 Credits)**

Processes underlying speech production, including neural control, respiration, phonation, and articulation; theories explaining the processes; measurements of physical properties of speech.

**COMD 823 - Normal Bases of Language (3 Credits)**

Advanced study of the effects of pathology on the normal language processes. Theories of language processing and development over the life span. Effects of focal and diffuse neural pathologies on language processes.

**COMD 899 - Doctoral Research and Dissertation Preparation (1-12 Credits)**

## Comp Sci & Comp Engr (CSCE)

**CSCE 500 - Computer Programming and Applications (3 Credits)**

Concepts and properties of algorithms; programming exercises with emphasis on good programming habits. Credit may not be received for both CSCE 500 and CSCE 145. Open to all majors. May not be used for major credit by computer science and engineering majors.

**CSCE 510 - System Programming (3 Credits)**

System software such as command language interpreters, client-server applications, debuggers; mail systems, browsers, macroprocessors, and revision control systems; file systems, processes, threads, and interprocess communication.

**Prerequisites:** CSCE 215, CSCE 240.

**CSCE 512 - System Performance Evaluation (3 Credits)**

Measuring, modeling, analyzing, and predicting performance of computer systems and networks; bottleneck analysis; Markovian queuing systems and networks; use of operational and probabilistic models.

**Prerequisites:** CSCE 311, STAT 509 or STAT 515.

**CSCE 513 - Computer Architecture (3 Credits)**

Design methodology; processor design; computer arithmetic: algorithms for addition, multiplication, floating point arithmetic; microprogrammed control; memory organization; introduction to parallel architectures.

**Prerequisites:** CSCE 211, CSCE 212.

**CSCE 515 - Computer Network Programming (3 Credits)**

Computer networks and communication protocols; socket programming; interprocess communication; development of network software; case studies.

**Prerequisites:** CSCE 311.

**CSCE 516 - Computer Networks (3 Credits)**

Structure, design, and analysis of computer networks; ISO/OSI network architecture.

**Prerequisites:** STAT 509 or STAT 515.

**CSCE 517 - Computer Crime and Forensics (3 Credits)**

Structure, design, and analysis of computer networks; ISO/OSI network architecture.

**Prerequisites:** CSCE 215.

**CSCE 518 - Ethical Hacking (3 Credits)**

Fundamental principles and techniques of ethical hacking, including penetration testing life cycle, planning and scoping, identifying targets and goals, active and passive reconnaissance, enumeration and scanning, exploitation, post-exploitation, and results reporting.

**Prerequisites:** CSCE 215 or previous Linux/UNIX experience.

**CSCE 520 - Database System Design (3 Credits)**

Database management systems; database design and implementation; security, integrity, and privacy.

**Prerequisites:** CSCE 240 or GEOG 563.

**CSCE 522 - Information Security Principles (3 Credits)**

Threats to information resources and appropriate countermeasures. Cryptography, identification and authentication, access control models and mechanisms, multilevel database security, steganography, Internet security, and intrusion detection and prevention.

**Prerequisites:** CSCE 146; MATH 374 or MATH 174.

**CSCE 526 - Service Oriented Computing (3 Credits)**

Cooperative information systems and service-oriented computing. Techniques for achieving coordinated behavior among a decentralized group of information system components. Distributed databases, multiagent systems, conceptual modeling, Web services, and applications.

**Prerequisites:** CSCE 311.

**CSCE 531 - Compiler Construction (3 Credits)**

Techniques for design and implementation of compilers, including lexical analysis, parsing, syntax-directed translation, and symbol table management.

**Prerequisites:** CSCE 240.

**CSCE 546 - Mobile Application Development (3 Credits)**

Development of mobile applications, including user interface design for mobile, local and cloud data storage techniques, and application architectures.

**Prerequisites:** CSCE 240 or previous programming experience with one of the following programming languages (C/C++, Java, Swift, Python, Matlab, Javascript).

**CSCE 547 - Windows Programming (3 Credits)**

Object-oriented methods and tools for application programming with graphically interactive operating systems.

**Prerequisites:** CSCE 240.

**CSCE 548 - Building Secure Software (3 Credits)**

Construction of software systems resistant to vulnerabilities and attacks. Cryptographic tools. Language, operating system, and network security. Case studies. Development of best practices through programming assignments.

**Prerequisites:** CSCE 240.

**CSCE 551 - Theory of Computation (3 Credits)**

Basic theoretical principles of computing as modeled by formal languages and automata; computability and computational complexity

**Prerequisites:** C or better in CSCE 350 or MATH 300.

**Cross-listed course:** MATH 562

**CSCE 552 - Computer Game Development (3 Credits)**

Design and development of computer games, with emphasis on the technologies used. Hands-on development of computer games.

**Prerequisites:** CSCE 240, CSCE 350.

**CSCE 555 - Algorithms in Bioinformatics (3 Credits)**

Concepts, algorithms and tools for important problems in Bioinformatics, including nucleotide and amino acid sequence alignment, DNA fragment assembly, phylogenetic reconstruction, and protein structure visualization and assessment.

**Prerequisites:** CSCE 350.

**CSCE 557 - Introduction to Cryptography (3 Credits)**

Design of secret codes for secure communication, including encryption and integrity verification: ciphers, cryptographic hashing, and public key cryptosystems such as RSA. Mathematical principles underlying encryption. Code-breaking techniques. Cryptographic protocols.

**Prerequisites:** C or better in CSCE 145 or MATH 241, and at least one of CSCE 355, MATH 300 or MATH 374.

**Cross-listed course:** MATH 587

**CSCE 561 - Numerical Analysis (3 Credits)**

Interpolation and approximation of functions; solution of algebraic equations; numerical differentiation and integration; numerical solutions of ordinary differential equations and boundary value problems; computer implementation of algorithms.

**Prerequisites:** C or better MATH 520 or in both MATH 242 and MATH 344.

**Cross-listed course:** MATH 527

**CSCE 563 - Systems Simulation (3 Credits)**

Computer simulation of real systems; principles of system organization; random number generation; programming exercises in a simulation language.

**Prerequisites:** CSCE 240, STAT 509 or STAT 515.

**CSCE 564 - Computational Science (3 Credits)**

Parallel algorithms; scientific visualization; techniques for solving scientific problems.

**Prerequisites:** MATH 526, CSCE 146 or CSCE 207 or CSCE 500.

**CSCE 565 - Introduction to Computer Graphics (3 Credits)**

Graphics hardware; graphics primitives; two-dimensional and three-dimensional viewing; basic modeling.

**Prerequisites:** CSCE 240, MATH 526 or MATH 544.

**CSCE 567 - Visualization Tools (3 Credits)**

Scientific visualization tools as applied to sampled and generated data; methods for data manipulation and representation; investigation of visualization techniques.

**Prerequisites:** CSCE 145 or CSCE 206 or CSCE 207.

**CSCE 569 - Parallel Computing (3 Credits)**

Architecture and interconnection of parallel computers; parallel programming models and applications; issues in high-performance computing; programming of parallel computers.

**Prerequisites:** knowledge of programming in a high-level language; MATH 526 or MATH 544.

**CSCE 571 - Critical Interactives (3 Credits)**

Foundational techniques in multidisciplinary software development, specifically of applications designed to present sensitive, sometimes controversial, materials in ways to engender empathic awareness of the interactor.

**Cross-listed course:** FAMS 581

**CSCE 572 - Human-Computer Interaction (3 Credits)**

Interdisciplinary approach to interaction design, user-centered design, human abilities, survey development, experimental study methodology, heuristic evaluations, usability testing, universal design, and accessibility.

**Prerequisites:** Undergraduate or graduate standing in CSE or permission of the instructor.

**CSCE 574 - Robotics (3 Credits)**

Design and application of robotic systems; emphasis on mobile robots and intelligent machines.

**Prerequisites:** CSCE 211, CSCE 212, CSCE 240.

**CSCE 578 - Text Processing (3 Credits)**

Text and natural language processing; formal models and data structures appropriate for text processing; selected topics in computational linguistics, stylistics, and content analysis.

**Prerequisites:** CSCE 330, CSCE 355.

**CSCE 580 - Artificial Intelligence (3 Credits)**

Heuristic problem solving, theorem proving, and knowledge representation, including the use of appropriate programming languages and tools.

**Prerequisites:** CSCE 350.

**CSCE 582 - Bayesian Networks and Decision Graphs (3 Credits)**

Normative approaches to uncertainty in artificial intelligence. Probabilistic and causal modeling with Bayesian networks and influence diagrams. Applications in decision analysis and support. Algorithms for probability update in graphical models.

**Prerequisites:** CSCE 350; STAT 509 or STAT 515.

**Cross-listed course:** STAT 582

**CSCE 585 - Machine Learning Systems (3 Credits)**

Design and implementation of machine learning systems. Deep learning systems stack, machine learning platforms, scalable and distributed machine learning.

**Prerequisites:** C or better in CSCE 240 or CSCE 206.

**CSCE 587 - Big Data Analytics (3 Credits)**

Foundational techniques and tools required for data science and big data analytics. Concepts, principles, and techniques applicable to any technology and industry for establishing a baseline that can be enhanced by future study.

**Prerequisites:** STAT 509, STAT 513, or STAT 515.

**Cross-listed course:** STAT 587

**CSCE 590 - Topics in Information Technology (3 Credits)**

Reading and research on selected topics in information technology. Course content varies and will be announced in the schedule of courses by title. May be repeated for credit as topics vary.

**CSCE 594 - Strategic Management of Information Systems (3 Credits)**

Strategic management and use of information systems in organizations.

**Cross-listed course:** MGSC 594

**CSCE 611 - Advanced Digital Design (3 Credits)**

Design techniques for logic systems; emphasis on higher-level CAD tools such as hardware description languages and functional modeling.

**Prerequisites:** CSCE 212.

**CSCE 612 - VLSI System Design (3 Credits)**

VLSI design process models, introduction to EDA tools, HDL modeling and simulation, logic synthesis and simulation, benchmark design projects.

**Prerequisites:** CSCE 211.

**CSCE 613 - Fundamentals of VLSI Chip Design (3 Credits)**

Design of VLSI circuits, including standard processes, circuit design, layout, and CAD tools. Lecture and guided design projects.

**Prerequisites:** ELEC 371.

**CSCE 711 - Advanced Operating Systems (3 Credits)**

Operating system organization and interactive processing systems, multiprogramming systems, process management, task scheduling, resource control, deadlocks.

**Prerequisites:** CSCE 311.

**CSCE 713 - Advanced Computer Architecture (3 Credits)**

Architecture of high-performance computers, including array processors, multiprocessor systems, data flow computers, and distributed processing systems.

**Prerequisites:** CSCE 311 and CSCE 513.

**CSCE 715 - Network Systems Security (3 Credits)**

Analysis of security threats in TCP/IP networks. Design of safeguards. Coverage of security threats at each of the OSI layers. Application of cryptographic protocols for secure communication across a network.

**Prerequisites:** CSCE 515 or CSCE 516.

**CSCE 716 - Design for Reliability (3 Credits)**

Design of more reliable systems through the application of reliability theory and models; reliability modeling; design techniques; testing; and requirement specifications.

**Prerequisites:** STAT 509 or STAT 511, or MATH 511.

**CSCE 717 - Computer System Performance and Reliability Analysis (3 Credits)**

Evaluation of computer system performance and reliability using reliability block diagrams, fault trees, reliability graphics, queuing networks, Markov models, and Markov reward models.

**Prerequisites:** STAT 509 or STAT 511.

**CSCE 718 - Real-Time Computer Applications (3 Credits)**

Problems of real-time computer applications in process control or similar areas; task scheduling; real-time operating systems; advanced interrupt structures; memory management techniques.

**Prerequisites:** CSCE 245, CSCE 311.

**CSCE 719 - Security and Privacy for Wireless Networks (3 Credits)**

This course focuses on the security and privacy issues associated with wireless networks. Various attacks against wireless networks and their defense strategies will be analyzed. Students are able to embark in research of wireless network security.

**Prerequisites:** CSCE 416.

**CSCE 721 - Physical Database Design (3 Credits)**

Components of a database management system; implementation issues; query optimization; file organization; file organizations' transaction management; fault recovery; security; system performance.

**Prerequisites:** CSCE 520.

**CSCE 723 - Advanced Database Design (3 Credits)**

Database design methodologies and tools; data models; implementation languages; user interfaces.

**Prerequisites:** CSCE 520.

**CSCE 725 - Information Retrieval: Algorithms and Models (3 Credits)**

Structure, design, evaluation, and use of information retrieval systems; algorithms and mathematical models for information retrieval; storage and retrieval of textual data in information systems.

**CSCE 727 - Information Warfare (3 Credits)**

Current trends and challenges in information warfare. High-level analysis of information warfare threats, like cyber terrorism, espionage, Internet fraud, intelligence activities, cyber ethics, and law enforcement.

**Prerequisites:** CSCE 522.

**CSCE 730 - Programming Language Semantics (3 Credits)**

Approaches for specifying programming language semantics, including operational, axiomatic, and denotational specification.

**Prerequisites:** CSCE 531.

**CSCE 740 - Software Engineering (3 Credits)**

Current practices and research in software development, requirements definition, design, program testing and reliability, maintenance, and management.

**Prerequisites:** CSCE 240.

**CSCE 741 - Software Process (3 Credits)**

Personal, team, and organizational software processes; personal and organizational maturity; application of software process and management concepts during software development, primarily at the individual level.

**CSCE 742 - Software Architectures (3 Credits)**

Structural organizations for software systems as collections of interconnected components: formal models and languages; design tools and guidelines.

**CSCE 743 - Software Requirements (3 Credits)**

Elicitation, analysis, and validation of software requirements, specification of software systems including formal specification methods; CASE tools.

**Prerequisite or Corequisite:** CSCE 740.

**CSCE 744 - Object-Oriented Analysis and Design (3 Credits)**

Fundamentals of object-oriented technology; object modeling of structure, function, and time-dependent behavior; system analysis and design.

**Prerequisites:** CSCE 350.

**CSCE 745 - Object-Oriented Programming Methods (3 Credits)**

Object-oriented programming paradigm, including encapsulation, inheritance, reusable classes, object classification, specialization, and message passing; case studies and applications.

**Prerequisites:** CSCE 245.

**CSCE 747 - Software Testing and Quality Assurance (3 Credits)**

Structural and functional techniques for testing software; code inspection, peer review, test verification and validation; statistical testing methods; preventing and detecting errors; testing metrics; test plans; formal methods of testing.

**Prerequisites:** CSCE 740.

**CSCE 750 - Analysis of Algorithms (3 Credits)**

Algorithm design techniques; algorithms and data structures for sets and graphs; time and space complexity; sorting and searching; NP-complete problems.

**Prerequisites:** CSCE 350.

**CSCE 755 - Computability, Automata, and Formal Languages (3 Credits)**

Formal models of computation, including finite state automata, Turing machines, recursive functions, formal grammars, and abstract complexity theory.

**Prerequisites:** CSCE 355 or CSCE 551.

**CSCE 758 - Probabilistic System Analysis (3 Credits)**

Application of probability theory and stochastic processes to analyze the dynamic behavior of engineering systems.

**Prerequisites:** STAT 509 or STAT 511.

**CSCE 760 - Numerical Analysis I (3 Credits)**

Numerical solution of equations and systems of linear equations, polynomial approximation, difference calculus, solution of ordinary and partial differential equations, least squares and sets of orthogonal polynomials, Gaussian quadrature.

**Prerequisites:** MATH 526 or MATH 544.

**CSCE 761 - Numerical Analysis II (3 Credits)**

Continuation of CSCE 760.

**Prerequisites:** CSCE 760.

**CSCE 763 - Digital Image Processing (3 Credits)**

Concepts and techniques for digital image processing; emphasis on low-level processes that analyze discrete images at the pixel level.

**CSCE 765 - Computer Graphics System Design (3 Credits)**

Graphics data structures, graphics languages, modeling, raster displays, 3-D shading, hidden surface algorithms.

**Prerequisites:** CSCE 565.

**CSCE 766 - Scientific Visualization (3 Credits)**

Visualization techniques for scientific computing; interactive steering of calculations; animation and rendering techniques for multivariate data analysis.

**Prerequisites:** CSCE 565.

**CSCE 767 - Interactive Computer Systems (3 Credits)**

Principles for the design of systems supporting effective human-computer interaction; interaction styles; displays and interactive devices; user assistance; system design and evaluation.

**CSCE 768 - Pattern Recognition and Classification (3 Credits)**

Bayesian classifiers; optimal risk schemes; error rates; numerical methods; implementation; architectures.

**Prerequisites:** STAT 509 or STAT 510 or STAT 511.

**CSCE 769 - Computational Structural Biology (3 Credits)**

Theoretical concepts and algorithmic tools currently utilized in the field of protein folding such as Xplor-NIH and ROSETTA are presented. Participants are enabled to embark in research of protein folding.

**Prerequisites:** linear algebra.

**CSCE 771 - Computer Processing of Natural Language (3 Credits)**

Computational models for the analysis and synthesis of natural language; representations for syntax and semantics; applications to text-to-speech conversion, speech recognition, and language understanding.

**Prerequisites:** CSCE 580.

**CSCE 772 - Computer Speech Processing (3 Credits)**

A/D conversion, digital filters, discrete Fourier transform and FFT, acoustics of speech, and synthesis and recognition of speech.

**Prerequisites:** CSCE 580.

**CSCE 774 - Robotics Systems (3 Credits)**

Design and operation of robot systems; dynamics, control, and motion trajectories of manipulators; visual, auditory, and tactile sensing systems; planning and learning.

**Prerequisites:** CSCE 574.

**CSCE 780 - Knowledge Representation (3 Credits)**

Representation techniques and languages for symbolic knowledge, including predicate calculus, frame-based systems, and terminological systems; computer reasoning using these systems.

**Prerequisites:** CSCE 580.

**CSCE 781 - Knowledge Systems (3 Credits)**

Expert system domains, knowledge representation techniques, inference engines, and knowledge acquisition methods.

**Prerequisites:** CSCE 580.

**CSCE 782 - Multiagent Systems (3 Credits)**

Coordinated problem solving by multiple knowledge systems.

**Prerequisites:** CSCE 580.

**CSCE 784 - Neural Information Processing (3 Credits)**

Mathematical foundations of biological and artificial neural networks, supervised and unsupervised systems, applications.

**Prerequisites:** MATH 526 or MATH 544.

**CSCE 787 - Introduction to Fuzzy Logic (3 Credits)**

Principles of fuzzy set theory, fuzzy relations, and fuzzy logic; fuzzy "if-then" rules.

**Prerequisites:** MATH 174.

**CSCE 790 - Topics in Information Technology (1-3 Credits)**

Reading and research on selected topics in information technology. Course content varies and will be announced in the schedule of courses by title. May be repeated for credit as topics vary.

**CSCE 791 - Seminar in Advances in Computing (1 Credit)**

Technical writing and presentations in major computing research areas; ethics in research and writing.

**CSCE 793 - Internship in Software Engineering (1 Credit)**

Work. Written report required. Not auditable.

**CSCE 797 - Individual Study and Research (1-12 Credits)**

Individual research to be arranged with the instructor.

**CSCE 798 - Directed Study and Research (1-12 Credits)**

Individual research to be arranged with the instructor.

**CSCE 799 - Thesis Preparation (1-12 Credits)****CSCE 813 - Internet Security (3 Credits)**

Study security threats and prevention/detection/response techniques on the Internet, including hackers, masqueraders, information spoofing, sniffing, and distribution of damaging software. Security analysis of Web applications.

**Prerequisites:** CSCE 522 and CSCE 715.

**CSCE 814 - Distributed Systems Security (3 Credits)**

Security mechanisms of distributed software systems, including cryptographic applications. Secure multiparty computation, group-based cryptography, and security mechanisms for emerging distributed architectures.

**Prerequisites:** CSCE 522.

**CSCE 815 - Computer Communications (3 Credits)**

Contemporary computer communication protocols and network architectures.

**Prerequisites:** CSCE 515 or CSCE 516.

**CSCE 818 - Top-Down VLSI Design (3 Credits)**

VLSI system design automation, hardware description language-based design, multi-methodology design, and introduction to HDL support tools.

**Prerequisites:** CSCE 611 or CSCE 612.

**CSCE 819 - Custom VLSI Design (3 Credits)**

Custom design methodology design rules, stick notation, logic synthesis, and circuit layout; symbolic layout languages; introduction to CAD tools.

**Prerequisites:** CSCE 611 or CSCE 612.

**CSCE 821 - Distributed Database Design (3 Credits)**

Architecture, design, and implementation of distributed database managements systems; data fragmentation, replication, and allocation; query processing and transaction management; distributed object database management systems.

**Prerequisites:** CSCE 520.

**CSCE 822 - Data Mining and Warehousing (3 Credits)**

Information processing techniques and mathematical tools to assemble, access, and analyze data for decision support and knowledge discovery.

**Prerequisites:** CSCE 520.

**CSCE 824 - Secure Database Systems (3 Credits)**

Security threats to database systems. Access control models, multilevel security, integrity, Web-based databases, and data inference problem. Formal models of multilevel security, confidentiality versus availability and integrity.

**Prerequisites:** CSCE 522.

**CSCE 826 - Cooperative Information Systems (3 Credits)**

Strategies for achieving coordinated behavior among a heterogeneous group of information system components; world-wide information networks and applications in health care, logistics, telecommunications, and manufacturing automation.

**Prerequisites:** CSCE 520, CSCE 580.

**CSCE 846 - Software Reliability and Safety (3 Credits)**

Reliability and safety of computer-intensive systems; software reliability models and analysis; operational profiles; hazard analysis using fault trees and event trees; formal verification of safety-critical systems.

**Prerequisites:** STAT 509 or STAT 510 or STAT 511.

**CSCE 850 - Advanced Analysis of Algorithms (3 Credits)**

Definitions of algorithms and formal models of computation; concepts of space and time; synthesis and analysis of algorithms for sorting, search graphs, set manipulation and pattern matching; NP-complete, and intractable problem.

**Prerequisites:** CSCE 750.

**CSCE 853 - Formal Methods in Computer Security (3 Credits)**

Formal techniques applied to computer security, including formal specification language for security properties, security analysis utilities, domain-specific security concerns, and case studies of formally verified secure systems.

**Prerequisites:** CSCE 522 and CSCE 715.

**CSCE 865 - Advanced Computer Graphics (3 Credits)**

Input and display devices, data structures, architectures, primitives, and geometrical transformations appropriate to computer graphics, parametric surfaces.

**Prerequisites:** CSCE 765.

**CSCE 867 - Computer Vision (3 Credits)**

Scene segmentation using texture, color, motion; representation of 2-D or 3-D structures; knowledge-based vision systems.

**Prerequisites:** CSCE 763.

**CSCE 868 - Advanced Pattern Recognition (3 Credits)**

Feature nomination, selection, extraction, and evaluation; deterministic, stochastic, and fuzzy models for classifier design; parameter estimation; error rate estimation; clustering and sequential learning.

**Prerequisites:** CSCE 768.

**CSCE 883 - Machine Learning (3 Credits)**

Fundamentals of machine learning including rote learning, learning from examples, learning from observations, and learning by analogy; knowledge acquisition for expert systems.

**Prerequisites:** CSCE 580.

**CSCE 895 - Ph.D. Seminar (1-3 Credits)****CSCE 899 - Dissertation Preparation (1-12 Credits)**

## Comparative Literature (CPLT)

**CPLT 597 - Special Topics in Comparative Studies in Film and Media (3 Credits)**

Topics in film and media from an international perspective. National cinematic traditions are compared and contrasted. May be repeated as content varies by title.

**Graduation with Leadership Distinction:** GLD: Global Learning

**CPLT 700 - Introduction to Graduate Studies in Languages, Literatures, and Cultures (3 Credits)**

An introduction to graduate studies that includes a survey of contemporary literary theory, an overview of the current state of the profession, and instruction in how to carry out research and write at the graduate level.

**Cross-listed course:** FREN 700, GERM 700, SPAN 700

**CPLT 701 - Classics of Western Literary Theory (3 Credits)**

Problems of literary theory in texts from the ancients to the 17th century, with an emphasis on the classical tradition.

**Cross-listed course:** ENGL 733

**CPLT 702 - Modern Literary Theory (3 Credits)**

Problems of literary theory from the 18th century to the 1960s.

**Cross-listed course:** ENGL 734

**CPLT 703 - Topics in Contemporary Literary Theory (3 Credits)**

Presents an in-depth study of selected schools or trends in contemporary literary theory.

**CPLT 720 - The Periods of Literature (3 Credits)**

The study of one cultural period as an international movement. Topics will vary.

**CPLT 730 - The Literary Genre (3 Credits)**

Study of a genre from its inception to the present and its manifestations in the several literatures. Topics will vary.

**CPLT 740 - Themes in Literature (3 Credits)**

The study of recurrence and mutation in literary themes. Topics will vary.

**CPLT 750 - Cross-Cultural Literary Relations (3 Credits)**

Topics will vary and will be announced (e.g., Anglo-French literary relations, 1740-1900; 20th-century German-American literary relations).

**CPLT 760 - Literature and Translation: Theory and Practice (3 Credits)**

A survey of recent translation theory as it relates to literature, combined with translation analysis and actual translation of literary texts.

**CPLT 765 - Advanced Film Study (3 Credits)**

Methods of film analysis, resources for research, and the major critical theories.

**Cross-listed course:** ENGL 765

**CPLT 777 - Supervised Instruction in Teaching Foreign Languages in College (0 Credits)**

Supervised direction of foreign language teaching in college. Required of all graduate assistants who are teaching. This course will not count toward the MA or PhD degree.

**CPLT 799 - Thesis Preparation (1-9 Credits)****CPLT 850 - The Teaching of Comparative Literature (3 Credits)**

Open to Ph.D. candidates who have passed their comprehensive examinations.

**CPLT 880 - Seminar in Comparative Literature (3 Credits)****CPLT 881 - Seminar in Comparative Literature (3 Credits)****CPLT 882 - Seminar in Comparative Literature (3 Credits)****CPLT 883 - Seminar in Comparative Literature (3 Credits)****CPLT 895 - Research (3 Credits)****CPLT 896 - Research (3 Credits)****CPLT 899 - Dissertation Preparation (1-12 Credits)**



## COSM - Prof Master of Sci Prog (COSM)

### COSM 701 - Business and Legal Issues for Science Managers (3 Credits)

Survey of skills requisite for careers in domestic or international business: economics, finance, accounting, management, marketing, presentation skills, patent law, regulatory issues, other subjects for managers of science/technology-based businesses.

### COSM 702 - Scientific and Technological Problems in Business and Industry (3 Credits)

Seminar course in problem solving, responding to cases with significant technical components, drawn from business/industry. Students analyze cases to propose solutions to problems, integrating the major activities of a technically oriented business.

### COSM 790 - Internship in Science and Technology Based Business (3 Credits)

Internship in industry, government agency, or national laboratory. Internship experience culminates in oral and written reports on duties and projects. Internship must include a minimum of 150 hours of experience at the internship site.

## Counseling Education (EDCE)

### EDCE 502 - Guidance Techniques for Classroom Teachers (3 Credits)

### EDCE 503 - Family Counseling (3 Credits)

A comparative study of the major theories in the field of family counseling.

### EDCE 507 - Educators in Industry (3 Credits)

The course is designed to provide counselors, teachers, and administrators with increased awareness of a wide variety of work experiences.

### EDCE 510 - Introduction to Counseling (3 Credits)

Orientation to the profession of counseling including its historical, social, and cultural foundations. Declaration of the minor in counseling or admission to the Ed.S. in Counselor Education.

### EDCE 520 - Wellness and Mental Health (3 Credits)

An overview of the characteristics of optimal holistic wellness and human functioning. Practical application of theoretically and empirically supported wellness models and interventions to enhance social, emotional, mental, physical, and spiritual well-being.

### EDCE 555 - Theory and Practice of College Mentoring (3 Credits)

Emphasis on current professional approaches to college mentoring and development of leadership and mentoring skills. Students must participate in Minority Assistance Program. Upper division undergraduate standing or admission to a graduate program and consent of instructors.

### EDCE 570 - Seminar in Counseling (3 Credits)

Declaration of the minor in counseling.

### EDCE 600 - Communication Skills in Counseling (3 Credits)

Human relations principles applied to the counseling interview.

### EDCE 650 - Counseling Student Athletes (3 Credits)

Issues facing student athletes regarding their personal and career development beyond athletics.

**Cross-listed course:** PEDU 660

### EDCE 690 - Independent Study (1-3 Credits)

### EDCE 700 - Cross-Cultural Counseling (3 Credits)

Basic concepts and procedures related to cross-cultural counseling; relevant issues which constitute the core of counseling effectively from a cross-cultural perspective; the development of specific learning strategies through which counselor trainees acquire fundamental skills of cross-cultural counseling. This course number and title will be offered with a specific perspective each time, such as blacks, women, ethnic groups, etc.

### EDCE 701 - Counseling Parents of Exceptional Children (3 Credits)

Principles and techniques of counseling parents of exceptional children.

### EDCE 702 - Counselor as Consultant (3 Credits)

History, theories, and practices of consultation and counseling program coordination.

**Prerequisites:** EDCE 510.

### EDCE 704 - Theory and Procedures of Group Counseling (3 Credits)

A comparative study of major theories of group counseling and related research with emphasis on group interaction within a counseling setting. Laboratory applications expedite understanding of theory and practice.

**Prerequisites:** EDCE 721, EDCE 722.

### EDCE 705 - Educational Measurement (3 Credits)

The history of educational and psychological measurement. Consideration of concepts such as validity and reliability of educational and psychological measures, the rationale of the development and use of instruments for educational purposes.

### EDCE 706 - Assessment in Counseling (3 Credits)

Knowledge and application of assessment techniques and instruments utilized in school, career, individual, and family counseling.

### EDCE 707 - Career Development (3 Credits)

Career development principles and practices in school and other settings.

### EDCE 708 - Critical Issues in School Counseling (3 Credits)

Study of school counseling programs, including school counseling issues; program development, implementation, and evaluation; and current trends.

### EDCE 709 - Counseling Through Play (3 Credits)

Interpreting play and using play techniques to facilitate the counseling process.

**Prerequisites:** EDCE 510, EDCE 600.

### EDCE 710 - Professional, Legal and Ethical Issues in Counseling (3 Credits)

Ethical concerns and legal mandates and constraints related to the counseling profession including issues regarding education, supervision, research, and policy development.

**Prerequisites:** EDCE 510.

### EDCE 711 - Advanced Family Counseling (3 Credits)

Advanced study of children within the context of family counseling theories.

**Prerequisites:** EDCE 503 or equivalent.

### EDCE 712 - Comprehensive Developmental School Counseling (3 Credits)

Study of the elements of and practices in a comprehensive developmental school counseling program.

**Prerequisites:** EDCE 510.

### EDCE 714 - Clinical Mental Health Counseling (3 Credits)

Surveying required knowledge and skills for the clinical mental counselor.

**EDCE 715 - Sexuality Counseling (3 Credits)**

An overview of a family systems approach to understanding and treating clinical issues related to human sexuality.

**Prerequisites:** EDCE 503, EDPY 705.

**EDCE 716 - Leaders in Counselor Education (3 Credits)**

Survey and analysis of the works of prominent leaders in counselor education (i.e., behavioral, cognitive, existential approaches). Course content varies and will be announced in the schedule of classes by title.

**EDCE 717 - Career Practicum (3 Credits)**

A supervised experience in an approved setting that develops and assesses the individual's facilitation skills in career development.

**Prerequisites:** EDCE 502, EDCE 600, EDCE 700, EDCE 706, and EDCE 707.

**EDCE 720 - Theories of Counseling (3 Credits)**

An introduction to counseling theories and models.

**Prerequisites:** EDCE 600.

**EDCE 721 - Techniques of Counseling (3 Credits)**

Emphasis on development of techniques for assisting clients' personal, social, spiritual, and career development.

**Prerequisites:** EDCE 510, EDCE 700, EDCE 712, and EDCE 720.

**EDCE 722 - Group Procedures in Counseling (3 Credits)**

Group process and dynamics applied to counseling in group settings.

**Prerequisites:** EDCE 510 and EDCE 720.

**EDCE 723 - Counseling Supervision Theory (3 Credits)**

Comparative study of major approaches to counseling supervision and related research with emphasis on historical foundations of supervision, supervisee characteristics, and application of concepts and techniques to specific practice settings.

**EDCE 724 - Techniques of Clinical Mental Health Counseling (3 Credits)**

Assisting clients with personal, social, spiritual and career development.

**Prerequisites:** EDCE 600 and EDCE 720.

**EDCE 730 - Counseling and Spirituality (3 Credits)**

Current knowledge about counseling and spirituality, including theories of spiritual development, assessment of spirituality, and best practices interventions with children and families.

**EDCE 799 - Thesis Preparation (1-9 Credits)****EDCE 800 - Special Topics in Counseling (1-3 Credits)**

Advanced study of children within the context of family counseling theories.

**Prerequisites:** EDCE 503 or equivalent.

**EDCE 801 - Advanced Techniques in School Counseling (3 Credits)**

This course is designed to help students understand the connection between theory and practice and give them an opportunity to try out this new knowledge. This additional work in both theory and practice will help students to be better prepared for their practicum and internship experiences.

**Prerequisites:** EDCE 721.

**EDCE 802 - Practicum in Human Development and Counseling (3 Credits)**

Supervised counseling experience in an approved institution or agency.

**EDCE 802E - Elementary School Counseling Practicum (3 Credits)**

Supervised counseling experience in an approved elementary school setting. Approved elementary school counseling practicum application.

**EDCE 802F - Marriage, Couples, and Family Counseling Practicum (3-6 Credits)**

Supervised counseling experience in an approved institution or agency. Full admission into a counselor program and program specifics as approved by faculty.

**EDCE 802P - Practicum in Play Therapy (3 Credits)**

Supervised counseling experience in an approved setting focusing on play therapy, counseling through play and expressive arts therapy.

**Prerequisites:** EDCE 709; EDCE 809; EDPY 705; EDCE 810; EDCE 811.

**EDCE 802S - Secondary School Counseling Practicum (3 Credits)**

Supervised counseling experience in an approved secondary school setting. Approved secondary school counseling practicum application.

**EDCE 803 - Practicum in Clinical Mental Health Counseling (3 Credits)**

Supervised counseling experience in an approved mental health agency or practice. Full admission into the counselor education program and program specific courses as approved by program faculty.

**EDCE 804 - Internship in Clinical Mental Health Counseling (3-6 Credits)**

Supervised counseling experience in an approved clinical mental health setting.

**Prerequisites:** EDCE 803.

**EDCE 805 - Counseling Internship (3-6 Credits)**

Counseling experience will be gained in a work setting similar to that in which a counselor will eventually be employed. Internship application must be submitted early in the semester preceding enrollment.

**Prerequisites:** EDCE 802.

**EDCE 805E - Elementary School Counseling Internship (3-6 Credits)**

Counseling experience in an elementary school setting.

**Prerequisites:** EDCE 802S and approved internship application.

**EDCE 805F - Marriage, Couples and Family Counseling Internship (3-6 Credits)**

Counseling experience will be gained in a work setting similar to that in which a counselor will eventually be employed.

**Prerequisites:** EDCE 802F and approved internship application.

**EDCE 805S - Secondary School Counseling Internship (3-6 Credits)**

Supervised counseling experience in an approved secondary school setting.

**Prerequisites:** EDCE 802E.

**EDCE 807 - Advanced Career Development (1-3 Credits)**

Theories of career development and career decision making. Critique of career development programs in institutions and agencies. Students may repeat the course for up to a total of 3 credit hours.

**Prerequisites:** EDCE 707.

**EDCE 809 - Advanced Counseling Through Play (3 Credits)**

Development of advanced theoretical and skill-based competencies in the practices of play therapy.

**Prerequisites:** EDCE 709, EDCE 802.

**EDCE 810 - Theory and Practice of Play Therapy (3 Credits)**

Basic concepts and practices related to the history of play therapy, developmental issues and ethical considerations in working theory to the practices of play therapy.

**Prerequisites:** EDCE 510, EDCE 600.

**EDCE 811 - Creative Arts in Counseling| (3 Credits)**

An examination of the history, rationale, theories, research and techniques of using the creative arts in counseling. Particular attention will be given to the therapeutic values or visual and verbal arts.

**Prerequisites:** EDCE 510, EDCE 600.

**EDCE 812 - Counseling Skills Assessment Lab (3 Credits)**

Emphasis on assessment of counseling skill development and application of theory to practice through supervised work with clients in a laboratory setting in preparation for field-based practicum.

**Corequisite:** EDCE 813.

**EDCE 813 - Professional Issues in Counseling (3 Credits)**

Emphasis on ethical issues related to counseling practice, research, writing, and continuing education including assessment and development of professional writing skills.

**Corequisite:** EDCE 812.

**EDCE 820 - Advanced Transcultural Counseling (3 Credits)**

Advanced principles and practices for transcultural counseling.

**Prerequisites:** EDCE 700.

**EDCE 822 - Advanced Practicum (3 Credits)**

Doctoral level supervised counseling experience in field settings relevant to students professional goals.

**EDCE 823 - Advanced Counseling Theory (3 Credits)**

Emphasis on formulation and evaluation of the theoretical basis for approaches to counseling including, study of historical and contemporary perspectives.

**Prerequisites:** EDCE 802.

**EDCE 825 - Empirical Basis of Counseling (3 Credits)**

An analysis of the empirical basis of counseling practice and theory with attention to special problems related to counseling research.

**EDCE 830 - Pedagogy in Counselor Education (3 Credits)**

Examination of pedagogy instructional principles, and evaluation procedures for counselor education in higher education settings.

Admission to the Ph.D. program in Counselor Education.

**EDCE 832 - Practicum in Counseling Supervision (3 Credits)**

Seminars and directed practice in counseling supervision. Contact department for application deadline. Internship application must be completed early in the semester preceding enrollment.

**Prerequisites:** EDCE 822 and EDCE 830.

**EDCE 855 - Internship in Counselor Education (1-3 Credits)**

Teaching, consultation, counseling, and/or supervision experience is gained in field settings relevant to student's professional goals; includes clinical supervision and professional development.

**EDCE 856 - Supervised Internship in Counselor Education - Teaching (3 Credits)**

Teaching experience is gained in field settings relevant to student's professional goals; includes supervision of teaching and professional development.

**Prerequisites:** EDCE 830.

**EDCE 879 - Group Counseling Practicum (1-3 Credits)**

Supervised experience in group counseling. Students may repeat the course for up to a total of 3 credit hours.

**Prerequisites:** EDCE 802.

**EDCE 890 - Independent Study (3 Credits)****EDCE 899 - Dissertation Preparation (1-12 Credits)**

## Criminal Justice (CRJU)

**CRJU 510 - Critical Incident Management for Criminal Justice (3 Credits)**

Leadership and management strategies for criminal justice agencies during critical incidents and disasters including multi-agency and multi-jurisdictional response.

**CRJU 512 - Information-Based Management in Criminal Justice (3 Credits)**

The collection and use of information and data-driven analysis in criminal justice organizations.

**CRJU 535 - Inmates and Prisons (3 Credits)**

Examination of issues affecting prisons and the inmates confined within them. Specific topics of study will include the philosophy and goals of imprisonment, institutional crowding, inmate rights, inmate adaptation, and individual and collective misconduct.

**CRJU 554 - Women and Crime (3 Credits)**

Impact of gender-based relations on crime and the criminal justice system.

**Cross-listed course:** WGST 554

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy, GLD: Global Learning, GLD: Professional and Civic Engagement Leadership Experiences

**CRJU 558 - Crime Over the Life Course (3 Credits)**

Development of criminal and delinquent behavior over time.

**CRJU 563 - Race, Crime, and Criminal Justice (3 Credits)**

An historical overview of the intersection between issues of race, crime, and justice. The impact of the criminal justice system on minority groups.

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy

**CRJU 565 - Organized Crime (3 Credits)**

Origins and modern day activity of organized crime in the United States and internationally will be investigated. Attention is given to problems of criminal activity and the present day transnational character of criminal organizations.

**CRJU 575 - The Death Penalty (3 Credits)**

Overview of the history and evolution of the death penalty. Identification of key legal developments in death penalty jurisprudence.

**CRJU 577 - Law and Criminal Justice Policy (3 Credits)**

Legal and policy responses to crime and criminal justice issues.

**Prerequisites:** CRJU 313 or CRJU 314.

**CRJU 582 - Computer Applications in Criminal Justice (3 Credits)**

Computing, database systems, and software applications in research and professional practice.

**CRJU 591 - Selected Topics in Criminal Justice (3 Credits)**

A seminar for advanced students. Individual topics to be announced by title. May be repeated once with the consent of the advisor.

**CRJU 701 - Survey of Criminal Justice (3 Credits)**

Classical and recent literature in criminal justice. Trends and issues that transcend criminal justice.

**CRJU 702 - Law and Justice (3 Credits)**

Examination of law as an instrument of criminal justice policy, social control, and the protection of civil liberties.

**CRJU 703 - Research Methods in Criminal Justice (3 Credits)**

Scientific methods in criminal justice research to include methods of design, data collection, and interpretation of research findings.

**CRJU 704 - Organization and Management in Criminal Justice (3 Credits)**

Management strategies and selected analytic tools for the administration of criminal justice agencies.

**CRJU 705 - Quantitative Methods in Criminal Justice (3 Credits)**

Descriptive and inferential statistics and the use of computers in criminal justice.

**CRJU 706 - Advanced Quantitative Analysis for Criminology and Criminal Justice (3 Credits)**

A detailed treatment of the general linear model, logistic regression analysis, and statistical models for event count data with applications in criminology and criminal justice. Restricted to criminology and criminal justice majors.

**CRJU 711 - Police Practices and Problems (3 Credits)**

Historical and contemporary role of the police, societal expectations, resource allocation, police policies, and the effectiveness of various police strategies in controlling crime.

**CRJU 712 - Police Administration and Management (3 Credits)**

Principles of leadership and management applied to law enforcement.

**CRJU 714 - Ethics in Criminal Justice (3 Credits)**

Classic and contemporary theories of ethics and their applications to criminal justice decision-making.

**Cross-listed course:** PHIL 715

**CRJU 731 - Corrections (3 Credits)**

Historical development of corrections, trends, and changes in the field of corrections and rehabilitation.

**CRJU 732 - Correctional Policy (3 Credits)**

Policy development, implementation, and evaluation in corrections.

**CRJU 741 - Criminology (3 Credits)**

The major theories of the etiology of criminal behavior, including biological, environmental, and other causative factors.

**CRJU 751 - Juvenile Justice (3 Credits)**

Historical evolution of the juvenile justice system.

**CRJU 752 - Prevention and Treatment of Delinquency (3 Credits)**

Theories and methodologies for the organization of delinquency prevention and control programs. Emphasis on the role of the program evaluation.

**CRJU 791 - Selected Topics in Criminal Justice (3 Credits)**

Seminar for advanced students. Topics of current importance, such as drugs, judicial reform, or crime prevention. May be repeated for credit up to 6 semester hours with consent of advisor.

**CRJU 792 - Directed Study in Criminal Justice (3 Credits)**

Independent study for advanced students, under faculty supervision. May be repeated for credit up to 6 semester hours.

**CRJU 794 - Internship in Criminal Justice (3 Credits)**

Placement in a criminal justice agency under faculty supervision.

**CRJU 799 - Thesis Research: Thesis Preparation (1-9 Credits)****CRJU 810 - Crime, Law, and Public Policy (3 Credits)**

The study of the legal and policy-making processes as they apply to criminology and criminal justice. Examines the interrelationships between law, crime, and public policy and the research methodologies appropriate for the study of crime-related policies.

**CRJU 814 - Research Design in Criminology and Criminal Justice (3 Credits)**

Intensive coverage of the logic and practice of research design and measurement issues commonly encountered in criminology and criminal justice research. Emphasizes the use of experimental research designs as the preferred methodology for making causal inferences.

**CRJU 816 - Applied Quantitative Data Analysis (3 Credits)**

Review of applied quantitative methodological literature in criminology and criminal justice. Topics include analysis of data from randomized field experiments, interrupted time-series studies, regression discontinuity studies, instrumental variable estimation, treatment probability matching estimators, statistical power analysis, and study planning.

**CRJU 817 - Qualitative Research Methods and Data Analysis (3 Credits)**

Examination of the qualitative research paradigm and its contribution to social inquiry, including the collection, organization, and analysis of qualitative data. Collection and analytic strategies involve interviewing, observation, and textual analysis.

**CRJU 821 - Advanced Criminological Theory (3 Credits)**

Advanced coverage of theoretical and developments and empirical research in criminology, with a focus on definitive statements from important theoretical traditions, empirical tests of criminological theories, and the translation of theory into policy.

**CRJU 899 - Dissertation Preparation (1-12 Credits)**

Dissertation Preparation.

## Curriculum Studies (EDCS)

**EDCS 625 - Solving Practical Problems in School Curriculum (3 Credits)**

An introduction to current and promising designs and approaches to curriculum development from grades K-12.

**EDCS 690 - Independent Study (1-3 Credits)****EDCS 710 - Diversity Training for Staff Development (3 Credits)**

Review of the history, concepts, current techniques, skills, and issues in diversity training as it applies to effective staff development.

**EDCS 720 - Introduction to Diversity and the Curriculum (3 Credits)**

An introduction to the vast array of differences among children, youth, and adults and the impact of these differences on the curriculum, their learning, and their social and emotional development.

**EDCS 721 - Social Class Diversity and the Curriculum (3 Credits)**

The interplay of social class diversity, curriculum development, and success in formal schooling. Promising programs and practices for educating children of poverty are critically examined.

**EDCS 722 - Racial and Ethnic Diversity and the Curriculum (3 Credits)**

A critical examination of theories of race and ethnicity and their impact on the curriculum. The dynamics of dominance, issues of social justice, and means of social action are explored.

**EDCS 723 - Understanding Sexual Diversity in Schools and Other Social Institutions (3 Credits)**

An examination of issues and concepts relating to sexual diversity as it applies to formal and nonformal educational settings with particular emphasis on curriculum, educational policy, and school practice.

**EDCS 724 - Gender Diversity in Schools and Communities (3 Credits)**

A study of gender, culture, and power; research and theory from educational psychology, sociology, history, and current feminist scholarship.

**EDCS 725 - Principles of Curriculum Construction (3 Credits)**

Presentation of methods and procedures to design, develop, implement, and evaluate curricula.

**EDCS 726 - Curriculum Leadership (3 Credits)**

Study of theory, research, and practice of curriculum leadership as a transformative enterprise with particular focus on embracing diversity and fostering social justice in schools and other social institutions.

**Prerequisites:** EDCS 725.

**EDCS 727 - Curriculum Issues in Practice (3 Credits)**

Each student identifies and studies a contemporary curriculum issue pertaining to diversity. Under faculty supervision, observations and interviews in schools and/or community agencies will take place throughout the semester.

**Prerequisites:** EDCS 725 or equivalent.

**EDCS 728 - Curriculum in Higher Education (3 Credits)**

A survey of the design and development of post-secondary curriculum.

**EDCS 729 - Organizational Change in Education (3 Credits)**

Investigation of the process of diffusion and adoption of innovations and change in schools and communities, with a particular emphasis on the inclusion of and impact on diverse populations.

**EDCS 799 - Thesis Preparation (1-9 Credits)****EDCS 812 - Principles of Action Research (3 Credits)**

Introductory analysis, interpretation, and systematic study, using action research methodology, of a significant question or issue related to teaching or administration in K12 schools, higher education, and/or other social institutions.

**EDCS 813 - Advanced Principles of Action Research (3 Credits)**

Advanced analysis, interpretation, and systematic study, using action research methodology, of a significant question or issue related to teaching, administration in K12 schools, higher education, and/or other social institutions.

**EDCS 820 - Advanced Study of Diversity and Curriculum (3 Credits)**

The formulation and use of interpretive frameworks to study and understand the relationships among human diversity, school structures, and the curriculum.

**EDCS 821 - Curriculum Theory (3 Credits)**

An advanced curriculum course designed to allow students to investigate and analyze curriculum studies discourse and its application to issues of diversity.

**EDCS 822 - Curriculum Classics: Trends and Issues (3 Credits)**

The systematic presentation of classic curriculum works as they relate to current theoretical issues in education.

**EDCS 823 - Curriculum Inquiry (3 Credits)**

Examination of empirical, critical, and phenomenological methods and issues in conducting curriculum research.

**EDCS 824 - Curriculum Seminar (3 Credits)**

Intensive study of a designated topic influencing curriculum theory and/or practice.

**EDCS 890 - Independent Study (3 Credits)****EDCS 899 - Dissertation Preparation (1-12 Credits)**

## Dance (DANC)

**DANC 500 - Selected Topics in Dance (1 Credit)**

A series of courses, each lasting one-third of a semester. Topics and required courses are announced in the class schedule for each semester.

**DANC 573 - Dancer's Workshop (1 Credit)**

Individual advanced training in movement, improvisation, flexibility, and precision in dance styles including modern and ballet.

**Prerequisites:** graduate standing or three credits in dance.

**DANC 577 - Dance Performance (3 Credits)**

Rehearsal, choreographic analysis, and dance performance. All components of dance production—including music, costume, lighting, and scenery—will be considered.

**Cross-listed course:** PEDU 577

**DANC 586 - The Articulate Body (3 Credits)**

Theoretical and experimental exploration of the major body systems and development movements to bring more articulation to the body and more awareness and physical ease in performance.

**Cross-listed course:** THEA 586

**DANC 599 - Special Topics in Dance (3 Credits)**

Reading and research on selected topics. Course content varies and will be announced in the schedule of classes by title. May be repeated once as topics vary.

## DMSB - Darla Moore Sch of Busn (DMSB)

**DMSB 700A - Language Training in International Business I (3 Credits)**

Language: Arabic. Language and culture instruction to enable graduates to function in business in regions other than their native country. Not for graduate credit in a foreign language department.

**DMSB 700C - Language Training in International Business I (3 Credits)**

Language: Chinese. Language and culture instruction to enable graduates to function in business in regions other than their native country. Not for graduate credit in a foreign language department.

**DMSB 700E - Language Training in International Business I (3 Credits)**

Language: English. Language and culture instruction to enable graduates to function in business in regions other than their native country. Not for graduate credit in a foreign language department.

**DMSB 700F - Language Training in International Business I (3 Credits)**

Language: French. Language and culture instruction to enable graduates to function in business in regions other than their native country. Not for graduate credit in a foreign language department.

**DMSB 700G - Language Training in International Business I (3 Credits)**

Language: German. Language and culture instruction to enable graduates to function in business in regions other than their native country. Not for graduate credit in a foreign language department.

**DMSB 700I - Language Training in International Business I (3 Credits)**

Language: Italian. Language and culture instruction to enable graduates to function in business in regions other than their native country. Not for graduate credit in a foreign language department.

**DMSB 700J - Language Training in International Business I (3 Credits)**

Language: Japanese. Language and culture instruction to enable graduates to function in business in regions other than their native country. Not for graduate credit in a foreign language department.

**DMSB 700K - Language Training in International Business I (3 Credits)**  
Language: Korean. Language and culture instruction to enable graduates to function in business in regions other than their native country. Not for graduate credit in a foreign language department.

**DMSB 700P - Language Training in International Business I (3 Credits)**  
Language: Portuguese. Language and culture instruction to enable graduates to function in business in regions other than their native country. Not for graduate credit in a foreign language department.

**DMSB 700R - Language Training in International Business I (3 Credits)**  
Language: Russian. Language and culture instruction to enable graduates to function in business in regions other than their native country. Not for graduate credit in a foreign language department.

**DMSB 700S - Language Training in International Business I (3 Credits)**  
Language: Spanish. Language and culture instruction to enable graduates to function in business in regions other than their native country. Not for graduate credit in a foreign language department.

**DMSB 701 - Introduction to the European Union (1 Credit)**  
Business issues in the European Union emphasizing how European integration affects business decisions. Restricted to IMBA-Vienna Option Students. Effective Spring 2003.

**DMSB 703A - Language Training in International Business II (3 Credits)**  
Language: Arabic. A continuation of DMSB 700 for practice in written and oral communication as may be required for students enrolled in the International Master of Business Studies program. Open to M.I.B.S. majors only. Not for major credit in a graduate program in the foreign language department.

**DMSB 703C - Language Training in International Business II (3 Credits)**  
Language: Chinese. A continuation of DMSB 700 for practice in written and oral communication as may be required for students enrolled in the International Master of Business Studies program. Open to M.I.B.S. majors only. Not for major credit in a graduate program in the foreign language department.

**DMSB 703E - Language Training in International Business II (3 Credits)**  
Language: English. A continuation of DMSB 700 for practice in written and oral communication as may be required for students enrolled in the International Master of Business Studies program. Open to M.I.B.S. majors only. Not for major credit in a graduate program in the foreign language department.

**DMSB 703F - Language Training in International Business II (3 Credits)**  
Language: French. A continuation of DMSB 700 for practice in written and oral communication as may be required for students enrolled in the International Master of Business Studies program. Open to M.I.B.S. majors only. Not for major credit in a graduate program in the foreign language department.

**DMSB 703G - Language Training in International Business II (3 Credits)**  
Language: German. A continuation of DMSB 700 for practice in written and oral communication as may be required for students enrolled in the International Master of Business Studies program. Open to M.I.B.S. majors only. Not for major credit in a graduate program in the foreign language department.

**DMSB 703I - Language Training in International Business II (3 Credits)**  
Language: Italian. A continuation of DMSB 700 for practice in written and oral communication as may be required for students enrolled in the International Master of Business Studies program. Open to M.I.B.S. majors only. Not for major credit in a graduate program in the foreign language department.

**DMSB 703J - Language Training in International Business II (3 Credits)**  
Language: Japanese. A continuation of DMSB 700 for practice in written and oral communication as may be required for students enrolled in the International Master of Business Studies program. Open to M.I.B.S. majors only. Not for major credit in a graduate program in the foreign language department.

**DMSB 703K - Language Training in International Business II (3 Credits)**  
Language: Korean. A continuation of DMSB 700 for practice in written and oral communication as may be required for students enrolled in the International Master of Business Studies program. Open to M.I.B.S. majors only. Not for major credit in a graduate program in the foreign language department.

**DMSB 703P - Language Training in International Business II (3 Credits)**  
Language: Portuguese. A continuation of DMSB 700 for practice in written and oral communication as may be required for students enrolled in the International Master of Business Studies program. Open to M.I.B.S. majors only. Not for major credit in a graduate program in the foreign language department.

**DMSB 703R - Language Training in International Business II (3 Credits)**  
Language: Russian. A continuation of DMSB 700 for practice in written and oral communication as may be required for students enrolled in the International Master of Business Studies program. Open to M.I.B.S. majors only. Not for major credit in a graduate program in the foreign language department.

**DMSB 703S - Language Training in International Business II (3 Credits)**  
Language: Spanish. A continuation of DMSB 700 for practice in written and oral communication as may be required for students enrolled in the International Master of Business Studies program. Open to M.I.B.S. majors only. Not for major credit in a graduate program in the foreign language department.

**DMSB 705A - Language Training in International Business III (6 Credits)**  
Language: Arabic. Intensive study of the linguistic and cultural aspects of business to prepare the student for an internship. Not for credit in a graduate program in the foreign language department.

**DMSB 705C - Language Training in International Business III (6 Credits)**  
Language: Chinese. Intensive study of the linguistic and cultural aspects of business to prepare the student for an internship. Not for credit in a graduate program in the foreign language department.

**DMSB 705E - Language Training in International Business III (6 Credits)**  
Language: English. Intensive study of the linguistic and cultural aspects of business to prepare the student for an internship. Not for credit in a graduate program in the foreign language department.

**DMSB 705F - Language Training in International Business III (6 Credits)**  
Language: French. Intensive study of the linguistic and cultural aspects of business to prepare the student for an internship. Not for credit in a graduate program in the foreign language department.

**DMSB 705G - Language Training in International Business III (6 Credits)**  
Language: German. Intensive study of the linguistic and cultural aspects of business to prepare the student for an internship. Not for credit in a graduate program in the foreign language department.

**DMSB 705I - Language Training in International Business III (6 Credits)**  
Language: Italian. Intensive study of the linguistic and cultural aspects of business to prepare the student for an internship. Not for credit in a graduate program in the foreign language department.

**DMSB 705J - Language Training in International Business III (6 Credits)**

Language: Japanese. Intensive study of the linguistic and cultural aspects of business to prepare the student for an internship. Not for credit in a graduate program in the foreign language department.

**DMSB 705K - Language Training in International Business III (6 Credits)**

Language: Korean. Intensive study of the linguistic and cultural aspects of business to prepare the student for an internship. Not for credit in a graduate program in the foreign language department.

**DMSB 705P - Language Training in International Business III (6 Credits)**

Language: Portuguese. Intensive study of the linguistic and cultural aspects of business to prepare the student for an internship. Not for credit in a graduate program in the foreign language department.

**DMSB 705R - Language Training in International Business III (6 Credits)**

Language: Russian. Intensive study of the linguistic and cultural aspects of business to prepare the student for an internship. Not for credit in a graduate program in the foreign language department.

**DMSB 705S - Language Training in International Business III (6 Credits)**

Language: Spanish. Intensive study of the linguistic and cultural aspects of business to prepare the student for an internship. Not for credit in a graduate program in the foreign language department.

**DMSB 706A - Globalization, Culture and the Business Environment (3 Credits)**

Provides a theoretical framework for understanding, and a physical context for, experiencing the historical, sociological, political, economic and cultural aspects of each IMBA residency region and its population within the context of globalization.

**Corequisite:** DMSB 706B.

**DMSB 706B - Internship in International Business (6 Credits)**

Completion of internship acquisition, research, and specific related items.

**Corequisite:** DSMB 706A.

**DMSB 707 - Strategy and Policy in the Global Business Enterprise (3 Credits)**

Overall strategic management of the globally oriented firm, with strong emphasis on industry analysis and strategy formulation in a global environment.

**Prerequisites:** DMSB 702.

**DMSB 708 - Global Business Issues I (6 Credits)**

Issues of doing business in various geographic areas; political, economic, and business factors affecting a region's business climate.

**DMSB 709 - Global Business Issues II (3 Credits)**

Examines in detail the business issues of a specific region.

**Prerequisites:** DMSB 708.

**DMSB 710 - Financial Accounting in the Global Environment (2-3 Credits)**

Basic role of financial accounting in business organizations and in the global economy. Focus is on understanding and using financial statements.

**DMSB 711 - Global Strategic Management I (2-3 Credits)**

Understanding strategic management in a global context.

**DMSB 712 - Quantitative Methods in Business (2-3 Credits)**

Decision analysis techniques taught in the context of making business decisions. Includes basic statistics, hypothesis testing, regression analysis, decision theory, simulation, optimization, and project management.

**DMSB 713 - Global Economics (3 Credits)**

Behavior of consumers and firms, and government antitrust policy, open economy macroeconomic policy, and determinants of trade patterns and trade policy.

**DMSB 714 - Managing the Multinational Enterprise (3 Credits)**

Knowledge and skills for managing multinational corporations, dealing with different cultures, and leading a global workforce. Best practices in global management.

**DMSB 715 - Global Finance (3 Credits)**

Finance concepts and techniques as applied to a global setting. Considers financial markets and corporate financial decision-making.

**DMSB 716 - Global Marketing Management (3 Credits)**

Fundamental marketing concepts and techniques and their application to solve global marketing problems.

**DMSB 717 - Management Accounting in the Global Environment (2-3 Credits)**

Use accounting information to make informed and rational decisions and choices congruent with corporate strategy.

**DMSB 718 - Global Supply Chain and Operations Management (3 Credits)**

The operations function in effectively delivering products and services. Includes operations strategy, process design, quality control, capacity planning, and supply chain management.

**DMSB 719 - Information Systems (2 Credits)**

Information systems and technologies and their impact on business. Includes use of technology for competitive advantage, E-business, and the role of information technology in organizational transformation.

**DMSB 720 - International Organizational Behavior (2 Credits)**

Managing people in multicultural organizations. Includes power and influence, conflicts and cooperation, and team dynamics.

**Prerequisites:** DMSB 706B.

**DMSB 721 - Global Entrepreneurship (1.5 Credits)**

Role of entrepreneurship in global economy, practical model of entrepreneurship, and application of these concepts to a potential venture.

**Prerequisites:** DMSB 706B.

**DMSB 722 - Globalization and Corporate Responsibility (1.5 Credits)**

Evolving forces behind globalization, with primary emphasis on corporate responsibility.

**DMSB 723 - Leading Teams and Organizations (2-3 Credits)**

Provides an in-depth understanding of principles of leadership and organizational behavior. Topics include: leadership style/self awareness, worker motivation and attitudes. Individual decision-making, team processes, conflict management organizational culture, and change management.

**DMSB 725 - Global Business Issues (3 Credits)**

Current issues related to the globalization of markets. Restricted to Executive I.M.B.A. students.

**DMSB 726 - Global Business Leadership (1 Credit)**

Team structures in organizations, including the role of leadership in strategically guiding the organization toward team success. Restricted to Executive I.M.B.A. students.

**DMSB 727 - Chinese Business Issues (1 Credit)**

Issues of doing business in China: business, economic, and political factors affecting the business climate.

**DMSB 728 - Indian Business Issues (1 Credit)**

Issues of doing business in India: business, economic, and political factors affecting the business climate.

**DMSB 729 - Japanese Business Issues (1 Credit)**

Issues of doing business in Japan: business, economic, and political factors affecting the business climate.

**DMSB 730 - African Business Issues (1 Credit)**

Issues of doing business in Africa: business, economic, and political factors affecting the business climate.

**DMSB 731 - Latin American Business Issues (1 Credit)**

Issues of doing business in Latin America: business, economic, and political factors affecting the business climate.

**DMSB 732 - Competition and Change in North America (1 Credit)**

Issues of doing business in North America: business, economic, and political factors affecting the business climate.

**DMSB 733 - Global Business Strategy Simulations (2 Credits)**

Examines the impact of strategic decisions on firm performance through realistic global industry simulations.

**DMSB 734 - International Tax Planning (2 Credits)**

Examines the tax issues facing international managers, including the avoidance of double taxation, benefits of incentives, outsourcing, corporate inversions, and transfer pricing.

**DMSB 735 - Western European Business Issues (1 Credit)**

Issues of doing business in Western Europe: business, economic, and political factors affecting the business climate.

**DMSB 736 - Central and Eastern European Business Issues (1 Credit)**

Issues of doing business in Central and Eastern Europe: business, economic, and political factors affecting the business climate.

**DMSB 740 - Management of Human Capital (2 Credits)**

Provides the general manager with an overview of theory, research, and practice in the formal management of an organization's human capital. Topics include: strategic alignment of human capital talent acquisition (planning, recruiting, interviewing), effective compensation/incentive design, performance management, and global talent management issues.

**DMSB 741 - Comparative Institutional Systems (3 Credits)**

Introduced conceptual perspectives for understanding dramatic economic events in the global economy; a comparative view of national institution-based systems.

**Cross-listed course:** IBUS 707

**DMSB 750 - Capstone Experience (3 Credits)**

Capstone experience course for the IMBA and AMBA programs will develop integration and application of prior functional coursework (e.g., marketing finance operations etc.) to address simulated but realistic strategic business issues. Working within cross functional teams students will also further refine critical leadership and interpersonal skills.

**DMSB 798 - Field Consulting Program (6 Credits)**

Management decision making in the corporate environment. Projects assigned on a group basis with emphasis on teamwork, oral and written communication skills in business operations, planning, problem solving, and research.

## Early Childhood Educ (EDEC)

**EDEC 510 - Parent/Family Dynamics in Early Childhood Education (3 Credits)**

Principles, practices, and content of family dynamics, including practicum/service learning.

**Graduation with Leadership Distinction:** GLD: Community Service

**EDEC 540 - The Young Child: Behavior and Development in Early Childhood (3 Credits)**

Service-learning and seminar experiences addressing intellectual, physical, social, and emotional development, prenatal through grade three, within an ecological context. Child's critical thinking, creative expression, and diagnosis/assessment emphasized.

**EDEC 546 - Education of Young Children: An Ecological Approach (3 Credits)**

An ecological study with emphasis on home-school relations, parent involvement, and community resources. Multicultural perspectives and needs of exceptional children addressed.

**Corequisite:** EDEC 469.

**EDEC 547 - Field Problems: Teaching Mathematics Using Manipulative Materials, Grades K-3 (3 Credits)**

Instructional approaches and materials for teaching elementary school mathematics, grades K-3.

**EDEC 570 - Internship in Environments for Teaching and Learning (3 Credits)**

Internship for practice in classrooms appropriate to early childhood education related to curriculum design and assessment. Admission to the professional program in early childhood education.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Internships

**EDEC 591 - Seminar on Teaching in Early Childhood (3 Credits)**

Exploration of the principles and theories about teaching and learning as they apply to early childhood education in the context of schools in democratic societies.

**Prerequisites:** admission to internship in early childhood education.

**Corequisite:** EDTE 590A, EDTE 590B, and EDTE 590C.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Internships, GLD: Research

**EDEC 608 - Parent Involvement in Early Childhood Education (3 Credits)**

Analysis of programs and practices for involving parents in early childhood educational settings. Emphasizes objectives, methods, techniques, and materials for program development. Community resources for supporting programs for children in various instructional settings.

**EDEC 690 - Independent Study (1-3 Credits)**



**EDEC 712 - Practicum in Parent Involvement in Early Childhood Education (3 Credits)**

School- and home-based experience with parents. Emphasis upon home-school relationships and their effects upon the young child's development and learning. Participation with advisory groups, parent activities in the classroom, home visits, and parent-teacher communication. Weekly seminar sessions.

**Prerequisites:** EDEC 540 and EDEC 608 or EDEC 610.

**EDEC 740 - The Young Child: Applying Theory and Research (3 Credits)**

Analysis and discussion of theory and research related to the education of young children. Intellectual, social, emotional, and physical development of infants, toddlers, and young children will be examined. Special emphasis on implication for developing.

**Prerequisites:** EDEC 540 and EDPY 705.

**EDEC 742 - Advanced Study of Early Childhood Curricula and Program Models (3 Credits)**

An analysis of early childhood program models and curricula with theoretical orientation, related research, societal needs, and the student's philosophy of education.

**Prerequisites:** EDEC 540, EDEC 542, EDEC 544.

**EDEC 744 - Advanced Study of Language Development and Communication Skills in Early Childhood Education (3 Credits)**

Provides classroom teachers with an overview of the development of language and communication skills in children, birth through eight.

**Prerequisites:** EDEC 544 or equivalent.

**EDEC 745 - Emergent Literacy (3 Credits)**

Theories of emergent literacy and implications for literacy learning and instruction.

**Prerequisites:** EDEC 744.

**EDEC 750 - Play Theory and Early Learning (3 Credits)**

Theory, research, and practice related to the play of young children in various settings.

**EDEC 754 - Studies and Internships I In Teaching Social Studies -Early Childhood (3 Credits)**

Planning, designing and implementing a developmentally appropriate socio-cultural curriculum for young children, preschool through grade four.

**Prerequisites:** Admission to the MAT program.

**EDEC 755 - Studies and Internship in Teaching Science (3 Credits)**

The study and practice of science education for preschool and primary students focusing on appropriate content, goals, and methods.

**Prerequisites:** Admission to the MAT program.

**EDEC 769A - Internship II: Early Childhood Curriculum and Assessment (4 Credits)**

Internship for practice in prekindergarten through primary grade classrooms related to curriculum design and assessment, leading to initial certification.

**Prerequisites:** Admission to MAT program and successful completion of first semester internship.

**Corequisite:** EDEC 769B, EDEC 769C, and EDEC 770.

**EDEC 769B - Internship II: Early Childhood Teaching (4 Credits)**

Internship for practice in prekindergarten through primary grade classrooms related to interactive teaching, leading to initial certification.

**Prerequisites:** Admission to MAT program and successful completion of first semester internship.

**Corequisite:** EDEC 769A, EDEC 769C, and EDEC 770.

**EDEC 769C - Internship II: Early Childhood Professional Roles (4 Credits)**

Internship for practice in school settings related to professional development, leading to initial certification.

**Prerequisites:** Admission to MAT program and successful completion of first semester internship.

**Corequisite:** EDEC 769A, EDEC 769B, and EDEC 770.

**EDEC 770 - Early Childhood Internship Seminar (3 Credits)**

Seminar for students seeking initial certification. Consideration of principles and theories of teaching and learning and strategies to translate theory into personal classroom practice.

**Prerequisites:** Admission to MAT program and successful completion of first semester internship.

**Corequisite:** EDEC 769A, EDEC 769B, and EDEC 769C.

**EDEC 794 - Leadership, Advocacy and Collaboration in Early Childhood Settings (3 Credits)**

An overview of the purposes, organizational structure, sponsorship, funding sources, and advocacy for care and education programs and the characteristics, roles, and responsibilities of leaders in the field.

**EDEC 795 - Technology in Early Childhood Education (3 Credits)**

Strategies for integrating technology in early childhood education.

**Prerequisites:** EDTE 631.

**EDEC 797 - Seminar in Early Childhood Education (3 Credits)**

Synthesis of development, curriculum, cognition, and related issues in early childhood education.

**Prerequisites:** degree candidacy in early childhood education and 21 graduate hours completed.

**EDEC 810 - Special Topics in Early Childhood Education (3 Credits)**

Special and specific analyses of crucial issues in the field as they exist and emerge in the future. Provides an opportunity for students to do in-depth study of definitive areas of concern.

**EDEC 811 - Current Trends and Issues in Early Childhood Education (3 Credits)**

Analysis of innovations in the field within a historical perspective.

**EDEC 812 - Advanced Internship in Early Childhood Education (3-6 Credits)**

Supervised internship and related seminar participation in an approved setting.

**Prerequisites:** Admission to doctoral program.

**EDEC 813 - Program Development and Implementation in Early Childhood Education (3 Credits)**

Analysis of and participation in the development of program content, policy, and advocacy.

**Prerequisites:** EDEC 740, EDEC 742, EDEC 744, and admission to doctoral candidacy.

**EDEC 814 - Analysis of Current Research in Early Childhood Education (3 Credits)**

A critical evaluation of reported research in early childhood with special emphasis on recent and ongoing research programs.

**Prerequisites:** EDEC 740, EDEC 742, EDEC 744, and admission to doctoral candidacy.

**EDEC 815 - Advanced Study of Early Childhood Curricula (3 Credits)**

An analysis of early childhood curriculum alternatives that focus on theoretical orientation, related research, societal needs, and the student's philosophy of education.

**Prerequisites:** EDEC 740, EDEC 742, EDEC 744, and admission to doctoral candidacy.

**EDEC 890 - Independent Study (3 Credits)**

## Economics (ECON)

**ECON 500 - Urban Economics (3 Credits)**

An analysis of economic forces affecting urbanization and the economic processes influencing urban form and structure. Spatial concepts are considered in addition to traditional micro-economic and macro-economic concepts. Topic coverage includes: the economic origin of cities; urban functions and the urban economic base, land-use structure and urban form, and urban efficiency.

**Prerequisites:** ECON 221 and ECON 222, or ECON 224.

**ECON 503 - International Trade Economics (3 Credits)**

Theory of international specialization, commercial policy, customs unions, and the effects of trade liberalization and protectionism; economic growth and multinational enterprises.

**Prerequisites:** ECON 321.

**Graduation with Leadership Distinction:** GLD: Global Learning

**ECON 504 - International Monetary Economics (3 Credits)**

Exchange rate and balance of payments determination; purchasing-power parity; optimum currency areas, absorption, elasticity, monetary approaches, spot- and forward-exchange markets.

**Prerequisites:** ECON 322.

**Graduation with Leadership Distinction:** GLD: Global Learning

**ECON 505 - International Development Economics (3 Credits)**

Economic theories of growth in developing countries. Use of factor resources; role of social and economic institutions; use of financial trade policies for growth.

**Prerequisites:** ECON 221 and ECON 222, or ECON 224.

**Graduation with Leadership Distinction:** GLD: Global Learning

**ECON 506 - Labor Economics and Labor Markets (3 Credits)**

Economics of labor demand, labor supply, wage determination in competitive markets, migration, discrimination, unemployment, and labor unions. Theoretical models and empirical knowledge will be considered.

**Prerequisites:** ECON 221 and ECON 222, or ECON 224; ECON 321.

**ECON 507 - Comparative Economic Systems (3 Credits)**

An analysis of the organization and operation of the world's major economic systems.

**Prerequisites:** ECON 221 and ECON 222, or ECON 224.

**Graduation with Leadership Distinction:** GLD: Global Learning

**ECON 508 - Law and Economics (3 Credits)**

Economic analysis and interpretation of the law. The economic effect of current law and optimal design of law to meet social objectives.

**Prerequisites:** ECON 221 and ECON 222, or ECON 224.

**ECON 509 - Economics of Sustainable Development (3 Credits)**

Exploration of the basic theory and practice of sustainable economic development. Topics include: environmental legislation, global agreements, sustainable development indicators, and economic strategies and methods to promote environmentally sound development.

**Prerequisites:** C or better in the following ECON 221 and ECON 222; or ECON 224; MATH 122.

**Graduation with Leadership Distinction:** GLD: Community Service

**ECON 510 - Experimental Economics (3 Credits)**

Exploration of the basic theory and techniques of experimental economics. Topics include: basic game theory, experimental design, and elements of behavioral economic thought.

**Prerequisites:** C or higher in ECON 321.

**ECON 511 - Senior Seminar in Economics (3 Credits)**

Philosophy and methodology of economics, perspectives on theory and empiricism, economic policy; individualized guided research.

**Prerequisites:** ECON 321, ECON 322, and ECON 436 with grade of C or higher.

**ECON 514 - The Economics of Terrorism (3 Credits)**

Focuses on the following aspects of terrorism: (1) its causes/determinants (historical, social, cultural, economic, political, and religious determinants); (2) the organizational and funding structure of terrorist groups; (3) the tactics and weapons of terrorist groups; (4) mobilization and recruitment within terror networks; and (5) counterterrorism methods. Restricted to: Business Majors and Economics Arts and Sciences Majors.

**Prerequisites:** C or better in ECON 321.

**ECON 515 - Industrial Organization (3 Credits)**

This course uses the tools of microeconomics and game theory to examine how firms compete and competition's impact on industry performance. Topics include: price discrimination, product differentiation, and oligopoly behavior.

**Prerequisites:** ECON 321.

**ECON 516 - Political Economy (3 Credits)**

This course covers fundamental models of collective decision making, studies their empirical relevance, and considers interactions between the economy and politics.

**Prerequisites:** C or better in ECON 221 and ECON 222 or C or better in ECON 224.

**ECON 523 - Introduction to Mathematical Economics (3 Credits)**

Mathematical formulation of economic theories; the use of mathematics in the development and demonstration of economic relationships.

**Prerequisites:** ECON 221 and ECON 222, or ECON 224; MATH 122, MATH 141, or the equivalent.

**ECON 524 - Essentials of Economics (3 Credits)**

A course designed to acquaint the student with the principles of operation of the American economic system. A survey course for social studies teachers in secondary schools.

**Prerequisites:** ECON 221 and ECON 222, or ECON 224.

**ECON 526 - Managerial Economics (3 Credits)**

A study of the application of the economic theory of profits, competition, demand, and costs to analysis of problems arising in the firm and in decision making. Price policies, forecasting, and investment decisions are among the topics considered.

**Prerequisites:** ECON 221 and ECON 222, or ECON 224.

**ECON 530 - The Economics of Education (3 Credits)**

Investment in human capital; the economic value of schooling; internal efficiency of schools; faculty compensation; equity and efficiency of school finance systems; financing higher education.

**Prerequisites:** ECON 221 and ECON 222, or ECON 224.

**ECON 531 - Health Economics (3 Credits)**

Applications of economic analysis to health care. Structure and behavior of health-care markets. Description of health care policy issues.

**Prerequisites:** ECON 221 and ECON 222, or ECON 224.

**ECON 548 - Environmental Economics (3 Credits)**

An analysis of the economic aspects of environmental decay, pollution control, and natural resource use. Analysis of the ability of the market system to allocate resources efficiently when economic activity is accompanied by environmental damage. Discussion of alternative public policy approaches to pollution control and natural resource conservation.

**Prerequisites:** ECON 221 and ECON 222, or ECON 224.

**Cross-listed course:** ENVR 548

**ECON 555 - Game Theory in Economics (3 Credits)**

Game theory as used to understand decision making in business, economics, politics and other real-world environments. Topics covered include: basic terminology; strategic, extensive, and combinatorial models; and equilibrium strategy.

**Prerequisites:** ECON 321 or MATH 141 and STAT 201 or C or higher in STAT 206.

**ECON 562 - Public Finance (3 Credits)**

Theory and practice of taxation: public revenue, expenditure, and debt.

**Prerequisites:** C or higher in ECON 321.

**ECON 589 - Topics in Economics (1-3 Credits)**

Individual topics to be announced with title.

**Prerequisites:** ECON 221 and ECON 222, or ECON 224.

**ECON 594 - Introduction to Econometrics (3 Credits)**

Statistical and economic tools applied to analysis of business and economic problems with the aid of computers.

**Prerequisites:** ECON 221 and ECON 222, or ECON 224; MGSC 291 or STAT 201, MATH 122 or MATH 141.

**ECON 621 - Survey of Contemporary Economic Theory (3 Credits)**

Neo-classical value and distribution theory combined with income and employment theory.

**Prerequisites:** ECON 221 and ECON 222, or ECON 224.

**ECON 690 - Quantitative Foundations for Business and Economics I (3 Credits)**

Calculus and classical optimization methods applied to problems in business and economic analysis; matrices, derivatives, and integrals in the analysis of both univariate and multivariate business and economic models.

**Prerequisites:** ECON 221 and ECON 222, or ECON 224.

**ECON 691 - Quantitative Foundations for Business and Economics II (3 Credits)**

Statistics and probability theory applied to problems of business and economic analysis.

**Prerequisites:** ECON 221 and ECON 222, or ECON 224; MGSC 690 or ECON 690.

**ECON 692 - Quantitative Methods I (3 Credits)**

Probability and statistics necessary for graduate study in economics and business administration; estimation, hypothesis testing, regression, analysis of variance, and nonparametric methods.

**Prerequisites:** ECON 221 and ECON 222, or ECON 224.

**ECON 694 - Quantitative Methods II (3 Credits)**

A study of decision models useful in business administration. Topics covered include linear programming, sensitivity analysis and duality, network models, integer programming, determinate and stochastic dynamic programming, inventory, and queues.

**Prerequisites:** ECON 221 and ECON 222, or ECON 224; ECON 692, mathematics and computer portion of Fundamental Business Skills or equivalent.

**ECON 705 - Economic Growth and Development (3 Credits)**

Overall view of problems of economic development, including its history and relationship to the modern world. Brief consideration is given to such noneconomic factors as political, sociological, and cultural environments. Basic theories of growth are presented and critically evaluated.

**ECON 711 - Applied Microeconomics (3 Credits)**

Theory of demand, production, cost, pricing, distribution, and capital. Particular emphasis on applications of the theory to various problems faced by the firm.

**Prerequisites:** ECON 621.

**ECON 712 - Applied Macroeconomics (3 Credits)**

The modern theory of income determination. Inflation, unemployment, and interest rates in an open economy setting. Emphasis on economic policy.

**Prerequisites:** ECON 621.

**ECON 719 - Macroeconomics Analysis and International Economics (3 Credits)**

The modern theory of national employment, output, and the price level. Monetary and fiscal policy. International trade, exchange rates, and international capital markets.

**ECON 720 - Managerial Economics (3 Credits)**

The application of microeconomic concepts to managerial decisions. The concepts include demand, cost, market structure, pricing, profitability, and strategic behavior.

**ECON 728 - Applied Microeconomics (3 Credits)**

Theory of demand, production, cost, pricing, distribution, and capital. Particular emphasis on applications of the theory to various problems faced by the firm.

**Prerequisites:** ECON 621

**ECON 736 - Applied Econometrics (3 Credits)**

The theory and application of linear regression analysis to economic problems. The course will present both finite-sample and asymptotic properties of regression estimators, and address problems that arise in using regression methods with economic data.

**Prerequisite or Corequisite:** STAT 201; and MATH 122 or MATH 141.

**ECON 740 - Applied Economic Forecasting (3 Credits)**

Examination of a variety of techniques that are used for forecasting and policy simulation purposes. Development of skills that have applications in business, government, and economic research.

**Prerequisites:** ECON 692 or equivalent.

**ECON 760 - International Trade, Theory and Policy (3 Credits)**

Classical and modern models of international trade, evaluation of tariffs and quotas, advantages and disadvantages of international trade agreements.

**Prerequisites:** ECON 711 or ECON 720, with exceptions made for anyone who has taken an undergraduate Intermediate Microeconomics class ECON 321 at USC in the last five years.

**ECON 784 - Health Economics (3 Credits)**

A critical introduction to the application of economic analysis to problems in the health care field. Selective surveys of the related scientific literature will be covered.

**ECON 794 - Programming Methods (3 Credits)**

Mathematical programming techniques which are useful in business and economics. Topics include: solution techniques and applications of linear programming, duality, theory, parametric programming, the decomposition problem, integer programming, dynamic programming, Lagrange multipliers, Kuhn-Tucker theory, and an introduction to control theory.

**Prerequisites:** ECON 694 or equivalent.

**ECON 799 - Thesis Preparation (1-9 Credits)****ECON 811 - Microeconomic Theory I (3 Credits)**

The modern theory of consumer behavior, production, the firm, and market structure.

**ECON 812 - Microeconomic Theory II (3 Credits)**

Advanced topics in microeconomics including general equilibrium theory and welfare economics.

**Prerequisites:** ECON 786.

**ECON 814 - Game Theory (3 Credits)**

This course teaches the fundamentals of game theory and strategic interaction. Concepts of normal and extensive form games, Nash Equilibrium, and subgame perfect equilibrium are defined and used to show how outcomes are achieved between two parties.

**ECON 815 - Topics in Microeconomics (3 Credits)**

Examination of new theories and applications in microeconomics. Analysis of advances in theory and the application of theory to new problems of consumer behaviour, industrial organization, and public economics.

**ECON 816 - Mathematical Economics (3 Credits)**

This course is to acquaint students with the mathematical methods currently being used in micro- and macroeconomic theory. Topics covered are the use in economics of point set topology, nonlinear programming, differential equations, calculus of variations, and control theory.

**Prerequisites:** ECON 523.

**ECON 817 - History of Economic Thought (3 Credits)**

An analysis of the development of economic theory with special emphasis on the evolution of alternative methodologies.

**ECON 818 - Welfare Economics (3 Credits)**

An endeavor to formulate propositions by which alternative economic situations open to society may be ranked on the scale of better or worse.

**Prerequisites:** ECON 788.

**ECON 821 - Macroeconomic Theory I (3 Credits)**

The modern theories of income determination, inflation, unemployment, and interest rates. Theories of consumption, investment, government expenditure, and taxation are presented.

**ECON 822 - Macroeconomic Theory II (3 Credits)**

Recent developments in macro-econometrics, dynamic models, and related topics.

**Prerequisites:** ECON 785 or the equivalent.

**ECON 824 - Monetary Theory (3 Credits)**

Monetary theory, monetary policy, and monetary reform. Theory of central banking and monetary equilibrium, and related topics.

**Prerequisites:** course in money and banking and intermediate economic theory.

**ECON 825 - Money and Banking (3 Credits)**

An in-depth study of the operation and economic significance of the monetary system (money, commercial banks, and the central bank) and monetary policy. Emphasis is on theory and empirical hypothesis testing as related to above topics.

**ECON 831 - Econometrics and Regression I (3 Credits)**

A treatment of single equation estimating techniques for the simple linear model, various nonlinear models, and the general linear model.

**Prerequisites:** ECON 792 or equivalent.

**ECON 832 - Econometrics and Regression II (3 Credits)**

Topics in generalized least squares, autocorrelation, distributed lag models, principal components, identification, and simultaneous estimating techniques.

**Prerequisites:** ECON 831.

**ECON 833 - Computational Methods for Economists (3 Credits)**

Theory and application of computational methods used to solve and estimate economic models. Solutions to economic models using numerical techniques and high-performance computing. Estimation of empirical models using custom built functions and numerical optimization.

**ECON 840 - Economic Growth (3 Credits)**

Advanced theory of economic growth. Mathematical models of growth, including the neoclassical model, endogenous growth models, and models of imperfect competition and growth, will be examined. Techniques of dynamic optimization are used to solve models. Empirical methods will be applied to models of economic growth.

**ECON 841 - Economic Development (3 Credits)**

Application of economic principles to regional analysis and planning. Geographic areas covered range from cities and counties to major regions of the nation. Subject areas include economic measurement, analysis, and development planning.

**ECON 843 - Economic History (3 Credits)**

Examination and interpretation of the record of events and trends in history using the concepts and tools of economic theory. Analysis of the effect of economic events on the course of world history.

**ECON 848 - Environmental Economics (3 Credits)**

Fundamentals of environmental and resource economics. Including concepts of pollution, instrument choice, management of renewable and non-renewable resources, and valuation techniques for environmental public goods.

**ECON 850 - Health Economics (3 Credits)**

A critical introduction to the application of economic analysis to problems in the health care field. Selective surveys of the related scientific literature will be covered.

**ECON 860 - International Trade Theory (3 Credits)**

Theory of international values, comparative advantage, and the gains from trade; theory of commercial policy, tariff structure, and welfare and trade.

**Prerequisites:** ECON 621.

**ECON 862 - International Monetary Economics (3 Credits)**

Theories of exchange rate and balance of payments determination (spot and forward exchange markets, interest rate arbitrage, purchasing power parity, and monetary approaches); adjustments under fixed and flexible exchange rates are analyzed.

**ECON 865 - Industrial Organization (3 Credits)**

Examination of industrial pricing, output, and investment practices in relation to the theory of the firm. Consideration of public aspects of these practices.

**ECON 870 - Labor Economics I (3 Credits)**

Topics studied include wage theory; the processes of wage determination; the impact of unions and collective bargaining on wage levels, prices, employment, and income distribution; bargaining theory and union-management relations; the union as an economic institution.

**ECON 872 - Labor Economics II (3 Credits)**

A descriptive and analytic study of manpower as an economic resource in the United States.

**ECON 875 - Economics of Education (3 Credits)**

A survey of the contribution of economics to educational issues, including the value of educational investments, effect of education on economic growth, input-output analysis, and economics of educational finance.

**ECON 880 - Public Finance I (3 Credits)**

A general survey of public finance, including public expenditures; the structure, incidence, and effects of taxes; public goods; and fiscal federalism.

**ECON 882 - Public Finance II (3 Credits)**

An analysis of budgets and budget policy; tax incidence and effects; debt and debt management.

**ECON 885 - Urban Economics (3 Credits)**

An analysis of economic forces affecting urbanization and the economic processes influencing urban form and structure. Spatial concepts are considered in addition to the traditional microeconomic and macroeconomic concepts.

**ECON 886 - Location Theory (3 Credits)**

Spatial and economic structures of regions and regional economic development. Topical review of partial and general equilibrium models of land use, regional economic growth; income determination at a regional level (regional accounts and input-output models); regional policy alternatives and their efficiency.

**ECON 891 - Sampling Techniques (3 Credits)**

Statistical designs and techniques for survey investigations. Mathematical development of sampling systems; sampling units; sample size; estimation; costs; non-sampling problems. Methods of obtaining and reporting information.

**Prerequisites:** ECON 692 or equivalent.

**ECON 892 - Third-Year Seminar 1 (2 Credits)**

Research methods in Economics. The design and execution of a research paper in Economics. Preparation for writing a dissertation in Economics.

**ECON 893 - Third-Year Seminar 2 (1 Credit)**

Research methods in Economics. The design and execution of a research paper in Economics. Preparation for writing a dissertation in Economics.

**ECON 894 - Advanced Topics in Management Science (3 Credits)**

Topics will be selected from: nonlinear programming, stochastic programming, integer programming, spectral analysis, decision theory, Markov processes, Box-Jenkins methods.

**ECON 895 - Econometrics and Regression II (3 Credits)**

Topics in generalized least squares, autocorrelation, distributed lag models, principal components, identification, and simultaneous estimating techniques.

**Prerequisites:** ECON 795.

**ECON 898 - Special Topics in Economics (3 Credits)**

Selected readings, research and trends in economics. May be repeated up to three times as content varies by title.

**ECON 899 - Dissertation Preparation (1-12 Credits)**

## Educ Foundations & Inq (EDFI)

**EDFI 592 - Historical Foundations of American Educational Thought (3 Credits)**

A survey of the history, philosophy, administration, and legal bases of American education.

**EDFI 643 - Southern Educational History (3 Credits)**

Development of educational institutions in Southern society with special attention given to South Carolina.

**EDFI 690 - Independent Study (1-3 Credits)****EDFI 722 - Contemporary Education in Europe (3 Credits)**

A comparison of the impact of postwar forces on the educational systems of selected European nations. Analysis of current trends, movements, and problems in all levels of education. Examination of the educational purposes, systems, techniques, and facilities with implications for the future development of industrialized societies.

**EDFI 730 - Qualitative Epistemologies, Paradigms, & Theories (3 Credits)**

Foundations of qualitative research including historical, philosophical, and theoretical perspectives. Examination of different qualitative approaches and associated methodological issues.

**EDFI 731 - Qualitative Inquiry (3 Credits)**

Qualitative research methods including naturalistic inquiry, participant observation, interviewing, focus groups, and document analysis.

**EDFI 740 - Qualitative Inquiry (3 Credits)**

Qualitative research methods including naturalistic inquiry, participant observation, interviewing, focus groups, and document analysis.

**EDFI 741 - International and Comparative Education (3 Credits)**

Introduction to international education and the comparative method in the study of educational systems around the world. Provides students with an overview of comparative and international education theory, practice, and research methodology.

**EDFI 743 - The History of Education in the United States (3 Credits)**

The history of education in the United States from the colonial period through the contemporary moment. Placing the history of education in a larger American economic, social, political, and cultural context, students consider the development, purposes, effects, and evolution of public and private schools in the United States at the elementary, middle and secondary levels during this critical period in United States history and education.

**EDFI 744 - Philosophy and Education (3 Credits)**

The functional considerations governing educational theories and practices.

**EDFI 747 - Critical Race Theory and Education (3 Credits)**

An introduction to tenets and methodology in Critical Race Theory. The study of race and racism as the primary lens of analysis in educational, social, and political issues.

**EDFI 749 - The School in Modern Society (3 Credits)**

Basic concepts of the relation of the school to the social order: an analysis of the essential features of the changing social context within which American educational policy and practice now operate. The educational implications of recent social change in American life and of the emergence of a new world order.

**EDFI 799 - Thesis Preparation (1-9 Credits)****EDFI 832 - Educational Biography (3 Credits)**

Examination of biography as a form of educational research and scholarship.

**EDFI 833 - Narrative Inquiry (3 Credits)**

Exploration of the various forms of narrative inquiry as a distinct genre of qualitative research.

**EDFI 834 - Participatory Action Research (3 Credits)**

Theoretical, methodological, and pedagogical orientations to participatory action research.

**EDFI 836 - Ethnography and Education (3 Credits)**

Historical, methodological, and theoretical orientations to ethnographic research.

**Prerequisites:** EDFI 731 or equivalent.

**EDFI 837 - Qualitative Case Study (3 Credits)**

The study and practice of qualitative case study methods. Topics include explanatory, descriptive, and exploratory approaches, single case, multi-case, and multi-site design strategies.

**Prerequisites:** EDFI 731.

**EDFI 843 - The School and the Social Order: the United States II (3 Credits)**

The impact of education on the social order in the United States continued—1877 to the present. Research assignments will involve analysis and interpretation of primary source materials of 19th- and 20th-century thought and practice in South Carolina.

**Prerequisites:** EDFI 743 or equivalent.

**EDFI 845 - Seminar of Advanced Students in Foundations of Education (3-9 Credits)**

Individual topics selected by student application and instructor acceptance. May be repeated for up to 9 hours as topics vary.

**EDFI 847 - Modern Philosophies of Education (3 Credits)**

Critical comparison of present-day schools of thought in the nature, objectives, and functions of American education.

**Prerequisites:** EDFI 744 or equivalent.

**Cross-listed course:** PHIL 847

**EDFI 857 - Advanced Critical Race Theory and Education (3 Credits)**

An advanced study of how Critical Race Theory is applied by researchers to investigate issues of racial justice. The study of race and racism is the primary lens of analysis in understanding disparities in educational, political, social and economic outcomes.

**Prerequisites:** EDFI 747.

**Cross-listed course:** EDTE 857

**EDFI 868 - History of Student Activism (3 Credits)**

An overview of the role of student activists who engaged in deliberate protest to demonstrate their dissatisfaction with the American social order and an examination of the rationale behind student rebellion and the role of high schools and colleges in facilitating student activism.

**EDFI 879 - Equity and Justice Internship (1-3 Credits)**

Internship dedicated to equity and justice in educational contexts.

**Prerequisites:** EDFI 749.

**EDFI 890 - Independent Study (3 Credits)****EDFI 899 - Dissertation Preparation (1-12 Credits)**

## Education (EDUC)

**EDUC 610 - Case Study in Classroom Management (3 Credits)**

Case study in the clinical application of pedagogy and methods related to classroom management, including relational, procedural and instructional aspects of a classroom management approach.

**EDUC 632 - Field Problems in Education I (1-3 Credits)**

Selected educational problems will be identified and explored, and probable solutions developed. Emphasis will be on providing practicing school personnel an opportunity to work cooperatively, under supervision, toward solutions to those problems which are of immediate concern to them. Activities will include seminars, review of literature, observations, case studies, materials development, and other applicable approaches. Emphasis will be placed on the development of a comprehensive proposal designed to alleviate or solve the problems identified.

**EDUC 633 - Field Problems in Education II (1-3 Credits)**

Selected educational problems will be identified and explored, and probable solutions developed. Emphasis will be on providing practicing school personnel an opportunity to work cooperatively, under supervision, toward solutions to those problems which are of immediate concern to them. Activities will include seminars, review of literature, observations, case studies, materials development, and other applicable approaches. Emphasis will be placed on the development of a comprehensive proposal designed to alleviate or solve the problems identified.

**EDUC 634 - Field Problems in Education III (1-3 Credits)**

Selected educational problems will be identified and explored, and probable solutions developed. Emphasis will be on providing practicing school personnel an opportunity to work cooperatively, under supervision, toward solutions to those problems which are of immediate concern to them. Activities will include seminars, review of literature, observations, case studies, materials development, and other applicable approaches. Emphasis will be placed on the development of a comprehensive proposal designed to alleviate or solve the problems identified.

**EDUC 635 - Field Problems in Education IV (1-3 Credits)**

Selected educational problems will be identified and explored, and probable solutions developed. Emphasis will be on providing practicing school personnel an opportunity to work cooperatively, under supervision, toward solutions to those problems which are of immediate concern to them. Activities will include seminars, review of literature, observations, case studies, materials development, and other applicable approaches. Emphasis will be placed on the development of a comprehensive proposal designed to alleviate or solve the problems identified.

**EDUC 635A - T: Common Core: Math Standards (3 Credits)****EDUC 654 - Assessment of Reading (3 Credits)****EDUC 738 - Supervision of Student Teaching (3 Credits)**

The theoretical and functional foundations with which an early childhood, elementary, or secondary school teacher should be familiar when supervising a student teacher in a clinical situation.

**Prerequisites:** classroom experience.

## Educational Admin (EDAD)

**EDAD 690 - Independent Study (1-3 Credits)****EDAD 718 - School and Community Relationships (3 Credits)**

Development of constructive relationships between schools and the communities they serve. Emphasis on research findings in communication.

**EDAD 719 - Interpersonal and Group Relations in Educational Administration (3 Credits)**

Emphasis on modern understanding of interpersonal and group relations derived from current research in educational administration.

**EDAD 795A - Practicum in School Administration (3 Credits)**

An internship in schools at the appropriate level for certification. Will include field experience seminars. Should be taken as last course in degree program.

**EDAD 795B - Practicum in School Administration (3 Credits)**

An internship in schools at the appropriate level for certification. Will include field experience seminars. Should be taken as last course in degree program.

**EDAD 795C - Practicum in School Administration (3 Credits)**

An internship in schools at the appropriate level for certification. Will include field experience seminars. Should be taken as last course in degree program.

**EDAD 826 - Professional Negotiation in Elementary and Secondary Schools (3 Credits)**

An advanced course designed for administrators and prospective administrators. Content for the course ranges from theoretical bases for negotiation through application of specific skills in the negotiating process. Also includes a survey of legislative enactments in various selected states.

**EDAD 890 - Independent Study (3 Credits)****EDAD 896 - Practicum in Educational Administration (3 Credits)**

Open primarily to students seeking district-level administrative experiences.

## Educational Psychology (EDPY)

**EDPY 644 - Free-Choice Learning and Informal Learning Environments (3 Credits)**

Examines free-choice (or informal) learning and the characteristics of settings and activities outside of formal schooling that effectively promote learning and development.

**EDPY 690 - Independent Study (3-15 Credits)****EDPY 704 - The Field of Educational Psychology (3 Credits)**

Introduction to current issues in educational psychology. Topics include, but are not limited to: learning and teaching, cognition, developmental theories, the brain, information processing, motivation, individual differences, and the social contexts of learning.

**EDPY 705 - Human Growth and Development (3 Credits)**

Overview of the contributions of the biological and social sciences to an understanding of the mental, emotional, social, and physical development from infancy through adulthood. Study of behavior problems.

**EDPY 706 - Growth and Development: Childhood (3 Credits)**

Presentation of theories and principles of human development that are particularly relevant to teaching. Application of such theories and principles to learning situations suitable to various age and grade levels.

**EDPY 707 - Growth and Development: Middle Childhood and Adolescence (3 Credits)**

A review of the literature concerning adolescence; nine years through teens. Emphasis on application to the educational setting.

**EDPY 708 - Growth and Development: Adulthood (3 Credits)**

Designed to further understanding of the adult and his/her endeavors in the learning process. Emphasis will be on the major contributing factors (physiological, psychological, and sociological) that affect the adult, on the relevant research findings, and on implications for educators.

**EDPY 741 - Basic Processes: Cognition (3 Credits)**

A study of the cognitive processes involved in complex learning, conceptualization, problem-solving, abstract reasoning, and other aspects of higher intellectual functioning as developed and used in the educational setting.

**EDPY 751 - Learning and Instruction (3 Credits)**

A systematic survey of major traditional and contemporary learning theories and principles relevant to the design and development of classroom teaching and instruction.

**EDPY 752 - Research Methods in Educational Psychology (3 Credits)**

Analysis of concepts and methodological approaches to research in the Educational Psychology field. Focus on critical reading and evaluation of published literature across a broad spectrum of areas.

**EDPY 785 - Motivation and School Learning (3 Credits)****EDPY 799 - Thesis Preparation (1-9 Credits)****EDPY 805 - Contemporary Research in Human Development and Education (3 Credits)**

Issues in research on human development with applications to educational settings.

**EDPY 835 - Educational Psychology (3 Credits)**

Advanced study of educational psychology with special emphasis on learning.

**Prerequisites:** EDPY 752 and EDRM 711.

**EDPY 873 - Advanced Problems in Educational Psychology (3 Credits)**  
Advanced problems in educational psychology as they apply to the public schools at all levels. Designed to meet the needs of candidates for graduate degrees.

**EDPY 890 - Independent Study (3 Credits)**

**EDPY 899 - Dissertation Preparation (1-12 Credits)**

## Educational Technology (EDET)

**EDET 603 - Design and Development Tools I (3 Credits)**

Study of multimedia elements (e.g., graphics, animation, audio, and video) including the creation and editing of materials. Instructional applications, copyright issues, and technology limitations will be explored.

**EDET 650 - Internship in Educational Technology (3 Credits)**

Supervised field-based experiences in the design, development, evaluation, and implementation of technology-based instructional and training projects.

**Prerequisites:** EDET 603, EDET 703, and EDET 722.

**EDET 652 - Design and Evaluation of Games and Simulations (3 Credits)**

Application of instructional design criteria to computer and noncomputer interactions. Analyses include requisite cognitive processes, affective outcomes, and ethical standards. Design and formative testing of interactive exercises.

**EDET 703 - Design and Development Tools II (3 Credits)**

Critical analysis of research in multimedia programs and implications for instruction. Application of instructional design criteria to develop, author, and evaluate multimedia projects.

**Prerequisites:** EDET 603.

**EDET 709 - Applications of Learning Principles (3 Credits)**

Behavioral and cognitive learning principles applicable to the design of technology-based instruction and performance training.

**EDET 722 - Instructional Design and Assessment (3 Credits)**

Principles and models of instructional design and the assessment of learning. Applications of the instructional design process and assessment criteria to develop instruction and assessment tools for technology-based environments.

**EDET 735 - Technological Applications for Diverse Populations (3 Credits)**

Application of Universal Design, assistive devices, and other technologies to assure access to information and productivity tools by persons with disabilities, English-language learners, students at risk, and the elderly.

**EDET 746 - Management of Technology Resources (3 Credits)**

The organization and administration of media programs in school buildings and districts, regional and state centers, and colleges and universities. Procedures, problems, and trends for an integrated instructional support system will be emphasized.

**EDET 755 - Design and Evaluation of Information Access and Delivery (3 Credits)**

Telecommunications tools to support research and instruction across the curriculum. Study of distance education and issues related to instructional delivery, connectivity, and distribution methods.

**EDET 780 - Research Seminar in Educational Technology (3 Credits)**

A study of contemporary trends, problem areas, and issues in educational technology through literature investigations, seminar discussions, and case studies.

**EDET 793 - Advanced Instructional Design and Development (3 Credits)**  
Incorporation of instructional design criteria, multimedia development skills, knowledge of instructional methods, learning theory, and evaluation to develop a comprehensive multimedia or Web-based instructional project.

**Prerequisites:** EDET 650, EDET 703.

**EDET 799 - Thesis Preparation (1-9 Credits)**

**EDET 801 - Doctoral Research in Educational Technology (3 Credits)**

A comprehensive study of the educational technology field, and an analysis of a significant question or issue related to teaching and administration in K12 schools, higher education, and/or other social institutions through literature investigation.

**EDET 810 - Principles of Applied Educational Technology Research (3 Credits)**

Introduction to the design of applied educational technology research with theoretical alignment of contemporary paradigms of research, purposes, research questions, ethics, and positionality.

**EDET 811 - Advanced Applied Educational Technology Research (3 Credits)**

Advanced applied quantitative and qualitative methods for educational technology research using data collection, analysis, interpretation, and systematic study of a significant research problem related to teaching and learning in technology-enhanced learning environments.

**Prerequisites:** EDET 810.

**EDET 825 - Evaluation of Educational Technology Research (3 Credits)**

Evaluation and review of relevant research literature in educational technology to synthesize theories, trends, and issues related to the field.

**Prerequisites:** EDET 811.

**EDET 826 - Synthesizing Educational Technology Research (3 Credits)**

Emphasis is placed on synthesizing research into an original, coherent and structured review of related literature.

**Prerequisites:** EDET 825.

**EDET 850 - Special Topics in Educational Technology (3 Credits)**

Selected topical problems for advanced graduate students interested in technology-enhanced teaching, learning, and performance environments.

**EDET 899 - Dissertation Preparation (1-12 Credits)**

Special permission of department required.

## Electrical Engineering (ELCT)

**ELCT 510 - Photovoltaic Materials and Devices (3 Credits)**

Fundamentals of photovoltaic solar cell technologies. Design and operation of solar cells, including efficiency analysis and cost benefit. Applications to green and sustainable energy systems.

**Prerequisites:** C or better in ELCT 363.

**ELCT 521 - Introduction to Microwaves (3 Credits)**

Introduction to plane electromagnetic wave propagation, transmission lines, transmission line equations, input impedance, waveguides and cavities, antennas and antenna arrays, microwave modeling.

**Prerequisites:** ELCT 361 or PHYS 504.

**ELCT 530 - Industrial Controls (3 Credits)**

The embedded electronics and software used in data acquisition, and process and instrument control in an industrial or manufacturing environment.

**Prerequisites:** ELCT 331.



**ELCT 531 - Digital Control Systems (3 Credits)**

Analysis and design of discrete-time control systems, implementation of control systems using digital electronic systems. Applications to electrical systems.

**Prerequisites:** ELCT 331.

**ELCT 533 - System Health Management (3 Credits)**

Sensing, data acquisition, and data processing for evaluation of performance and system health. Integration and implementation of health management systems.

**Prerequisites:** ELCT 321 or equivalent.

**ELCT 541 - Sensors for Biomedicine (3 Credits)**

Operating principles and design of bioelectric sensors and sensor systems for medical applications.

**Prerequisites:** C or better in ELCT 361, ELCT 363 and ELCT 371.

**ELCT 551 - Power Systems Design and Analysis (3 Credits)**

Transmission line design, load flow, and short circuit analysis of power systems.

**Prerequisites:** ELCT 331.

**ELCT 553 - Electromechanical Energy Conversion (3 Credits)**

Analysis and design of electromechanical energy conversion systems, including electrical machines and electronic drives.

**Prerequisites:** ELCT 331, ELCT 361.

**ELCT 554 - Integration of Photovoltaics in Modern Power Systems (3 Credits)**

Analysis and design of power systems in presence of photovoltaic generation with focus on protection systems, control, power quality.

**Prerequisites:** ELCT 551.

**ELCT 559 - Special Topics in Distributed Energy Resources for Electric Energy Systems (3 Credits)**

Special topics in distributed energy resources for modern electrical energy systems. Course content varies and will be announced in the schedule of classes by title. May be repeated as topics vary.

**Prerequisite or Corequisite:** ELCT 551.

**ELCT 562 - Wireless Communications (3 Credits)**

Fourier techniques and stochastic processes review, multiple access & cellular techniques, signal space representations for signals and noise, baseband modulations and optimal receivers in additive white Gaussian noise, bandpass and higher-order modulations, mobile & wireless propagation channel characteristics, effects of bandlimiting & distortion mitigation, diversity techniques.

**Prerequisites:** ELCT 332, ELCT 361.

**ELCT 563 - Semiconductor Electronic Devices (3 Credits)**

Basic semiconductor material properties. Principles and characteristics of semiconductor p-n junction and Schottky diodes, field-effect transistors (JFETs, MESFETs, and MOSFETs), and bipolar junction transistors.

**Prerequisites:** ELCT 363 or equivalent.

**ELCT 564 - RF Circuit Design for Wireless Communications (3 Credits)**

RF design fundamentals, lumped elements, transmission line theory, transmission lines and waveguides, S-parameters, impedance matching, microwave resonators.

**Prerequisites:** ELCT 361.

**ELCT 566 - Semiconductor Optoelectronics (3 Credits)**

Basic semiconductor material optical properties. Principles and structures of semiconductor lasers, Light Emitting Diodes, and photodetectors.

**Prerequisites:** ELCT 363 or equivalent.

**ELCT 572 - Power Electronics (3 Credits)**

Basic analysis and design of solid-state power electronic devices and circuitry.

**Prerequisites:** ELCT 371, ELCT 331.

**ELCT 574 - Semiconductor Materials and Device Characterization (3 Credits)**

Semiconductor material and device characterization; resistivity, carrier and doping density, contact resistance, Schottky barriers, series resistance, defects, trapped charges, and carrier lifetime.

**Prerequisites:** ELCT 363 or equivalent.

**ELCT 582 - Semiconductor Laboratory (3 Credits)**

Prerequisite: ELCT 363.

**ELCT 732 - Radio Propagation & Wireless Channel Modeling (3 Credits)**

Plane wave propagation and effects of various media. Distinct propagation mechanism descriptions. Mathematics for computing field strengths and powers for different propagation mechanisms. Antenna/noise principles. Wireless channel effects on signaling. Channel modeling as linear, time-varying filter. Delay/Doppler spreads. Empirical & statistical wireless channel models. Multi-antenna channel characteristics.

**Prerequisites:** ELCT 562 or successful completion of undergraduate courses in electromagnetics, probability/statistics, and linear system theory.

**ELCT 751 - Advanced Power Systems Analysis (3 Credits)**

Network analysis methods suitable for computer implementation. System studies, including load-flow analysis, short-circuit analysis, and state estimation.

**Prerequisites:** ELCT 551.

**ELCT 753 - Electrical Drives (3 Credits)**

Dynamics of electrical machine and space phasor theory. Analysis and design of control architecture for electrical motors.

**Prerequisites:** ELCT 553.

**ELCT 761 - Fundamental Electromagnetics (3 Credits)**

Theorems and principles of EM theory, Maxwell's equations, vector and scalar potentials. Solution to Maxwell's equation in one-, two-, and three-dimensions. Green's functions and theorems with applications to radiation and guided-wave propagation.

**Prerequisites:** ELCT 361.

**ELCT 762 - Signal Integrity for High Speed Circuits (3 Credits)**

The concept of signal integrity for high speed circuits, signal parameters, transmission lines, I/O buffer models, clock schemes, serial data, package/die/connector modeling, I/O power delivery, and measurement.

**Prerequisites:** ELCT 561 or equivalent.

**ELCT 763 - Semiconductor Device Modeling and Simulation (3 Credits)**

Computer-aided semiconductor device modeling and simulation; Technology Computer-Aided Design (TCAD) tools for modern semiconductor devices.

**ELCT 766 - Solid-State Lighting (3 Credits)**

Solid-state light sources converting electricity directly into light and their societal impacts. Includes principles, fabrication, and applications of solid-state lamps and lighting systems.

**Prerequisites:** ELCT 566.

**ELCT 771 - Optical Communications: Devices and Systems (3 Credits)**

Principles of optical communications, optical signal modulation, optoelectronic devices for optical communications.

**Prerequisites:** ELCT 361, ELCT 363, and ELCT 581.

**ELCT 772 - Advanced Power Electronics (3 Credits)**

Advanced topics in power electronics to include rectifiers, inverters, resonant and soft switching converters, power converter system stability issues.

**Prerequisites:** ELCT 572.

**ELCT 774 - Advanced Semiconductor Characterization (3 Credits)**

Advanced semiconductor material characterization; Hall effect and mobility measurements, optical characterization, scanning probe microscopy, electron microscopy, X-Ray diffraction techniques; nanoscale characterization techniques.

**Prerequisites:** ELCT 574.

**ELCT 782 - Power Semiconductor Devices (3 Credits)**

The function and theory of operation of power semiconductor devices.

**Prerequisites:** ELCT 363.

**ELCT 797 - Research (1-12 Credits)**

Individual research to be arranged with the instructor.

**ELCT 799 - Thesis Preparation (1-12 Credits)****ELCT 837 - Modern Control Theory (3 Credits)**

The analysis and synthesis of linear, nonlinear, and discrete control systems employing the state space approach.

**Prerequisites:** ELCT 331.

**ELCT 838 - Optimal Control and Estimation (3 Credits)**

Optimal filtering, prediction, and smoothing in the presence of uncertainty.

**Prerequisites:** ELCT 331.

**ELCT 839 - Robust Adaptive Control (3 Credits)**

Theory and rigorous mathematical foundation for synthesis and analysis of robust adaptive controls for systems with uncertain dynamics.

Lyapunov stability theory, robust control analysis, methods for model reference adaptive control with emphasis on L1 adaptive control.

**Prerequisites:** ELCT 331.

**ELCT 861 - Advances in Electromagnetics (3 Credits)**

Designate as special topics course.

**ELCT 862 - Antennas and Radiation (3 Credits)**

Radiation mechanism and fundamental parameters. Dipoles, monopoles, and loop antennas. Antenna arrays. Microstrip, helical, biconical, sleeve, spiral, and log-periodic dipole antennas. Horn and reflector antennas. Antenna measurement and modeling.

**Prerequisites:** ELCT 561.

**ELCT 863 - Computational Electromagnetics (3 Credits)**

Electric and magnetic field integral equations, the moment method (MM). Finite element method (FEM), discretization and interpolation, system of equations. Finite difference time domain (FDTD) method, stability, dispersion, incident wave, absorbing boundary conditions (ABCs).

**Prerequisites:** ELCT 761 or PHYS 703.

**ELCT 864 - Microwave Devices and Circuits (3 Credits)**

Microwave semiconductor diodes and transistors; active and passive microwave circuits.

**Prerequisites:** ELCT 521 and ELCT 581.

**ELCT 870 - Computing Methods for System Simulation (3 Credits)**

Use and development of computer software applications for modeling and simulation of energy systems.

**Prerequisites:** ELCT 761, ELCT 766, ELCT 771, ELCT 775.

**ELCT 871 - Advances in Semiconductor Devices (3 Credits)**

Current topics in semiconductor devices.

**Prerequisites:** ELCT 771.

**ELCT 874 - Advanced Semiconductor Materials (3 Credits)**

Principles and technology involved in the growth of both bulk and thin films of advanced semiconductor materials used in the fabrication of next generation electronic devices. Topics include principles of crystal growth, types of defects, and defect generation mechanisms.

**Prerequisites:** ELCT 563.

**ELCT 881 - Advances in Pulsed Power (3 Credits)**

Current topics in pulsed power.

**Prerequisites:** ELCT 781

**ELCT 882 - High-Speed Semiconductor Devices (3 Credits)**

Physics of Negative Differential Resistance devices, 2D-electron gas and quantum wells; principles and characteristics of heterostructure field-effect transistors and bipolar transistors, heterostructure light-emitting diodes, lasers, and photodetectors.

**Prerequisites:** ELCT 581 or PHYS 512.

**ELCT 883 - Power Systems Stability and Control (3 Credits)**

Power system transient and dynamic stability analysis. Power system control, including excitation systems, automatic generation control and boiler-turbine-generator models.

**Prerequisites:** ELCT 751.

**ELCT 891 - Selected Topics in Electrical Engineering (3 Credits)****ELCT 897 - Directed Individual Study (1-3 Credits)**

Approved plan of study must be filed.

**ELCT 899 - Dissertation Preparation (1-12 Credits)**

## Elementary Education (EDEL)

**EDEL 505P - Inquiry Practicum: The Elementary School (1 Credit)**

Identifying and understanding the various components of the elementary environment through the practice of inquiry through field-based experiences.

**Corequisite:** EDEL 305.

**EDEL 506 - Integrated Curriculum in Elementary Schools (3 Credits)**

Examining and practicing a variety of approaches that connect the content of different elementary school subjects.

**EDEL 506P - Inquiry Practicum: Roles of Elementary Teachers (1 Credit)**

Identifying and understanding the roles of elementary teachers through the practice of inquiry through field-based experiences.

**Corequisite:** EDEL 506.

**EDEL 510 - Teaching Second Languages to Young Children (3 Credits)**

To assist prospective teachers of young children in the development of a second language and multicultural learning activities. Practicum sessions are an integral part.

**Prerequisites:** 210 level of a foreign language or its equivalent.

**Cross-listed course:** FORL 510

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Internships

**EDEL 515 - Science in the Elementary School (3 Credits)**

Reinforces the science background of prospective and practicing elementary teachers. Innovations are examined. Emphasis is placed on methods, materials, community resources, and evaluation procedures.

**EDEL 544 - Modern Approaches to Mathematics Teaching (3 Credits)**

Curriculum and pedagogy for mathematics topics taught in grades 3 through 8.

**EDEL 548 - Field Problems: Teaching Mathematics Using Manipulative Materials, Grades 4-6 (3 Credits)**

Instructional approaches and materials for teaching elementary school mathematics, grades 4-6. This course cannot be applied to a graduate degree in the elementary education program.

**EDEL 560 - Social Studies in the Elementary/ Middle School (3 Credits)**

Fundamentals of social studies education in the elementary/middle school.

**EDEL 570 - Internship in Environments for Teaching and Learning (3 Credits)**

Internship for practice in classrooms appropriate to elementary education related to curriculum design and assessment.

**Prerequisites:** Admission to the internship in elementary education.

**EDEL 571 - Internship in Planning and Motivation (3 Credits)**

Field experience that emphasizes planning lessons that actively engage students in learning.

**Prerequisites:** Admission to the internship in elementary education.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Internships

**EDEL 642 - Teaching Mathematics to Young Children (3 Credits)**

Analysis of a developmental approach to teaching children under the age of 9.

**EDEL 645 - Diagnostic Teaching of Arithmetic (3 Credits)**

Analysis of the concepts and skills of arithmetic in the school mathematics curriculum; exploration of diagnostic-prescriptive teaching methods.

**EDEL 670 - Language Arts in the Elementary and Middle School (3 Credits)**

Examine the content, goals, and methods of teaching language arts in elementary and middle school.

**EDEL 690 - Independent Study (1-3 Credits)****EDEL 701 - Culturally Sustaining Pedagogy for the Elementary Classrooms (3 Credits)**

Theoretical and pedagogical approaches to Culturally Sustaining Pedagogy (CSP)—curriculum design tools and instructional strategies that reflect the diversity of students' cultural and linguistic backgrounds in elementary classrooms. Masters of Arts in Teaching for Elementary Education Majors.

**EDEL 709 - Curriculum and Instruction Practices Designed to Teach Content & Literacy Across the Curriculum (3 Credits)**

An investigation of the beliefs and practices of high quality instructional methods and materials designed to teach elementary readers, writers, mathematicians, scientists and social scientists. Individual content area instruction will be addressed as well as strategies for genuine integration across the curriculum. Special attention will be devoted to teaching diverse populations including English Language Users, in culturally responsive ways.

**EDEL 715 - The Elementary School Curriculum (3 Credits)**

Critical study of the modern elementary school curriculum.

**EDEL 716 - The Elementary School Organization (3 Credits)**

A course designed to examine the internal facets of the elementary school, including the library; health, guidance, and other pupil personnel services; curriculum revision; elementary school procedures; and pupil accounting.

**Prerequisites:** EDEL 715.

**EDEL 717 - Curriculum Problems in the Elementary School (3 Credits)**

A careful examination of the persistent problems of elementary schools (grouping, promotions, etc.) and the best solutions in terms of research findings and expert opinion.

**Prerequisites:** EDEL 715.

**EDEL 720 - Middle School Organization and Curriculum (3 Credits)**

An overview of the development of the middle school, history, purposes, and organization and an in-depth analysis of middle school organization and curriculum. The characteristics of middle school students, methods of evaluating students, and the overall curricular program are also considered.

**EDEL 743 - Studies and Internship in Teaching Social Studies-Elementary (3 Credits)**

The study and practice of social studies education for elementary students focusing on appropriate content, goals and methods.

**Prerequisites:** Admission to the MAT program.

**EDEL 744 - Studies and Internship in Teaching Science - Elementary (3 Credits)**

The study and practice of science education for elementary students focusing on appropriate content, goals and methods.

**Prerequisites:** Admission to the MAT program.

**EDEL 745 - Teaching Elementary Problem Solving, Geometry and Measurement Topics (3 Credits)**

Analysis of the school curriculum and instructional methods in the designated areas of mathematics; exploration of appropriate outcomes on instruction.

**Prerequisites:** MATH 221 or its equivalent.

**EDEL 760 - Implementing Social Studies in the Elementary/Middle School (3 Credits)**

The selection of teaching procedures and instructional materials used to teach social studies in the elementary/middle school.

**EDEL 771 - Teaching Writing in Elementary and Middle School (3 Credits)**

Writing instruction in relation to the developmental characteristics of children through preadolescence.

**EDEL 780 - Seminar in Elementary Education (3 Credits)**

Students will synthesize their graduate studies for a master's degree in elementary education. 24 semester hours of credit earned as specified on the master's degree program of study.

**EDEL 790 - MAT Internship in Elementary Education (9 Credits)**

Internship for practice in elementary classrooms (grades 2-6) related to curriculum design, assessment, interactive teaching, and professional roles. MAT in Elementary Education majors.

**Prerequisites:** Admission to Internship II in Elementary Education.

**Corequisite:** EDEL 791.

**EDEL 790A - Internship II: Elementary School Instruction (4 Credits)**

Internship for practice in classroom settings related to curriculum design and implementation, leading to initial certification.

**Prerequisites:** Admission to MAT program and successful completion of first semester internship.

**Corequisite:** EDEL 790B, EDEL 790C, EDEL 791.

**EDEL 790B - Internship II: Elementary School Instruction (4 Credits)**

Internship for practice in classroom settings related to instruction, leading to initial certification.

**Prerequisites:** Admission to MAT program and successful completion of first semester internship.

**Corequisite:** EDEL 790A, EDEL 790C, EDEL 791.

**EDEL 790C - Internship II: Elementary School Professional Roles (4 Credits)**

Internship for practice in classroom settings related to professional development, leading to initial certification.

**Prerequisites:** Admission to MAT program and successful completion of first semester internship.

**Corequisite:** EDEL 790A, EDEL 790B, EDEL 791.

**EDEL 791 - Elementary Internship Seminar (3 Credits)**

Seminar for students seeking initial certification. Consideration of principles and theories of curriculum development and strategies to translate curriculum into personal classroom practice.

**Prerequisites:** Admission to MAT program and successful completion of first semester internship.

**Corequisite:** EDEL 790A, EDEL 790B, EDEL 790C.

**EDEL 815 - Models of Instruction (3 Credits)**

Seminar on the relationship between different models of teaching and the cognitive, affective, social, and psychological outcomes of instruction.

**Prerequisites:** master's degree in education.

**EDEL 840 - Advanced Study of Teaching Elementary School Mathematics (3 Credits)**

Identification of instructional methods implied by recent research on mathematics teaching, learning, and curriculum.

**Prerequisites:** EDEL 645 or EDEL 745.

**EDEL 858 - Advanced Study of Science in Elementary/Middle School (3 Credits)**

Study of curriculum models and instructional theory underlying elementary and/or middle school science programs.

**Prerequisites:** EDEL 515 or equivalent.

**EDEL 860 - Advanced Study of Social Studies in Elementary/Middle School (3 Credits)**

Analysis and application of the concepts and skills that broaden the traditional scope of elementary/middle school social studies curriculum.

**Prerequisites:** EDEL 560 or EDEL 760.

**EDEL 870 - Advanced Study of Language Arts for the Elementary School (3 Credits)**

Examination of programs, content, and methods of teaching writing, speaking, reading and listening to grades 1-8 in the light of current research and theory in language learning.

**Prerequisites:** EDEL 670 or equivalent.

**EDEL 890 - Independent Study (3 Credits)**

## English (ENGL)

**ENGL 550 - Language of the Professions (3 Credits)**

Practical survey of the syntactic structures of English; usage, social and regional variation emphasis on data.

**Prerequisites:** ENGL 450, LING 421 or ENGL 680, LING 600.

**ENGL 565 - African American Theatre (3 Credits)**

The major movements, figures, plays, and critical strategies that have marked the development of African American theatre in the 19th, 20th, and 21st centuries.

**Prerequisites:** ENGL 101 and ENGL 102, and one course between ENGL 270- ENGL 292.

**Cross-listed course:** AFAM 565, THEA 565

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy, GLD: Professional and Civic Engagement Leadership Experiences

**ENGL 566 - Special Topics in U.S. Film and Media (3 Credits)**

Intensive study of a specific topic in U.S. film and media studies. May be repeated as content varies by title.

**Prerequisites:** FAMS 240.

**Cross-listed course:** MART 593

**ENGL 600 - Seminar in Verse Composition (3 Credits)**

First half of a year-long course in the writing of poetry taught by a contemporary poet. Limited to 15 students.

**Prerequisites:** ENGL 101 and ENGL 102, and one course between ENGL 270- ENGL 292.

**ENGL 601 - Seminar in Verse Composition (3 Credits)**

Second half of a year-long course in the writing of poetry taught by a contemporary poet. Limited to 15 students.

**Prerequisites:** ENGL 101 and ENGL 102, and one course between ENGL 270-ENGL 292.

**ENGL 602 - Fiction Workshop: Short Story (3 Credits)**

Instruction in the writing of short fiction taught by a contemporary prose writer. May be repeated once for credit.

**Prerequisites:** ENGL 101 and ENGL 102, and one course between ENGL 270-ENGL 292.

**ENGL 603 - Non-Fiction Prose Workshop (3 Credits)**

Instruction in the writing of the nonfiction essay taught by a contemporary prose writer. May be repeated once for credit.

**Prerequisites:** graduate status in the English department, or permission of instructor for undergraduates.

**ENGL 604 - Seminar in Composition for the Visual Media (3 Credits)**

Writing for the visual arts, the student will write a treatment (prospectus) and one or more multimedia scripts; or one or more teleplays; or a feature-length screenplay. Limited to 15 students.

**Prerequisites:** ENGL 101 and ENGL 102 or equivalent; ENGL 565 or equivalent experience in film as determined by the instructor.

**ENGL 605 - Seminar in Composition for the Visual Media (3 Credits)**

Writing for the visual arts, the student will write a treatment (prospectus) and one or more multimedia scripts; or one or more teleplays; or a feature-length screenplay. Limited to 15 students.

**Prerequisites:** ENGL 101 and ENGL 102 or equivalent; ENGL 565 or equivalent experience in film as determined by the instructor.

**ENGL 606 - Playwriting Workshop (3 Credits)**

Instruction in playwriting taught by a contemporary playwright. May be repeated once for credit.

**Prerequisites:** graduate status in the English department, or permission of instructor for undergraduates.

**ENGL 610 - Fiction Workshop: Book-Length Manuscript (3 Credits)**

Instruction in the writing of book-length manuscripts taught by a contemporary prose writer. May be repeated once for credit.

**Prerequisites:** ENGL 101 and ENGL 102, and one course between ENGL 270- ENGL 292.

**ENGL 611 - Writing the Longer Nonfiction Project (3 Credits)**

Instruction in the writing of a book-length nonfiction memoir or literary journalism project taught by a contemporary prose writer. May be repeated once for credit.

**Prerequisites:** graduate status in the English department, or permission of instructor for undergraduates.

**ENGL 612 - Writing Poetry: Traditional and Modern Forms (3 Credits)**

The writing of traditional and modern poetic forms. Exercises will give practice in composing metered and free verse. Representative masterpieces of traditional and modern poetry will also be studied.

**Prerequisites:** ENGL 101 and ENGL 102, and one course between ENGL 270- ENGL 292.

**ENGL 613 - Writing the Full-Length Play (3 Credits)**

Instruction in the writing of a full-length, two-act play for publication or production. May be repeated once for credit.

**Prerequisites:** graduate status in the English department, or permission of instructor for undergraduates.

**ENGL 615 - Academic and Professional Writing (3 Credits)**

A workshop course in the development and revision of writing for academic and professional audiences.

**Prerequisites:** ENGL 101 and ENGL 102, and one course between ENGL 270- ENGL 292.

**ENGL 616 - Writing Children's and Young Adult Literature (3 Credits)**

Critical study and practical crafting of literature for children and/or young adults, exploring the demands of these genres both through the reading of representative works and relevant secondary sources and through the writing of creative works. Undergraduate students must receive permission of instructor.

**ENGL 620 - Computer Methods for Humanistic Problems (3 Credits)**

Introduction to data processing concepts suitable for research interests in non-numerical areas such as the humanities.

**ENGL 620P - Laboratory for Computer Methods for Humanistic Problems (1 Credit)**

Broad but intensive introduction to computer systems and programming for students in the humanities. No mathematical or scientific background is presumed. Laboratory experience with data-processing equipment; introduction to elementary digital computer programming in an appropriate language.

**Corequisite:** ENGL 620.

**ENGL 650 - Special Topics in Literature (1-3 Credits)**

Course content varies and will be announced in the schedule of classes by title. May be repeated for credit as topics vary.

**Prerequisites:** ENGL 101 and ENGL 102.

**ENGL 680 - Survey of Linguistics (3 Credits)**

Survey of core areas of linguistics and extensions to closely related disciplines. Introduction to the linguistic component of human cognition. Formal description and analysis of the general properties of speech and language, the organization of language in the mind/brain, and cross-linguistic typology and universals.

**Cross-listed course:** ANTH 600, LING 600

**ENGL 690 - Special Topics in Composition (3 Credits)**

Course content varies and will be announced in the schedule of classes by title.

**Prerequisites:** ENGL 101 and ENGL 102.

**ENGL 691 - Teaching of Literature in College (2 Credits)**

Introduction to the methods of teaching literature, with emphasis on current pedagogical practice and theory and applications of electronic media. The course meets during the first seven weeks of the term and provides supervision of graduate students teaching English 101.

**ENGL 692 - Teaching of Composition in College (1 Credit)**

Introduction to the methods of teaching composition, with emphasis on current pedagogical practice and theory and applications of electronic media. The course meets during the first seven weeks of the term and provides supervision of graduate students teaching English 102.

**ENGL 700 - Introduction to Graduate Study of English (3 Credits)**

Lectures, discussions, and practical assignments in the history, principles, and methods of research into writings in English, taught by various members of the department. Recommended for M.A. and Ph.D. students in the first year of course work.

**ENGL 701 - Special Topics in Old English Literature and Culture (3 Credits)**

Selected topics in Old English literature and culture. May be repeated up to five times for credit as topics vary.

**ENGL 704 - Special Topics in Medieval Literature and Culture (3 Credits)**

Selected topics in medieval literature and culture. May be repeated up to five times for credit as topics vary.

**ENGL 706 - Special Topics in 16th and 17th Century British Literature and Culture (3 Credits)**

Selected topics in 16th and 17th century British literature and culture. May be repeated up to five times for credit as topics vary.

**ENGL 707 - Special Topics in 18th Century British Literature and Culture (3 Credits)**

Selected topics in 18th century British literature and culture. May be repeated up to five times for credit as topics vary.

**ENGL 709 - Special Topics in 19th Century British Literature and Culture (3 Credits)**

Selected topics in 19th century British literature and culture. May be repeated up to five times for credit as topics vary.

**ENGL 714 - Special Topics in 20th & 21st Century British Literature and Culture (3 Credits)**

Selected topics in 20th and 21st century British literature and culture. May be repeated up to five times for credit as topics vary.

**ENGL 719 - Special Topics in Colonial American Literature and Culture (3 Credits)**

Selected topics in colonial American literature and culture. May be repeated up to five times for credit as topics vary.

**ENGL 721 - Special Topics in 19th Century American Literature and Culture (3 Credits)**

Selected topics in 19th century American literature and culture. May be repeated up to five times for credit as topics vary.

**ENGL 722 - Special Topics in 20th & 21st Century American Literature and Culture (3 Credits)**

Selected topics in 20th and 21st century American literature and culture. May be repeated up to five times for credit as topics vary.

**ENGL 731 - Special Topics in Children's and Young Adult Literature (3 Credits)**

Selected topics in children's and young adult literature. May be repeated up to five times for credit as topics vary.

**ENGL 733 - Classics of Western Literary Theory (3 Credits)**

Problems of literary theory in texts from the ancients to the 17th century, with an emphasis on the classical tradition.

**Cross-listed course:** CPLT 701

**ENGL 734 - Modern Literary Theory (3 Credits)**

Problems of literary theory from the 18th century to the 1960s.

**Cross-listed course:** CPLT 702

**ENGL 736 - Special Topics in Gender and Sexuality Studies (3 Credits)**

Selected topics in gender and sexuality studies. May be repeated up to five times for credit as topics vary.

**ENGL 739 - Special Topics in Critical Race and Ethnic Studies (3 Credits)**

Selected topics in critical race and ethnic studies. May be repeated up to five times for credit as topics vary.

**ENGL 740 - Special Topics in Southern Literature and Culture (3 Credits)**

Selected topics in literature and culture of the U.S. South. May be repeated up to five times for credit as topics vary.

**ENGL 741 - Special Topics in African American Literature and Culture (3 Credits)**

Selected topics in African American literature and culture. May be repeated up to five times for credit as topics vary.

**ENGL 743 - Special Topics in Women's Literature and Culture (3 Credits)**

Selected topics in women's literature and culture. May be repeated up to five times for credit as topics vary.

**ENGL 746 - Special Topics in Transatlantic Literature and Culture (3 Credits)**

Selected topics in transatlantic literature and culture. May be repeated up to five times for credit as topics vary.

**ENGL 747 - Special Topics in Global Anglophone Literature and Culture (3 Credits)**

Selected topics in global Anglophone literature and culture. May be repeated up to five times for credit as topics vary.

**ENGL 748 - Special Topics in Postcolonial Literature and Culture (3 Credits)**

Selected topics in postcolonial literature and culture. May be repeated up to five times for credit as topics vary.

**ENGL 749 - Special Topics in Performance Studies (3 Credits)**

Selected topics in performance studies. May be repeated up to five times for credit as topics vary.

**ENGL 754 - Special Topics in Film and Media Studies (3 Credits)**

Selected topics in film and media studies. May be repeated up to five times for credit as topics vary.

**ENGL 764 - Special Topics in Theory and Critical Methods (3 Credits)**

Selected topics in theory and critical methods. May be repeated up to five times for credit as topics vary.

**ENGL 765 - Advanced Film Study (3 Credits)**

Methods of film analysis, resources for research, and the major critical theories.

**Cross-listed course:** CPLT 765

**ENGL 766 - Special Topics in Genre, Form, and Aesthetics (3 Credits)**

Selected topics in genre, form, and aesthetics. May be repeated up to five times as topics vary.

**ENGL 776 - Introduction to Bibliography and Textual Studies (3 Credits)**

Introduction to analytical, descriptive, and textual bibliography, and to the principles and practice of editing. Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

**ENGL 781 - History of English Language (3 Credits)**

The historical background of Modern English with attention to the major linguistic and cultural developments which distinguish English from other related languages. No prior knowledge of Old English or Middle English is required. Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

**Cross-listed course:** LING 731

**ENGL 782 - Varieties of American English (3 Credits)**

Social and regional variation in American English since the colonial period. Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

**Cross-listed course:** LING 745

**ENGL 788 - Stylistics (3 Credits)**

Linguistic analysis of literary texts. Linguistic definition of style; stylistic choices as the author's voice. Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

**ENGL 789 - Poetics (3 Credits)**

The question of meaning in poetry with special attention to linguistic structure as the source of that meaning; also prosody and related formal effects. Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

**ENGL 790 - Survey of Composition Studies (3 Credits)**

Comprehensive survey of the history and development of composition studies, and of the present state of knowledge about theories, principles, and practices in the field. Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

**ENGL 791 - Introduction to Research on Written Composition (3 Credits)**

Introduction to the types and methods of research on written composition, both qualitative and quantitative, with intensive analysis of representative exemplars of these types and methods. Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

**ENGL 792 - Classical Rhetoric (3 Credits)**

Survey of ancient Greek and Roman rhetorical theory. Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

**ENGL 793 - Rhetorical Theory and Practice, Medieval to Modern (3 Credits)**

Survey of major theories of rhetoric from medieval to modern times. Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

**ENGL 794 - Modern Rhetorical Theory (3 Credits)**

Survey of 20th-century contributions to rhetorical theory. Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

**ENGL 795 - The Teaching of Business and Technical Writing (3 Credits)**

A study of theory and practice in business, technical, and scientific writing with emphasis on the pedagogical materials and techniques available to the business and technical writing teacher. Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

**ENGL 796 - Special Topics in the Teaching of English (1-3 Credits)**

Exploration of issues relevant to the teaching of literature, composition, rhetoric, or speech communication. May be repeated for credit as topics vary.

**ENGL 797 - Current Scholarship in Rhetoric and Composition (3 Credits)**

Close study of annual issues of recent journals in the field to identify current trends in research and models for scholarly writing.

**ENGL 799 - Thesis Preparation (1-9 Credits)**

Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

**ENGL 803 - Special Topics: Seminar in Literary and Cultural Studies (3 Credits)**

Specialized study in literary and cultural studies. May be repeated up to four times for credit as topics vary.

**ENGL 804 - Special Topics: Seminar in Theory and Critical Methods (3 Credits)**

Specialized study in theory and critical methods. May be repeated up to four times for credit as topics vary.

**ENGL 805 - Special Topics: Seminar in Media Studies (3 Credits)**

Specialized study in digital, print, and/or cinematic media. May be repeated up to four times for credit as topics vary.

**ENGL 831 - Theory of Prose Fiction (3 Credits)**

Various types of prose fiction from folk tales and fables to short stories and novels; including historical changes in fictional forms, the function of technical devices, and modern theories of narrative. Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

**ENGL 832 - Theory of Poetry (3 Credits)**

A study of various aspects of poetry as an art form, including rhythm, meter, sound, color. Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

**ENGL 846 - Studies in Southern Literature (3 Credits)**

Topics selected by the instructor for specialized study.

**ENGL 850 - Studies in British and American Literature (3 Credits)**

Topics selected by the instructor for specialized study. Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

**ENGL 862 - Special Topics in Children's and Young Adult Literature (3 Credits)**

Special topics selected by instructor for specialized study. May be repeated as content varies by title.

**ENGL 870 - Seminar in Bibliography, Textual Criticism, and Editing (3 Credits)**

Seminar in analytical and descriptive bibliography. Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

**ENGL 871 - Seminar in Bibliography, Textual Criticism, and Editing (3 Credits)**

Seminar in textual criticism and editing of specific forms of publication (e.g., manuscripts, plays, poetry, novels). Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.  
**Prerequisites:** ENGL 776 or equivalent.

**ENGL 872 - Seminar in Bibliography, Textual Criticism, and Editing (3 Credits)**

Seminar in textual criticism and editing of particular periods of English or American literature. Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.  
**Prerequisites:** ENGL 776 or equivalent.

**ENGL 890 - Studies in Rhetoric and Composition (3 Credits)**

Topics selected by the instructor for specialized study. May be repeated as topics vary. Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

**ENGL 895 - Directed Reading and Research (1-3 Credits)**

Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

**ENGL 896 - Directed Reading and Research (1-3 Credits)**

Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

**ENGL 899 - Dissertation Preparation (1-12 Credits)**

Non-degree students may not enroll without the consent of the Director of Graduate Studies in English.

## Engr and Computing (ENCP)

### ENCP 540 - Environmentally Conscious Manufacturing (3 Credits)

Design for the environment; life cycle analysis; environmental economics and global competitiveness; legal and regulatory affairs; and management of technological change. Interdisciplinary collaboration of engineering, science, math, and business majors. Graduate student standing or consent of instructor.

### ENCP 602 - Introduction to Engineering Design for Teachers (3 Credits)

An introduction to computer-aided design with solid modeling for pre-service and in-service teachers. Design process, professional communication and collaboration methods, design ethics, and technical documentation. Non-engineering and computing majors only.

**Prerequisites:** usite: college algebra with trigonometry.

### ENCP 603 - Gateway to Technology for Teachers (3 Credits)

Addresses the development of knowledge, skills, and understanding of modern technology. For preservice and in-service teachers. College of Engineering and Computing majors are excluded.

**Prerequisites:** MATH 112 or MATH 115.

### ENCP 605 - Principles of Engineering for Teachers (3 Credits)

Introduces technological processes employed in engineering and engineering technology for K-12 teachers. For pre-service and in-service teachers. College of Engineering and Computing majors are excluded.

**Prerequisites:** MATH 112 or MATH 115.

### ENCP 701 - Introduction to Engineering for Teachers I (3 Credits)

Participants will develop skills and knowledge to teach ENCP 101. For teachers and graduate students in teacher education programs. Restricted to nonengineering majors only.

### ENCP 702 - Engineering Graphics with Solid Modeling for Teachers (3 Credits)

An introduction to computer-aided design with solid modeling for K-12 teachers. For teachers and graduate students in teacher education programs.

**Prerequisites:** College algebra with trigonometry Note: Restricted to nonengineering majors only.

### ENCP 704 - Digital Electronics for Teachers (3 Credits)

An introductory course in digital electronics for K-12 teachers. For teachers and graduate students in teacher education programs. Restricted to nonengineering majors only.

**Prerequisites:** College physics including electricity and magnetism.

### ENCP 707 - Continuum Mechanics (3 Credits)

Development of theory of strain and of stress; constitutive equations; compatibility conditions; equations of motion. An introduction to courses in mechanics of solids and of fluids.

### ENCP 710 - Dynamic Analysis (3 Credits)

Analysis of lumped and continuous multidegree of freedom mechanical systems. Transfer function analysis. Response of systems to steady-state, shock, and random excitation. Introduction to non-linear vibrations and wave propagation.

**Prerequisites:** ENCP 424.

### ENCP 721 - Elasticity (3 Credits)

Equilibrium, strain-displacement, compatibility, and constitutive equations in terms of complex potential stress functions, applications to plane engineering boundary value problems including beams, disks, thick-walled tubes, and stress concentration problems.

**Prerequisites:** ENCP 707.

### ENCP 730 - Cases in Technology Feasibility Analysis (3 Credits)

Technology innovation, exploitation of intellectual property, and technology feasibility analysis.

### ENCP 733 - Legal Aspects of Engineering & Innovation (3 Credits)

Contracts, products liability, intellectual property including patent, trade secrets, copyrights and trademarks, and business torts relating to product design.

### ENCP 734 - Prototype Design & Manufacturing (3 Credits)

Development processes and organization, product planning, manufacturing principles, and prototyping.

### ENCP 735 - Developing and Launching New Ventures in Science and Technology (3 Credits)

Processes, strategies and tools to analyze and facilitate the emergence of science and technology oriented ventures.

### ENCP 736 - Innovation and New Venture Analysis (3 Credits)

Entrepreneurial perspective and planning, market preparation, business model analysis, business planning and fundraising.

### ENCP 737 - Entrepreneurial Laboratory (6 Credits)

Supervised experience in the field of technology innovation and engineering entrepreneurship.

### ENCP 789 - Advanced Special Topics in Engineering and Computing (0-3 Credits)

Special topics of an interdisciplinary nature for graduate students of engineering and computing. Course content varies and will be announced in the schedule of classes by title.

## Environment (ENVR)

### ENVR 500 - Environmental Practicum (3 Credits)

Multidisciplinary research projects related to University or community environmental problems (e.g., energy, water conservation, solid waste, recycling).

### ENVR 501 - Special Topics in the Environment (3 Credits)

An in-depth analysis course of a specific interdisciplinary environmental topic. Course content varies and will be announced in the schedule of classes by title.

**Prerequisites:** ENVR 101 or ENVR 201.

### ENVR 531 - Sustainability Management and Leadership Strategies (3-4 Credits)

Integrated management system principles and advanced leadership strategies to create sustainable development initiatives.

### ENVR 533 - Sustainability Projects Course (3 Credits)

Research, development and implementation of sustainability projects throughout the campus and community.

### ENVR 538 - Global Food Politics (3 Credits)

Political, social, and cultural landscapes of food and farming around the world; issues of agricultural production, trade, consumption, and food security.

**Cross-listed course:** GEOG 538



**ENVR 540 - Decolonizing the Environment: Race, Nature, Power (3 Credits)**

Critical examination of the ways ideas about nature and racial difference are conceptually and materially entwined with the production of social and environmental inequalities.

**ENVR 548 - Environmental Economics (3 Credits)**

An analysis of the economics aspects of environmental decay, pollution control, and natural resource use. Analysis of the ability of the market system to allocate resources efficiently when economic activity is accompanied by environmental damage. Discussion of alternative public policy approaches to pollution control and natural resource conservation.

**Prerequisites:** ECON 221 and ECON 222, or ECON 224.

**Cross-listed course:** ECON 548

**ENVR 571 - Conservation Biology (3 Credits)**

Principles of conservation biology. Importance of biodiversity, causes of decline and extinction, and restoration and conservation policy in terrestrial and aquatic ecosystems.

**Prerequisites:** BIOL 301.

**Cross-listed course:** BIOL 571

**ENVR 572 - Freshwater Ecology (3 Credits)**

Quantitative study of the population, community and evolutionary ecology of freshwater habitats (lakes, ponds, rivers, streams, wetlands). Includes mandatory fieldtrips.

**Prerequisites:** BIOL 301.

**Cross-listed course:** BIOL 572

**ENVR 590 - Environmental Issues Seminar (3 Credits)**

Collaborative study of a contemporary environmental issue. Field trips may be required. Restricted to Environmental Science and Environmental Studies majors.

**Prerequisites:** BIOL 301.

**ENVR 700 - Current Topics in Environmental Studies (3 Credits)**

Current issues, policies, and regulations pertaining to environmental studies. Emphasizes integrated multidisciplinary approaches toward identification, evaluation, preservation, mitigation, and/or utilization of environmentally sensitive material and sites.

**ENVR 725 - International Environmental Management Systems (3 Credits)**

International environmental management systems standards will be integrated with business planning to provide students with the best strategies for future growth in today's environmentally sensitive global economy.

**ENVR 790 - Directed Individual Studies (1-6 Credits)**

Directed research topics to be individually assigned.

**ENVR 795 - Environmental Internship Preparation (1-3 Credits)**

Preparation and presentation of a capstone project plan for conduct of multidisciplinary environmental research addressing public/private/non-profit sector issues through an internship in government agencies, NGOs or private industry.

**Prerequisites:** One semester full-time graduate enrollment or equivalent.

**ENVR 796 - Environmental Internship (1-3 Credits)**

Environmental internship in government agencies, NGOs, or private industry, culminating in a project deliverable. Typically includes data analyses/metrics, resource management options, and/or internal outreach education, with final assessment. Restricted to graduate students in the MEERM program.

**Prerequisites:** 3 credits of ENVR 795; successful completion of MEERM comprehensive examination.

**ENVR 799 - Thesis Preparation (1-9 Credits)****ENVR 800 - Seminar in Environmental Studies (3 Credits)**

Examination of the effectiveness of environmental policies and methods relative to current issues and needs.

**ENVR 802 - Environmental Policy and Management (3 Credits)**

An examination of issues related to environmental policy making, implementation and management.

**Cross-listed course:** POLI 769

**ENVR 804 - Environmental Advocacy Seminar (3 Credits)**

This seminar is designed to explore and develop practical advocacy skills in the area of environmental representation and to provide an understanding of advocacy in administrative, legislative, and litigation arenas.

**Cross-listed course:** LAWS 804

**ENVR 835 - Seminar in Environmental Ethics (3 Credits)**

Examination of the intellectual, cultural, and ethical frameworks within which environmental problems arise and are solved.

**Cross-listed course:** PHIL 835

## Environmental Hlth Sci (ENHS)

**ENHS 515 - Introduction to Public Health and Emergency Preparedness and Response (3 Credits)**

Introduction to emergency preparedness and response in relation to environmental and public health. Historical context for the emergence of public health emergency preparedness and demonstration of articulation with community response partner agencies in the post-9/11 era.

**ENHS 592 - Advanced Special Topics in Environmental Health (1-3 Credits)**

Emerging issues and topics concerning environmental health. May be repeated as content varies by title up to a total of 9 credit hours.

**ENHS 625 - Medical Mycology (3 Credits)**

Advanced study of infectious diseases caused by fungi. Etiology, symptoms, and treatment of fungi related illnesses.

**Cross-listed course:** BIOL 625

**ENHS 660 - Concepts of Environmental Health Science (3 Credits)**

Environmental health sciences presenting the earth as a complex system in which people, plants, animals, and non-living physical-chemical components interact.

**ENHS 661 - Parasitology (4 Credits)**

Parasites of biological, economic, and public health importance.

**Prerequisites:** 300 level Biology course or equivalent.

**Cross-listed course:** BIOL 531, EPID 661

**ENHS 662 - Industrial Health Programs (3 Credits)**

Analysis, planning, and implementation of programs to protect workers' health in industry; legislative and regulatory background.

**ENHS 664 - Environmental Genomics (3 Credits)**

"State of the art" molecular techniques that elucidate mechanisms of environmental contaminants in model systems.

**ENHS 665 - Biofilms in Environmental Health and Disease (3 Credits)**

Effect of bacterial biofilm process on many diverse areas. Recognition, prevention, and control of biofilm-related problems in the environment, health care, industry, and engineering.

**ENHS 666 - Metals and Human Health (3 Credits)**

Trace metal(loid)s, their fate and transport in the environment and their potential impacts on human health.

**Prerequisites:** BIOL 101 or BIOL 110; CHEM 101 and CHEM 102, or equivalent.

**ENHS 670 - Environmental Pollutants and Human Health (3 Credits)**

Overview of environmental pollutants and their impact on human health; case studies of environmental catastrophes; principles of ecotoxicology; air, water, and land pollution associated with neurotoxicity, toxicology, and carcinogenesis.

**Prerequisites:** BIOL 101 or BIOL 110; CHEM 101 and CHEM 102.

**ENHS 671 - From Air to Alveoli: Exposure Science (3 Credits)**

A receptor-oriented approach for assessing human exposure to environmental contaminants by inhalation, dermal and ingestion routes. Covers methods for estimating exposures to protect health and well-being, to relate adverse effects to exposures, and to comply with regulations and guidelines.

**ENHS 675 - Infectious Disease Ecology (3 Credits)**

Ecological theories as the basis for environmental change and the (re)emergence of infectious agents that ultimately impact human and ecosystem health.

**ENHS 681 - Occupational Ergonomics I (3 Credits)**

Introduction to ergonomics: hazards identification and analysis; solution design and implementation; human musculoskeletal characteristics, injuries; effects of work on performance, safety, and health. Application to manufacturing and office environments.

**ENHS 740 - Environmental Nanoscience (3 Credits)**

Fundamental principles of environmental nanoscience: unique properties of nanomaterials, syntheses and characterization of nanomaterials, and key processes determining their environmental fate and behavior of nanomaterials.

**ENHS 750 - MPH Capstone Course (2 Credits)**

Synthesis of foundational and ENHS MPH competencies in preparing a high quality grant proposal to address a public health issue.

**Prerequisites:** PUBH 725, PUBH 726, PUBH 730, PUBH 735, ENHS 660.

**ENHS 755 - Marine Conservation and Environmental Health (3 Credits)**

Explores the intersection between conservation and environmental health with a particular focus on coastal and marine case studies.

**ENHS 760 - Fundamentals of Air Pollution (3 Credits)**

Chemical and physical aspects of air pollution and their regulatory problems. An examination of air pollution sources; physical and chemical processes affecting pollutants after emission; pollutants and their effects and the ultimate fate of pollutants. Attention is also given to the legal, administrative, and technical aspects of air pollution control.

**Prerequisite or Corequisite:** ENHS 660.

**ENHS 761 - Ecotoxicology of Aquatic Systems (3 Credits)**

Lethal and sublethal effects of environmental stressors on organisms living in the water column and in sediments of aquatic systems. Practical techniques of aquatic toxicology, risk assessment and modeling.

**ENHS 762 - Fundamentals of Industrial Hygiene (3 Credits)**

Industrial hygiene, including health effects, occupational health standards, and the evaluation and control of occupational health hazards.

**ENHS 763 - Medical Aspects of Occupational Health (3 Credits)**

Emphasizes the medical aspects of exposure to hazardous materials, accidents, and mental and physical stresses on the job. Clinical spectrum of occupational illness with some emphasis on industrial toxicology.

**ENHS 764 - Principles, Methods, and Issues in Air Quality (3 Credits)**

Fate, transformation, and behavior of pollutants in the atmosphere.

Exposure and human health impacts of atmospheric particles.

**Prerequisite or Corequisite:** ENHS 660.

**ENHS 765 - Applied Research in the Environmental Health Sciences (3 Credits)**

Current and prospective research associated with the multi-disciplinary areas of environmental health sciences. Critical evaluation of scientific research, and technical writing and oral presentations.

**ENHS 766 - Applied Aquatic Sciences (3 Credits)**

The quantitative application of principles of basic physical, biological, and geochemical principles in assessing and solving environmental problems in lakes, streams, and wetlands. Emphasis on watershed-water quality interactions, trophic state analyses, wasteload impact prediction, toxic chemical fate and transport, wetland values, and classification.

**Prerequisites:** ENHS 660, pre-calculus math, general ecology.

**ENHS 766L - Applied Aquatic Sciences Laboratory (1 Credit)**

Sampling and analysis of the interacting parameters used in assessing water quality and the functioning of aquatic systems.

**Corequisite:** ENHS 766.

**ENHS 767 - Ecological Modeling and Environmental Planning (4 Credits)**

Concepts in systems ecology and ecological modeling. Emphasis on the use of models and computer simulations in examining environmental interactions, predicting environmental impact, and facilitating the process of environmental planning. Lab practice in model development and computer simulation analysis.

**Prerequisites:** MATH 111 or equivalent, ecology, ENHS 660.

**Cross-listed course:** BIOL 768, MSCI 767

**ENHS 768 - Industrial Ventilation and Hazard Control (3 Credits)**

Control of chemical and physical hazards in the occupational environment. Course covers principles and design of health protection systems such as ventilation systems, collection mechanisms, control of physical factors (excluding radioactivity).

**Prerequisites:** college math and ENHS 762 or consent of instructor

**ENHS 769 - Exposure and Risk Assessment (3 Credits)**

Designing, implementing, and analyzing environmental exposures in the field; error analysis; computation of the value of improved information; hazard identification; dose-response evaluation; and risk characterization.

**Prerequisites:** MATH 141, CHEM 111 and CHEM 112, and BIOS 700 or STAT 701.

**ENHS 770 - Microbial Processes and Pollution (3 Credits)**

Microbial processes which alter the fate, bioavailability, and toxicity of environmental pollutants: biotransformations of metals and organic pollutants; resistance mechanisms and roles of microbial biofilms in toxin transfer.

**ENHS 771 - Environmental Health Sciences Seminar (1 Credit)**

Environmental Health Sciences Seminar is a one credit course that provides the opportunity for graduate students within the department and other related departments/programs to enhance and broaden their knowledge in environmental health by exploring current research and case studies.

**ENHS 772 - Human and Ecological Risk Assessment (3 Credits)**

Focuses on history, theory, and practice of predicting, managing, and communicating potential human health and environmental risks of hazardous chemicals. Reviews fundamental components and explores uncertainties, probabilistic approaches, and 'real-world' challenges of risk analysis.

**ENHS 773 - Radiation Health Physics (3 Credits)**

Physics of radiation and associated health hazards; hazard evaluation and measurements; radiation content and protection of the individual. Course covers ionizing radiation, ultraviolet, microwave, lasers, R.F. field, and ultra-sound.

**Prerequisites:** ENHS 660.

**ENHS 774 - Risk Assessment and Interactions of Environmental Toxicants (3 Credits)**

A study of biological interactions and transformation of environmental toxicants at the cellular and subcellular levels, and assessment of cellular damage as it relates to health hazards and risks. Topics to include: environmental toxicants; exposure measurements; factors affecting interactions and toxicity; metabolism of xenobiotics: types and levels of effects and interactions; and human health risks.

**Prerequisites:** ENHS 660.

**ENHS 775 - Resource Management and Environmental Impact Assessment (3 Credits)**

Review of ecological principles as applied to environmental impact assessment. Study of the mandates of the National Environmental Policy Act of 1969. Analysis of several impact assessment methodologies.

**Prerequisites:** BIOL 102 and BIOL 570.

**ENHS 776 - Environmental Regulation and Planning (3 Credits)**

Introduction to environmental planning. Survey of major federal environmental legislation. Review of processes and techniques of environmental planning including zoning, permits, management plans, assessments, and evaluation methods. Case studies of significant environmental projects.

**ENHS 777 - Radiation Biology (3 Credits)**

Fundamentals on the biological effects of ionizing radiation on living systems, especially man; basic biological mechanisms which bring about somatic and genetic effects.

**Prerequisites:** ENHS 660, ENHS 773.

**ENHS 778 - Air Pollution Monitoring and Modeling (3 Credits)**

Sources, sinks, transport, and transformation of air pollutants. Health effects that occur directly or by intermediate transport. Current monitoring methods and modeling techniques for air pollution.

**Prerequisites:** one year each of general chemistry and physics.

**ENHS 779 - Applied Environmental Physiology (4 Credits)**

Lecture and laboratory investigations concerning sublethal and lethal physiological responses of aquatic organisms to a variety of environmental pollutants. Stresses the in-depth understanding of the effects of: bacterial and thermal pollution, pesticides/herbicides, industrial chemicals, hazardous materials, and petroleum hydrocarbons on different physiological mechanisms.

**Prerequisites:** ENHS 660, ENHS 761.

**ENHS 780 - Advanced Seminar in Environmental Modeling (1-2 Credits)**

A critical review of recent advances and case histories in the formulation and use of ecological/ environmental models. Ecosystems analysis and environmental planning.

**ENHS 781 - Occupational Ergonomics II (3 Credits)**

Literature reviews and applications in evaluation of hazards and design of ergonomic interventions including human factors in information processing, design of displays and controls, vibration, macroergonomics, fatigue, and shiftwork.

**Prerequisites:** ENHS 681

**ENHS 787 - Analytical Concepts for Environmental Health Sciences (3 Credits)**

Physical and chemical principles of environmental qualitative and quantitative analysis with emphasis on atmospheric, aquatic, and terrestrial samples. Includes use and limitations of instrumental techniques, sampling strategies, data management and reduction, and quality assurance programs.

**ENHS 788 - Concepts of Hazardous Materials Management I (3 Credits)**

Chemical and physical principles of multimedia contaminant transport, environmental effects of hazardous materials, statutes and regulations classification, treatment and disposal of hazardous materials.

**ENHS 789 - Concepts of Hazardous Materials Management II (3 Credits)**

Chemical and physical properties of hazardous materials; use and storage; disposal options; transportation requirements; site safety considerations; management systems involving hazardous materials.

**Prerequisites:** ENHS 788

**ENHS 790 - Independent Study (1-6 Credits)****ENHS 793 - Special Topics in Environmental Health Sciences (1-6 Credits)**

Content varies by title. Course may be repeated for a total of 6 credit hours.

**ENHS 794 - Introduction to Environmental Science Research (3 Credits)**

The course is intended to develop theoretical and practical knowledge in environmental science research. The learning formats will permit focus on areas of interest as a means to develop the research skills for later projects. Guided by focus, students may work in the laboratory, field, and/or use existing data.

**ENHS 795 - Issues in Coastal Environmental Health (3 Credits)**

Problems associated with coastal population growth and development. Emphasis is on the working group approach to ameliorating impacts on ecosystem and human health.

**ENHS 796 - Introduction to Nanoanalytics (3 Credits)**

Laboratory based course aimed at developing theoretical and practical knowledge in regards to nanoscience in toxicology and in the environment. Students will perform nanoparticle syntheses, characterization, fate and behavior studies or toxicology exposures. Learning formats will permit focus on areas of interest aimed at developing research skills.

**ENHS 797 - Global Environmental Health and Food Security (3 Credits)**

Global environmental health with a focus on food security in developing nations, including crop responses to warming, soil changes, more variable precipitation inputs and expanding geographical range of pests.

**ENHS 798 - Public Health Practice (1-6 Credits)**

Performance of a limited work or service project in a public need setting, pursuit of planned learning objectives related to previously identified aspects of the student's chosen role. Self-monitoring and regular seminars focusing on learning accomplishments.

**Prerequisites:** 9-10 hours of specified courses including BIOS 700, EPID 700.

**ENHS 799 - Thesis Preparation (1-9 Credits)****ENHS 860 - Environmental Radiation Surveillance (4 Credits)**

Technical coverage relevant to a practical evaluation of radiation sources and contaminants in the environment.

**Prerequisites:** ENHS 773.

**ENHS 861 - Aerosol Science (3 Credits)**

Physical and chemical principles applied to the behavior and properties of particles suspended in air. Course covers motion under applied forces, electrical properties, diffusion, removal from gas, cloud dynamics, and optical properties.

**ENHS 862 - Special Research Topics in Environmental Health Sciences (3 Credits)**

Discussion and/or laboratory participation involving techniques used in multidisciplinary research areas of environmental health sciences that have not been covered by other courses. May be repeated for credit on different topics.

**Prerequisites:** BIOS 700, EPID 700, ENHS 660.

**ENHS 863 - Advanced Topics in Environmental Planning (3 Credits)**

Detailed analyses of techniques, especially computer simulation modeling, used in environmental assessment and planning. Emphasis will be on the prediction of the ecological effects of development projects. Students will collectively construct a simulation model for the purpose of environmental assessment.

**Prerequisites:** ENHS 767, ENHS 775.

**ENHS 864 - Advanced Graduate Seminar (3 Credits)**

Seminar presentation and group discussion by students, faculty, and guest speakers on current topics in environmental health sciences. May be repeated for credit.

**Prerequisites:** Complete at least two semesters in environmental health sciences and courses to include ENHS 660, ENHS 765.

**ENHS 880 - Ethics & Research Prep (1 Credit)**

Overview of skills and standards, including ethics and research preparation, for Environmental Health Sciences doctoral students.

**ENHS 899 - Dissertation Preparation (1-12 Credits)**

**Prerequisite:** one full year (18 hrs) of graduate study beyond the master's level.

# Epidemiology (EPID)

**EPID 594 - Special Topics in Epidemiology (1-6 Credits)**

This course will introduce epidemiologic concepts and methods using cases studies examining current global health challenges. Students will gain an understanding of the role of epidemiology in understanding the distribution of disease and risk factors, and developing, implementing and evaluating public health interventions globally.

**EPID 661 - Parasitology (4 Credits)**

Parasites of biological, economic, and public health importance. Three lecture and three laboratory hours per week.

**Prerequisites:** 300 level Biology course or equivalent.

**Cross-listed course:** BIOL 531, ENHS 661

**EPID 700 - Introduction to Epidemiology (3 Credits)**

Principles of epidemiology with examples of selected health problems. Health status of populations and conceptual tools for translating epidemiologic findings into public health action. May not be used as part of a degree program in epidemiology or biostatistics.

**EPID 701 - Concepts and Methods of Epidemiology (3 Credits)**

Conceptual foundation of epidemiologic research, quantitative methods, and epidemiologic study design. Intended for those who will be involved in epidemiologic research.

**Prerequisite or Corequisite:** BIOS 701.

**EPID 707 - Ethical Issues in Health Care and Research (3 Credits)**

The ethical dimensions of decision making in health care delivery, administration and epidemiologic research. Provides ethical foundations for discussion of topics in health-related research and practice.

**Cross-listed course:** HSPM 707

**EPID 711 - Epidemiologic Research Methods (3 Credits)**

Theoretical and practical aspects of epidemiologic research methods.

**Prerequisites:** EPID 700

**EPID 720 - Comprehensive Microbiology (6 Credits)**

**Prerequisites:** consent of the instructor.

**EPID 721 - Clinical and Population Research Protocol Development and Implementation (2 Credits)**

The purpose of this course is to develop applied research skills related to the development of appropriate data collection protocols for a given public health issue and context.

**EPID 722 - Scientific Writing and Appraisal of Epidemiologic Studies (2 Credits)**

This course will familiarize students with techniques used to critically assess, interpret, evaluate, and synthesize epidemiologic literature. Students will be introduced to research databases, reference management software, reporting guidelines, and methods for systematic reviews. Students will learn how to effectively communicate research finding via manuscript and oral or poster format.

**Prerequisites:** EPID 700, EPID 701 or PUBH 725.

**EPID 725 - Biologic Basis of Public Health (3 Credits)**

Survey of the biology of human disease processes at cellular, tissue and body system levels: application of biological principles to contemporary public health problems.

**EPID 730 - Public Health Surveillance Systems (3 Credits)**

Introduction to the concepts, implementation, and evaluation of surveillance systems to monitor the health of human populations.

**Prerequisites:** EPID 701, PUBH 725, or equivalent course

**EPID 741 - Intermediate Epidemiologic Methods (3 Credits)**

Application of epidemiologic methods to current health problems through analysis of secondary data. Strategies for investigating etiologic hypotheses, assessment and control of confounding.

**Prerequisites:** EPID 701, PUBH 725, or equivalent.

**Prerequisite or Corequisite:** BIOS 757, BIOS 758 and BIOS 709, BIOS 710.

**EPID 742 - Epidemiological Concepts in Selected Disease or Health Conditions (3 Credits)**

The study of selected disease or health conditions illustrative of the interaction between host/agent/environment and the factors involved; and the application of epidemiologic methods to the investigation of such events. Two lecture and three laboratory hours per week.

**Prerequisites:** EPID 701.

**EPID 743 - Nosocomial Disease Control (3 Credits)**

Specialization in the identification of potential or existing health hazards in institutional settings of the health care system; and includes instruction in the application of scientific knowledge to the daily routines in the implementation of appropriate control behaviors. Two lecture and three laboratory hours per week.

**Prerequisites:** BIOS 700, EPID 700, EPID 742.

**EPID 744 - Cardiovascular Disease Epidemiology (3 Credits)**

Epidemiology of selected groups of cardiovascular diseases (CVD) including etiology, pathophysiology, identification and description of events of CVD, and outcomes.

**Prerequisites:** EPID 701, PUBH 725.

**EPID 745 - Seminar in Epidemiology (1-2 Credits)**

Analysis of current and prospective issues in epidemiology, including historical foundations. Includes student exploration and critical consideration of current research and unsolved problems in epidemiology.

**EPID 746 - Cancer Epidemiology (3 Credits)**

Epidemiology of selected cancers in humans, including etiology, pathophysiology, identification and description of events of cancer and outcomes.

**Prerequisites:** EPID 700.

**EPID 747 - Environmental Epidemiology (3 Credits)**

Emphasis on the epidemiology of selected environmental factors which may affect human health including the identification of health hazards and methods of investigation. Two lecture and three laboratory hours per week.

**Prerequisites:** EPID 700, BIOS 700.

**EPID 748 - Epidemiologic Evaluation of Preventive and Personal Health Care (3 Credits)**

Emphasis is on the use of epidemiologic methods and principles in the selection, design, and implementation of evaluation strategies in preventive and personal health service practice areas. Current models and strategies of evaluation appropriate to public health practice will be analyzed and compared. The student is expected to develop and implement an evaluation design. Two lecture and three laboratory hours per week.

**Prerequisites:** EPID 700, BIOS 700.

**EPID 749 - Infectious Diseases Epidemiology (3 Credits)**

Emphasis on epidemiological principles and methods basic to investigation, prevention and control of a variety of bacterial, viral, parasitic, and fungal diseases of public health importance.

**Prerequisites:** EPID 700 and BIOS 700.

**EPID 750 - Methods in Infectious Disease Epidemiology (3 Credits)**

Quantitative methods for the study of infectious disease dynamics, including study design and analysis, mathematical modeling, computer simulation, and phylogenetic inference.

**Prerequisites:** EPID 741 and EPID 749.

**EPID 751 - Sexually Transmitted Diseases: Their Epidemiology and Control (3 Credits)**

A study of the epidemiology of the various sexually transmitted diseases and their complications, with emphasis on their prevention and control.

**Prerequisites:** EPID 700 and BIOS 700.

**EPID 752 - Epidemiology and Control of Parasitic Diseases of Public Health Importance (3 Credits)**

Study of major parasitic diseases of public health importance. Emphasis on epidemiologic principles and patterns of human morbidity and mortality. Analyzes and evaluates various approaches in prevention and control programs.

**Prerequisites:** EPID 700, BIOS 700, and ENHS 661.

**EPID 753 - AIDS: Epidemiology and Control (3 Credits)**

A study of the epidemiology of Acquired Immunodeficiency Syndrome (AIDS) and its various implications and issues with emphasis on its prevention and control.

**EPID 754 - AIDS Seminar (1 Credit)**

Critical analysis of current scientific literature on various aspects and issues on Acquired Immunodeficiency Syndrome (AIDS).

**EPID 755 - Emerging Infectious Diseases: Epidemiology and Pathobiology (3 Credits)**

Principles and factors in emerging infectious diseases with emphasis on epidemiology, pathobiology, prevention, and control.

**Prerequisites:** EPID 749.

**EPID 757 - Epidemiologic Applications to Occupational Health (3 Credits)**

Introduction to clinical and epidemiologic aspects of occupational health and recognition and prevention of occupational diseases and injury. Epidemiologic applications to occupational health are highlighted and stressed, including design and implementation.

**Prerequisites:** EPID 700 or EPID 701.

**EPID 758 - Application of Epidemiology in Public Health (3 Credits)**

The course consists of the development of research skills in epidemiology in the context of public health.

**Prerequisites:** EPID 701, EPID 741.

**EPID 760 - Epidemiological Methods in Clinical Trials (3 Credits)**

Fundamental and practical issues related to the design, conduct, analysis, and interpretation of results of clinical trials.

**Prerequisites:** EPID 700, BIOS 700, EPID 741.

**EPID 763 - Nutritional Epidemiology (3 Credits)**

Covers methodology for investigating nutrition's role in health, including nutritional assessment and the design and interpretation of research studies. Substantive issues emphasize major public health concerns of the 21st century.

**Prerequisites:** EPID 701, PUBH 725, or equivalent.

**EPID 765 - Reproductive and Perinatal Epidemiology (3 Credits)**

Epidemiology of reproductive and perinatal health with emphasis on current research, controversial issues and methodological approaches.

**Prerequisites:** EPID 701, PUBH 725, or equivalent course, BIOS 701 .

**EPID 767 - GIS and Public Health Applications (3 Credits)**

Principles and application of basic and intermediate-level GIS technologies in public health practice and research.

**EPID 768 - Psychiatric Epidemiology (3 Credits)**

Methodologic issues in the epidemiologic study of psychiatric disorder, the epidemiology of mayor psychiatric outcomes, and issues in the study of special populations.

**Prerequisites:** EPID 701, PUBH 725, or equivalent course.

**EPID 770 - Social Epidemiology (3 Credits)**

Influence of social factors and the distribution of those factors on patterns of health and disease. Including individual-level examinations of the role of social determinants in producing health, as well as more macro-level examinations of patterns of social disparities in health status.

**Prerequisites:** EPID 701, PUBH 725, or equivalent course.

**EPID 777 - Genetic and Epigenetic Epidemiology (3 Credits)**

An introduction to genetic and epigenetic epidemiology and application of epidemiological tools, including statistical analyses, to the study of the genome and the epigenome in human populations.

**EPID 785 - Laboratory Practice in Clinical Microbiology (3-6 Credits)**

Laboratory practice in the subdisciplines of clinical microbiology. May be repeated for a total of 18 hours.

**Prerequisites:** EPID 700, EPID 742, BIOS 700, MBIM 720.

**EPID 788 - Practical Methods for Secondary Data Analysis (3 Credits)**

Introduction to data sources and methods commonly used by epidemiologists and health analysts in state or federal health departments and research settings. Methods include data management and analysis using SAS, data interpretation, survey designs, and innovative record linkages. Instructor reserves the right to waive course requirements.

**Prerequisites:** BIOS 700 BIOS 701; EPID 700 EPID 701; BIOS 757 BIOS 758, BIOS 754.

**Prerequisite or Corequisite:** EPID 741 or other equivalent research methods class.

**EPID 790 - Independent Study (1-6 Credits)**

Directed research on a topic to be developed by M.P.H. or M.S.P.H. student and instructor. May be repeated.

**EPID 794 - Selected Topics in Epidemiology (1-6 Credits)**

Content varies by title. Course may be repeated for a total of 6 credit hours.

**EPID 796 - Integrated Learning Experience (1 Credit)**

Demonstrate synthesis of MPH foundational and concentration competencies to address a public health issue in the form of a high-quality written product.

**EPID 798 - Epidemiology Applied Practicum (2 Credits)**

Apply and test public health concepts, theories, and analytical tools learned in the classroom to real-world public health issues outside of the classroom in any one of a variety of settings.

**Prerequisites:** PUBH 725, PUBH 726, PUBH 730, and PUBH 735.

**EPID 799 - Thesis Preparation (1-9 Credits)****EPID 800 - Advanced Methodological Theory in Epidemiology (3 Credits)**

Advanced epidemiologic methods in the design of epidemiologic studies, with emphasis on causal inference. Theories and frameworks of causation and interactions between causes and graphical visualization tools.

**Prerequisites:** EPID 741.

**EPID 801 - Advanced Analytic Methods in Epidemiology (3 Credits)**

Extension of research design and development issues with focus on grant writing.

**Prerequisites:** EPID 800.

**EPID 802 - Grant Writing for Epidemiologists (3 Credits)**

Extension of research design and development issues with focus on writing a major research grant application.

**Prerequisites:** EPID 741.

**EPID 810 - Seminar in the Epidemiology of Trauma (3 Credits)**

Seminar presentation and group discussion on the major issues in the study of trauma associated with accidents, injuries, or violence.

**Prerequisites:** EPID 741, BIOS 759.

**EPID 820 - Seminar in the Epidemiology of Health Effects of Physical Activity (3 Credits)**

Seminar presentation and group discussion on the major issues in the study of physical activity and exercise and their impact on health.

**Prerequisites:** EPID 700.

**EPID 830 - Seminar in the Epidemiology of Aging (3 Credits)**

Exploration in depth of theories, current health problems, research, and methodological issues in the epidemiology of aging.

**EPID 844 - Advanced Cardiovascular Disease Epidemiology: Evidence Synthesis and Evaluation (3 Credits)**

Epidemiology of cardiovascular disease and its risk factors, with a focus on evidence synthesis through systematic reviews.

**Prerequisites:** EPID 701.

**EPID 845 - Doctoral Seminar (1-3 Credits)**

May be repeated for credit.

**Prerequisites:** complete at least one semester of course work.

**EPID 847 - Advanced Environmental Factors and Human Health (3 Credits)**

Advanced methods encompassing the investigation of environmental factors and how they affect human health. Emphasis on reading and interpreting the peer reviewed scientific literature and developing a systematic literature review and grant proposal.

**Prerequisites:** EPID 700 EPID 701 and BIOS 700 BIOS 701.

**EPID 865 - Methods in Reproductive & Perinatal Epidemiology (3 Credits)**

This course provides an overview of reproductive and perinatal epidemiology and the applications in the field of Maternal and Child Health. It covers the current and emerging topics in this area. Designed for doctoral students with interests in conducting research related to reproductive and perinatal epidemiology.

**Prerequisites:** EPID 700 EPID 701 and BIOS 700 BIOS 701.

**EPID 867 - Geographic Information Systems for Public Health Research (3 Credits)**

Principles and application of basic and intermediate-level GIS technologies in public health research. Designed for doctoral students with interest in conducting health-related research using GIS methods.

**EPID 869 - Clinical Effectiveness (3 Credits)**

Clinical Effectiveness is a broad term that includes clinical trials and interventional study designs. The purpose of this course is to develop skills in the application of epidemiologic methods to clinical effectiveness research, by conceptualizing and designing an intervention study. Students will actively participate in teaching and learning through in-class activities and developing a protocol to test an intervention in a clinical trial design.

**Prerequisites:** EPID 701, PUBH 725, or equivalent course.

**EPID 877 - Advanced Methods and Concepts in Nutrition Research (3 Credits)**

Advanced Methods and Concepts in Nutrition Research addresses aspects of nutrition ranging from nutritional biochemistry to dietetics and community nutrition education. It covers disciplinary breadth encompassing the study of effects of dietary exposures on inflammation, epigenetics, immune function, psychological states and traits, physiologic states, and pathophysiologic processes, including carcinogenesis.

**Prerequisites:** EPID 763.

**EPID 890 - Independent Study (1-3 Credits)**

Directed research on a topic to be developed by doctoral student and instructor. May be repeated.

**EPID 894 - Selected Topics in Epidemiology for Doctoral Students (1-3 Credits)**

Variable credit doctoral level epidemiology course (1-3). The specific epidemiologic topic to be taught is determined by the course instructor in consultation with the department.

**EPID 899 - Dissertation Preparation (1-12 Credits)**

Prerequisite: one full year (18 hrs) of graduate study beyond the master's level.

## Exceptional Children (EDEX)

**EDEX 523 - Introduction to Exceptional Children (3 Credits)**

Overview of the field of education for exceptional children. Basic course for those entering the field of special education.

**EDEX 525 - The Nature of Orthopedic and Special Health Problems (3 Credits)**

Symptomatology, behavioral manifestations, and resources for care and treatment of orthopedic conditions and other types of health problems in children and youth.

**EDEX 530 - Introduction to Early Childhood Special Education (3 Credits)**

An overview of early childhood special education for young children with disabilities and their families.

**EDEX 531 - Nature of Students with Specific Learning Disabilities (3 Credits)**

Children with average/above average intelligence and specific learning impairments; diagnostic and remedial techniques. (Offered by both the College of Education and the Department of Psychology).

**Prerequisites:** EDEX 523 or PSYC 528.

**Cross-listed course:** PSYC 529

**EDEX 540 - Nature and Needs of the Gifted and Talented (3 Credits)**

Types and characteristics of the gifted and talented.

**Prerequisites:** EDEX 523 or PSYC 518.

**EDEX 580 - Direct Instruction in Reading for At-Risk Learners (3 Credits)**

A study of the skills and knowledge required to implement direct instruction procedures when teaching reading, with opportunity for application of skills. Research and theoretical foundations will also be evaluated.

**Prerequisites:** EDEX 523.

**EDEX 581 - Teaching Reading in the Content Area to Adolescents with Reading Disabilities (3 Credits)**

Research, theory, and instructional practices related to providing reading instruction in content areas for youth with disabilities, with a focus on developing disciplinary literacy in inclusive settings.

**EDEX 582 - Teaching Mathematics to Students at Risk (3 Credits)**

Research, theory, and instructional practices related to mathematical readiness and instruction for children and youth at risk for mathematical difficulties.

**Prerequisites:** EDEX 523 or EDEX 491.

**EDEX 610 - Instruction of Students with Severe and Multiple Disabilities (3 Credits)**

Data-based instruction for teaching students with significant disabilities: task and developmental analysis, individualizing instruction, and preparing and implementing instructional programs.

**Prerequisites:** EDEX 523 or PSYC 528.

**EDEX 615 - Curriculum and Language Instruction for Students with Severe and Multiple Disabilities (3 Credits)**

Design, development, adaptation, and implementation of curriculum, language and communication instruction for students with significant disabilities.

**Prerequisites:** EDEX 523 or PSYC 528.

**EDEX 616 - Instruction of Students with Specific Learning Disabilities (3 Credits)**

Theory and application of current evidence-based procedures for teaching children with specific learning disabilities.

**Prerequisites:** EDEX 523, EDEX 531, or EDEX 632 or equivalent.

**EDEX 619 - Nature of Students with Intellectual Disabilities (3 Credits)**

Nature and causes of intellectual disabilities, behavior, and potentialities of persons with intellectual disabilities.

**Prerequisites:** a course in the areas of child psychology or child development.

**EDEX 630 - Educational Procedures for Early Childhood Special Education (3 Credits)**

An initial course in educational procedures focusing on intervention strategies for serving young children with disabilities in inclusive environments.

**Prerequisites:** EDEX 530.

**EDEX 632 - Nature of Students with Emotional and Behavior Disabilities (3 Credits)**

Characteristics, etiology, and major theoretical models for children experiencing emotional and/or behavioral problems in school; special education curriculum, programming alternatives, assessment, and issues concerning this population.

**Prerequisites:** EDEX 523 or PSYC 528.

**EDEX 640 - Managing Problem Behavior in the Classroom (3 Credits)**

The development of a workable approach to classroom management through an examination of a research-based synthesis of current knowledge in classroom and behavior management.

**EDEX 643 - Social/Emotional Development and Guidance for Young Children with Developmental Delays (3 Credits)**

DEC Practices in Early Childhood Special Education, Assessing and Monitoring Children's Challenging Behavior, and Preventive Strategies for Challenging Behavior.

**Prerequisites:** EDEX 523.

**EDEX 646 - Advanced Procedures for Assessment in Early Childhood Special Education (ECSE) (3 Credits)**

Advanced assessment methods for serving young children with and without developmental delays and their families.

**Prerequisites:** EDEX 530.

**EDEX 670 - Nature of Students with Multi-categorical Disabilities (3 Credits)**

Personal, social, and educational implications of a mild to moderate multi-categorical disability (emotional/behavioral, intellectual, and learning disabilities) throughout the lifespan of an individual.

**Prerequisites:** C or better in EDEX 523.

**EDEX 671 - Instruction of Students with Multi-categorical Disabilities (3 Credits)**

Theory and application of current evidence-based procedures for teaching children with mild to moderate multi-categorical disabilities.

**Prerequisite or Corequisite:** C or better in EDEX 670.

**EDEX 682 - Introduction to Braille (3 Credits)**

Basic course for mastery of the literary braille code. Transcription of instructional materials in literary braille.

**EDEX 685 - Nature of Students with Visual Disabilities (3 Credits)**

The psychological, social, and educational implications for persons with visual disabilities; definitions, incidence, characteristics of, and rehabilitative and educational programs for persons with visual disabilities.

**EDEX 686 - Introduction to Deafness (3 Credits)**

Educational implications of philosophy, theory, and research about deafness.

**Prerequisites:** EDEX 523 or equivalent.

**EDEX 687 - Communication Systems for Students who are Deaf or Hearing Impaired (3 Credits)**

Knowledge and basic skills of finger-spelling and sign forms for communication.

**EDEX 690 - Independent Study (1-3 Credits)****EDEX 691 - Collaborative Partnerships in PK-12 Special Education (3 Credits)**

Communication and collaboration skills and strategies for creating and maintaining effective partnerships with a variety of stakeholders involved in educating students with disabilities in PK-12 settings.

**Prerequisites:** EDEX 523 or PSYC 528.

**EDEX 692 - Partnerships in Early Childhood Special Education (3 Credits)**

Strategies for collaborating and communicating with families and other professionals as members of multidisciplinary teams in Early Intervention and Early childhood Special Education.

**Prerequisites:** EDEX 523.

**EDEX 701 - Nature of Students with Autism (3 Credits)**

Definitions, characteristics, and causes of autism; educational models, implications, and programming.

**Prerequisites:** EDEX 523 or equivalent.

**EDEX 710 - Legal Issues in Special Education (3 Credits)**

Analysis of legislation, litigation, and administrative rulings related to special education. Emphasis on the development of legally sound policies and procedures to ensure an appropriate education for students with disabilities.

**EDEX 712 - Instruction of Students with Intellectual Disabilities (3 Credits)**

Methods and materials to teach students with intellectual disabilities.

**Prerequisites:** EDEX 523 or PSYC 528.

**EDEX 713 - Practicum in Instruction of Exceptional Children I (3 Credits)**

Experience in the observation of and participation in the education of children with disabilities in settings appropriate to student's specialization. Includes weekly seminar.

**Prerequisites:** EDEX 523.

**EDEX 714B - Practicum in Instruction of Exceptional Children II: B (Behavioral Disorders) (3 Credits)**

Experience in the direct teaching of children with disabilities in settings appropriate to student's area of specialization. Includes weekly seminar.

**EDEX 714C - Practicum in Instruction of Exceptional Children II: C (Multicategorical) (3 Credits)**

Experience and seminar in the direct teaching of students with disabilities in settings appropriate to student's area of specialization.

**EDEX 714E - Practicum in Instruction of Exceptional Children II: E (Early Childhood Special Education) (3 Credits)**

Experience in the direct teaching of children with disabilities in settings appropriate to student's area of specialization. Includes weekly seminar.

**EDEX 714H - Practicum in Instruction of Exceptional Children II: H (Hearing Impairments) (3 Credits)**

Experience in the direct teaching of children with disabilities in settings appropriate to student's area of specialization. Includes weekly seminar.

**EDEX 714L - Practicum in Instruction of Exceptional Children II: L (Learning Disabilities) (3 Credits)**

Experience in the direct teaching of children with disabilities in settings appropriate to student's area of specialization. Includes weekly seminar.



**EDEX 714M - Practicum in Instruction of Exceptional Children II: ID (Intellectual Disabilities) (3 Credits)**

Experience in the direct teaching of children with disabilities in settings appropriate to student's area of specialization. Includes weekly seminar.

**EDEX 714S - Practicum in Instruction of Exceptional Children II: S (Severe/Multiple) (3 Credits)**

Experience in the direct teaching of children with disabilities in settings appropriate to student's area of specialization. Includes weekly seminar.

**EDEX 715 - Applied Behavior Analysis in Special Education (3 Credits)**

Application of principles of behavior to understanding and changing socially important behavior of students with disabilities.

**EDEX 716 - Functional Behavioral Assessment and Behavior Interventions (3 Credits)**

Identification and assessment of problem behavior, design and implementation of positive behavior intervention plans.

**Prerequisites:** EDEX 610 or EDEX 640 or equivalent.

**EDEX 717 - Ethics in Behavior Analysis (3 Credits)**

Legal, ethical, and professional issues in behavior analysis.

**Prerequisites:** EDEX 610 or EDEX 715.

**EDEX 718 - Intensive Practicum in Applied Behavior Analysis (3-6 Credits)**

Principles of applied behavior analysis in the design, delivery, and evaluation of instruction of children and adults in school, home, and community settings. Students pursuing Board Certification in Behavior Analysis.

**Prerequisite or Corequisite:** EDEX 610, EDEX 715.

**EDEX 719 - Advanced Applied Behavior Analysis (3 Credits)**

Advanced concepts and principles in applied behavior analysis.

**Prerequisites:** EDEX 715, EDEX 809.

**EDEX 720 - Applied Research Experience in Special Education (1-3 Credits)**

Supervised student-led research experience in a school, state agency, department or bureau of the University, or cooperating organization or institution.

**EDEX 726 - Seminar in Special Education for Student Teachers (3 Credits)**

Synthesis of the knowledge and skills acquired through course work and field experiences during special education teacher preparation.

**Corequisite:** EDEX 796.

**EDEX 740 - Cognitive and Affective Aspects of the Gifted and Talented (3 Credits)**

The relationship of cognitive and affective factors to learning in the gifted and talented, including the self-concepts of the learner and the teacher.

**Prerequisites:** EDEX 523 and EDEX 540.

**EDEX 742 - Educational Procedures for the Gifted and Talented (3 Credits)**

Emphasis on methodologies and materials involved in the teaching of gifted and talented children and youth.

**Prerequisites:** EDEX 540.

**EDEX 750 - Technology and Exceptional Populations (3 Credits)**

The application of microcomputers and other technology in services for special populations. Case management, assessment, and instructional uses of technology are included.

**Cross-listed course:** RHAB 750

**EDEX 760 - Secondary Transition Assessment, Planning, and Program Development (3 Credits)**

Foundation for understanding and using assessment information in the transition process for youth with disabilities. Specifically, students will gain knowledge in the multiple domains of transition assessment (e.g., vocational, academic, independent living, self-determination). Students will also develop and determine appropriate transition plans, programs, services, and instruction.

**Prerequisites:** EDEX 523 or equivalent introductory course in special education.

**EDEX 761 - Promoting Student Outcomes Through Collaboration (3 Credits)**

Concepts, tools, and strategies essential for effective collaboration within and across systems supporting transition-age youth with disabilities. Best practices on how to partner with agencies, schools, and employers which provide students with support and advocacy as they transition to post-school life.

**Prerequisites:** EDEX 523 or equivalent introductory course in special education.

**EDEX 762 - Career Preparation and Employment for Individuals with Disabilities (3 Credits)**

Specific vocational practices and information used to assist persons with disabilities as they begin to make career decisions and transition to the workforce.

**Prerequisites:** EDEX 523.

**EDEX 763 - Integrated Secondary Curriculum, Instructional Strategies, and Transition Programs (3 Credits)**

Developing and selecting curricula that meet students' transition needs and align with state academic standards. Students will evaluate and implement evidence-based practices as well as develop lessons and instructional units that promote the skills necessary for transition to adult life.

**Prerequisites:** EDEX 523.

**EDEX 770 - Methods and Materials for Students with Low Vision (3 Credits)**

Current educational methods and materials for students with partial sight including educational needs, assessment of visual functioning, and vision utilization. Educational plannings and instructional strategies will be considered.

**Prerequisites:** EDEX 685 and EDEX 773.

**EDEX 773 - Anatomy, Physiology, and Pathology of the Eye (3 Credits)**

Structure, function, and abnormalities of the eye stressing educational implications. Special attention is paid to interpretation of reports from eye specialists, theory and use of low vision aids, and vision screening techniques in schools.

**EDEX 774 - Educational Procedures for Students with Visual Disabilities (3 Credits)**

Current educational procedures for students who are blind or with partial sight, including programming alternatives, curriculum adaptations and additions, use of specialized equipment, instructional strategies, and educational planning.

**Prerequisites:** EDEX 682 and EDEX 773.

**EDEX 775 - Orientation and Mobility for the Visually Handicapped (3 Credits)**

Lectures, discussions, observation, and practice in teaching pre-care skills, orientation and mobility, and activities of daily living to visually handicapped individuals. Presented with reference to the responsibility of the teacher of the visually handicapped.

**EDEX 780 - Speech Reading and Auditory Training I (3 Credits)**

A study of the use of acoustic amplification and speech reading in developing language skills for deaf and hard-of-hearing children and adults. Theories, methods, and systems of speech reading and use of hearing aids and other amplification equipment are studied and analyzed.

**EDEX 781 - Speech Reading and Auditory Training II (3 Credits)**

Advanced study in methods of instruction for the hard-of-hearing in the principles and techniques of lip reading and auditory training.

**Prerequisites:** EDEX 780 or equivalent.

**EDEX 784 - Instruction of Students with Emotional and Behavioral Disorders (3 Credits)**

Application of current educational procedures for students with emotional and behavioral disorders including alternative administrative arrangements, education strategies, and sources of materials.

**Prerequisites:** EDEX 632.

**EDEX 785 - Language Impairment, Disabilities, and Augmentative Communication (3 Credits)**

The study of language disorders in students with disabilities. Focus on defining communicative acts and implementation of alternative and augmentative communication and assistive technology.

**EDEX 790 - Introduction to Assessment in Special Education (3 Credits)**

Concepts and methods of assessment in special education with emphasis on administering, scoring, and interpreting standardized education tests.

**EDEX 791 - Procedures in Special Education Assessment and Intervention I (3 Credits)**

Lectures and practicum experiences emphasizing the application of informal educational assessment and intervention planning procedures.

Individually supervised case project.

**Prerequisites:** EDEX 790.

**EDEX 792 - Issues in Special Education (3 Credits)**

Critical reviews of research related to key issues in special education. A research paper is required.

**Prerequisites:** EDRM 700, EDEX 790, EDEX 640, 1 methods course.

**EDEX 793 - Seminar in Aural Rehabilitation (3 Credits)**

Experimental study of various aspects of lip-reading and auditory training.

**EDEX 794 - Foundations of Secondary Transition Planning and Supports for Individuals with Disabilities (3 Credits)**

Orientation to transition planning and vocational training as integrated components of secondary level education curriculum for students with disabilities.

**EDEX 795 - Assessment in Early Childhood Special Education (3 Credits)**

Assessment instruments, techniques, and procedures for non-discriminatory educational assessment of children with disabilities birth-eight years.

**EDEX 796B - Directed Teaching in Special Education (12 Credits)**

Application of effective teaching techniques and organization of instructional settings for exceptional learners in selected areas of specialization. B (Behavioral Disorders), L (Learning Disabilities), ID (Intellectual Disabilities), S (Severe/Multiple)

**Prerequisites:** Admission to the Professional Teacher Certification Program and completion of the special education core

**EDEX 796C - Directed Teaching in Special Education: C (Multicategorical) (12 Credits)**

Application of effective teaching techniques and organization of instructional settings for exceptional learners in selected areas of specialization.

**Prerequisites:** Admission to the Professional Teacher Certification Program and completion of the special education core.

**Corequisite:** EDEX 726.

**EDEX 796I - Directed Teaching in Special Education (12 Credits)**

Application of effective teaching techniques and organization of instructional settings for exceptional learners in selected areas of specialization. B (Behavioral Disorders), L (Learning Disabilities), ID (Intellectual Disabilities), S (Severe/Multiple)

**Prerequisites:** Admission to the Professional Teacher Certification Program and completion of the special education core

**EDEX 796L - Directed Teaching in Special Education (12 Credits)**

Application of effective teaching techniques and organization of instructional settings for exceptional learners in selected areas of specialization. B (Behavioral Disorders), L (Learning Disabilities), ID (Intellectual Disabilities), S (Severe/Multiple)

**Prerequisites:** Admission to the Professional Teacher Certification Program and completion of the special education core

**EDEX 796S - Directed Teaching in Special Education (12 Credits)**

Application of effective teaching techniques and organization of instructional settings for exceptional learners in selected areas of specialization. B (Behavioral Disorders), L (Learning Disabilities), ID (Intellectual Disabilities), S (Severe/Multiple)

**Prerequisites:** Admission to the Professional Teacher Certification Program and completion of the special education core

**EDEX 799 - Thesis Preparation (1-9 Credits)****EDEX 808 - Procedures in Special Education Assessment and Intervention II (3 Credits)**

Educational assessment in clinical and school settings. Integration of assessment procedures including interviewing, observation, testing, consultation, and report writing. Individually supervised projects.

**Prerequisites:** EDEX 790 and EDEX 791.

**EDEX 809 - Single-Case Research Designs in Special Education (3 Credits)**

Applications of single-case study designs to the analysis of student behavior in special education, with emphasis on visual display of data and interpretation of research results.

**Prerequisites:** EDEX 715.

**EDEX 810 - Advanced Single-Case Research (3 Credits)**

Advanced concepts in single-case research, including the identification of evidence-based practices in special education through systematic reviews and meta-analyses.

**Prerequisites:** EDEX 809.

**EDEX 815 - Coordination of Programs for Exceptional Children (3 Credits)**

A study of administrative and supervisory issues in the operation of school programs for exceptional children; alternate instructional models and program organizations, budgeting and funding practices, certification requirements, and other operational factors are emphasized.

**Prerequisites:** EDEX 523 or equivalent.

**EDEX 816 - Special Problems in Education of Students with Emotional and Behavioral Disabilities (3 Credits)**

A critical review of research in the identification and education of children and adolescents with emotional and behavioral disabilities. A research project is required.

**Prerequisites:** PSYC 510 or equivalent and EDRM 700.

**EDEX 817 - Advanced Educational Problems in Learning Disabilities (3 Credits)**

Exploration of current issues, problems, and trends in the education of children with learning disabilities.

**Prerequisites:** PSYC 529 and EDEX 616 or their equivalents.

**EDEX 890 - Independent Study (3 Credits)****EDEX 891 - Advanced Educational Procedures for Exceptional Children (3 Credits)**

Procedures to be used in special education classrooms, emphasis on curriculum, methods, and materials for learners with disabilities.

**Prerequisites:** vary by specialization.

**EDEX 892 - Internship in Exceptional Children (3-6 Credits)**

Supervised field-based experiences related to special education administration, pedagogy, and university teaching.

**Prerequisites:** EDEX 891.

**EDEX 892A - Internship in Exceptional Children: A (Administration) (3-6 Credits)**

Supervised field-based experiences related to special education administration, pedagogy, and university teaching.

**Prerequisites:** EDEX 891 and consent of instructor

**EDEX 892P - Internship in Exceptional Children: P (Pedagogy) (3-6 Credits)**

Supervised field-based experiences related to special education administration, pedagogy, and university teaching.

**Prerequisites:** EDEX 891 and consent of instructor

**EDEX 892T - Internship in Exceptional Children: T (Teaching Internship) (3-6 Credits)**

Supervised field-based experiences related to special education administration, pedagogy, and university teaching.

**Prerequisites:** EDEX 891 and consent of instructor

**EDEX 893 - Advanced Topics in Exceptional Children (3 Credits)**

Selected topics in special education. With consent of advisor, may be repeated for credit as topics change.

**Prerequisites:** EDEX 891.

**EDEX 894 - Research Seminar in Special Education (3 Credits)**

Review and analysis of contemporary research topics in special education. May be repeated for up to 12 credit hours as topics vary.

**EDEX 899 - Dissertation Preparation (1-12 Credits)**

## Exercise Science (EXSC)

**EXSC 507 - Exercise, Sport, and Nutrition (3 Credits)**

The relationship between exercise, sport performance, and nutrient metabolism.

**Prerequisites:** EXSC 223, EXSC 224, EXSC 330, EXSC 330L.

**EXSC 531 - Clinical Exercise Physiology (3 Credits)**

Scientific bases of clinical exercise programming. The fitness instructor's role in encouraging changes in exercise behavior.

**Prerequisites:** EXSC 223, EXSC 224, EXSC 330, EXSC 330L.

**Corequisite:** EXSC 531L.

**EXSC 531L - Clinical Exercise Physiology Lab (0 Credits)**

**Prerequisite:** EXSC 223, EXSC 224, EXSC 330, EXSC 330L.

**EXSC 541 - Physiological Basis for Strength and Conditioning (3 Credits)**

Investigation on the physiological basis for strength and conditioning. Principles of strength and conditioning through lecture based learning, demonstrations, and through laboratory activities.

**Prerequisites:** C or better in EXSC 330.

**EXSC 555 - Current Topics in Exercise Science (1-3 Credits)**

Content varies by title. Course may be repeated for a total of 6 credit hours.

**EXSC 562 - Impairments of the Human Motor System (3 Credits)**

Role of motor development in the growth and development of individuals exhibiting impaired motor control.

**Prerequisites:** biology, anatomy, physiology, or the equivalent.

**EXSC 563 - Physical Activity and the Physical Dimensions of Aging (3 Credits)**

The effects of age and physical activity on physical and motor functions of elderly individuals.

**Prerequisites:** EXSC 223, EXSC 224, EXSC 351, EXSC 330, EXSC 330L.

**EXSC 585 - Women's Health and Physical Activity (3 Credits)**

Sex differences in diseases, physiological function of sex hormones, hormonal changes in a woman's life, specific women's health issues, and role of physical activity and exercise in prevention and treatment of conditions and diseases specific to women or related to sex hormones. Restricted to 30 students, Special Permission by Instructor.

**EXSC 608 - Apps, Wearables and Technology for Lifestyle Behavior Change and Weight Loss (3 Credits)**

The course will increase students' understanding of the theoretical foundations, scientific evidence and practical application of technology-assisted lifestyle interventions, with an emphasis on behavioral weight control for adults.

**Prerequisites:** C or better in EXSC 410.

**EXSC 620 - Nutrition and Immunology (3 Credits)**

Examination of the interrelationships that link human nutrition to the immune system in health and disease. Topics will include basic immunology, overview of nutritional sources, deficiencies and excesses, and the impact on public health issues such as exercise, disease and aging.

**Prerequisites:** EXSC 330.

**EXSC 626 - Cardiorespiratory Exercise Physiology (3 Credits)**

Examination of the anatomy and function of the cardiovascular and respiratory systems of the exercising human organism, including acute adjustments and chronic adaptations to the systems.

**Prerequisites:** EXSC 330.

**EXSC 666 - Cardiorespiratory Exercise Physiology (3 Credits)**

Examination of the anatomy and function of the cardiovascular and respiratory systems of the exercising human organism, including acute adjustments and chronic adaptations to the systems.

**Prerequisites:** EXSC 330.

**EXSC 669 - Skeletal Muscle Physiology: Form and Function (3 Credits)**

Skeletal muscle physiology and exercise through select laboratory experiences and discussion of related research literature.

**Prerequisites:** C or better in both EXSC 330 and EXSC 330L.

**EXSC 695 - Writing and Presenting in Research (3 Credits)**

The research process in Exercise Science through participation, presentation, and discussion of current research.

**Prerequisites:** EXSC 224.

**EXSC 700 - Physical Activity and Health: Epidemiology, Research and Practice (3 Credits)**

An introduction to exercise science with emphasis on the relationships between exercise and health for promotion of physical activity in clinical and public health settings.

**EXSC 706 - Assessment of Motor Behavior (3 Credits)**

Assessment of infant, child, adolescent, and adult motor behavior.

**EXSC 710 - Behavioral Aspects of Physical Activity (3 Credits)**

Psychosocial and behavioral factors in physical activity. Topics include mental health effects of exercise, behavior change theories applied to mental health effects of exercise, behavior change theories applied to physical activity, and physical activity determinants and interventions.

**Cross-listed course:** HPEB 713

**EXSC 723 - Genetics in Health Sciences (3 Credits)**

The part lecture and part discussion course will explore genetic research in the health sciences, with emphasis on human genetic association studies, clinical utility for personalized medicine, direct-to-consumer genetic testing, and ethical issues. Students will receive hands-on experience searching, interpreting, and summarizing genetic studies on a topic of their choice.

**EXSC 727 - Controlled Trials in Exercise Science (3 Credits)**

This course covers planning, organizing and implementing randomized controlled trials of physical activity or exercise interventions. It is primarily aimed to meet the needs of graduate students in exercise science and others in related fields.

**EXSC 731 - Mechanisms of Motor Skill Performance (3 Credits)**

A study of theories and mechanisms involved in human movement. Focus is on analysis of principles and systems of gross motor control and learning.

**EXSC 732 - Measurement of Body Composition and Associated Health Behaviors (3 Credits)**

Overview of measurement theory and measures to assess body composition and associated health behaviors (i.e., physical activity, sedentary behavior, sleep, diet).

**Prerequisites:** BIOS 700, BIOS 701, or PUBH 725; for MPH-PAPH students, EXSC 700.

**EXSC 742 - Clinical Exercise Testing (1 Credit)**

Study of the procedures involved in screening and testing persons with varying levels of functional work capacity.

**EXSC 743 - Laboratory Measurements for Exercise Testing (1 Credit)**

Biological and physiological assessment of exercise responses and adaptation.

**Prerequisites:** EXSC 742.

**EXSC 744 - Administration of Exercise Programs (1 Credit)**

Study of the procedures necessary for proper administration of exercise testing, fitness, and rehabilitation programs.

**Prerequisites:** EXSC 531.

**EXSC 754 - Community-Based Physical Activity Interventions (3 Credits)**

Role of the physical activity specialist within the community health department. Development, initiation, and evaluation of campaigns, resources, community capacity building, and coalitions to promote physical activity.

**Prerequisites:** EXSC 700 or HPEB 700.

**EXSC 755 - Special Topics in Exercise Science (3 Credits)**

A study of selected issues in exercise science. Content varies by title.

**EXSC 771 - Data Acquisition in Exercise Science (3 Credits)**

Fundamental concepts of computerized data acquisition in the exercise science laboratory.

**EXSC 775 - Neural Basis of Skilled Motor Behavior (3 Credits)**

Current and historical perspectives on the neural basis of skilled motor behavior.

**Prerequisites:** EXSC 731.

**EXSC 777 - Endocrinology of Exercise and Health (3 Credits)**

The course examines the endocrine system, its interaction with the nervous system, and how they affect human biology before, during, and after exercise. Special attention will be paid to this system's influence on the relationship between physical activity and health.

**Prerequisites:** At least one undergraduate or graduate course in statistics and molecular or cellular biology.

**EXSC 778 - Exercise and Childhood Obesity (3 Credits)**

Causes and treatment of childhood obesity with special reference to the role of exercise in prevention and early intervention.

**EXSC 779 - Exercise Physiology of Children and Youth (3 Credits)**

Principles of exercise physiology applied specifically to children and youth. Particular emphasis on physiological foundations of physical fitness and methods for teaching physical fitness concepts.

**EXSC 780 - Physiology of Exercise (3 Credits)**

Physiological responses to exercise: skeletal muscle structure and function, cardiorespiratory function, physiological determinants of exercise performance, and training adaptations. Didactic and laboratory included.

**EXSC 781 - Physiology, Exercise, and Disease (3 Credits)**

The input and response to exercise in diseased populations. Diseases to be examined include cardiovascular disease, age-related diseases, pulmonary, renal, and other conditions.

**Prerequisites:** EXSC 780.

**EXSC 782 - Mechanical Analysis of Motor Skills (4 Credits)**

Biomechanical principles underlying motor control and selected techniques used to quantify human movement.

**EXSC 783 - Research Seminar in Exercise Physiology (1-3 Credits)**

Presentation and discussion of current research topics in exercise physiology.

**EXSC 784 - Cardiovascular/Pulmonary Testing and Programming (3 Credits)**

Techniques used in exercise testing (including principles of electrocardiology) and in design and delivery of exercise programs for enhancing the health of normal and cardiopulmonary-diseased populations.

**Prerequisites:** EXSC 781.

**EXSC 785 - Advanced Exercise Physiology Laboratory (3 Credits)**

Laboratory procedures for measurement of physiological, biochemical, and molecular responses to exercise.

**Prerequisites:** EXSC 780.

**EXSC 786 - Experimental Design for Translational Laboratory Science (3 Credits)**

This course establishes the framework for experimental projects in molecular biology and physiology that impact human health: how to set up a molecular system, design experiments within that system, determine and use the correct set of controls, and ultimately how to interpret molecular data in light of human/public health.

**Prerequisites:** At least one undergraduate or graduate course in statistics and molecular or cellular biology.

**EXSC 787 - Research Methods and Design for Exercise Science (3 Credits)**

The major goal of this course is to provide an in-depth examination of: research concepts, terminology, experimental, non-experimental, and epidemiological designs, internal and external validity, methods for establishing causality investigating associations, and application of designs to test hypotheses in research of exercise science-related outcomes.

**EXSC 790 - Independent Study (1-3 Credits)**

Topics to be assigned and approved by advisor, graduate director, and department head.

**EXSC 795 - Internship in Exercise Science (3 Credits)**

Clinical practice in an applied area of exercise science. Requirements include at least 20 hours fieldwork per week with intensive supervision.

**EXSC 796 - MPH Capstone Course (2 Credits)**

This course is designed to provide students with a culminating seminar focused on the synthesis of foundational and MPH-PAPH competencies in preparing a high quality grant proposal to address a public health problem.

**Prerequisites:** PUBH 725, PUBH 726, PUBH 730, PUBH 735, B or better in EXSC 700, EXSC 710, EXSC 780.

**EXSC 797 - Public Health Practice (1-5 Credits)**

The focus of this course is the performance of a limited work or service project in an approved public need setting and the demonstration of at least 5 competencies related to previously identified aspects of the student's chosen role.

**Prerequisites:** PUBH 725, PUBH 726, PUBH 730, PUBH 735, B or better in EXSC 700, EXSC 710, EXSC 780.

**EXSC 798 - Project in Exercise Science (3 Credits)**

Independently executed project designed to expand the student's knowledge of exercise science.

**EXSC 799 - Thesis Preparation (1-9 Credits)****EXSC 801 - Ethical Conduct in Public Health Research (1 Credit)**

The course will provide an overview of ethical issues scientists encounter conducting and disseminating public health research. Topics include the history of ethics in public health, working with human participants, conflicts of interests, spin, and creating safe and healthy workplaces.

**EXSC 802 - Predoctoral Fellowship Writing Course with Special Emphasis on NIH F31 (1 Credit)**

The course is designed to enable predoctoral students to gain grant writing experience, develop into productive, independent research scientists, and to obtain mentored research training while conducting dissertation research.

**EXSC 808 - Neuro Repair - Rehabilitation (3 Credits)**

Examination of neural repair and rehabilitation from a clinical perspective.

**EXSC 831 - Mechanisms of Motor Skill Performance II (3 Credits)**

Advanced study of the theories and mechanisms of human movement and motor performance. Focus is on analysis of principles and systems regulating gross motor control and learning.

**EXSC 832 - Research Practicum in Motor Learning/Motor Performance (3 Credits)**

Scientific investigation of specific research problems in motor learning/motor performance.

**EXSC 862 - Analysis of Motor Impairments (3 Credits)**

The study of neuromuscular bases of movement and associated impairments of motor function. Current assessment and programming techniques designed to assist in remediating motor impairment will be emphasized.

**EXSC 863 - Physical Activity and the Aging Process (3 Credits)**

The study of the aging process and its effects upon the physical activity patterns of the adult. Emphasis is on the mechanisms of aging as they directly influence movement.

**EXSC 871 - Data Acquisition in Exercise Science II (3 Credits)**

Advanced techniques of interfacing data acquisition equipment to the laboratory computer.

**EXSC 880 - Myology and Exercise (3 Credits)**

Study of muscle contraction mechanics, energetics, and metabolism and the relationship of these processes to physical training, athletics, and rehabilitation.

**EXSC 881 - Advanced Cardiorespiratory Exercise Physiology (3 Credits)**

Study of mechanisms for cardiovascular and respiratory responses to acute exercise and adaptations to these systems with chronic physical activity.

**EXSC 882 - Physical Activity and Health: Epidemiology and Research Methods (3 Credits)**

An examination of physical activity/exercise habit patterns as they relate to health status. Emphasis on the chronic effects of exercise.

**EXSC 883 - Chronic Disease Rehabilitation Through Exercise (3 Credits)**

The study of the treatment of chronic diseases with special reference to exercise as a mode of therapy.

**Prerequisites:** EXSC 531 and EXSC 780 or the equivalent.

**EXSC 899 - Dissertation Preparation (1-12 Credits)**

## Film and Media Studies (FAMS)

### FAMS 510 - Topics in Film Media Histories (3 Credits)

Intensive study of a specific topic in U.S. film and media studies. May be repeated as content varies by title.

**Prerequisites:** FAMS 240.

### FAMS 511 - Special Topics in Film and Media Studies (3 Credits)

Intensive study of a specific topic in film and media studies. May be repeated as content varies by title.

**Prerequisites:** FAMS 240.

**Cross-listed course:** ARTH 551, MART 591

### FAMS 566 - Topics in US Film and Media (3 Credits)

Intensive study of a specific topic in U.S. film and media studies. May be repeated as content varies by title.

**Prerequisites:** FAMS 240.

### FAMS 598 - Special Topics in Global Film and Media (3 Credits)

Intensive study of a specific topic concerning films produced in a country other than the United States. May be repeated as content varies by title.

**Prerequisites:** FAMS 240.

**Cross-listed course:** FORL 598, MART 594

**Graduation with Leadership Distinction:** GLD: Global Learning

### FAMS 710 - Advanced Special Topics in Film and Media (3 Credits)

Advanced study of a specific topic in film and media studies. May be repeated as content varies by title.

## Finance (FINA)

### FINA 666 - Real Estate and Urban Development (3 Credits)

An overview of real estate in both the public and private sectors that serves as the basis for advanced study in the various disciplines of real estate and urban development. No prior knowledge of the field is assumed.

### FINA 737 - Derivative Products and Analysis (3 Credits)

Derivative contracts (forwards, futures, swaps, and options), valuation models, and supporting market structures.

**Prerequisites:** DMSB 715 or FINA 760.

### FINA 744 - Risk and Insurance (3 Credits)

A study of non-speculative risk and risk bearing techniques, with emphasis on insurance covering personal, property, and liability risks. Attention is also given to the structure and regulation of the insurance industry, the role of governmental insurance programs, new product developments, and the impact of tort law reform, inflation, and consumerism.

### FINA 745 - Management of Employee Benefit Programs (3 Credits)

An analytical study of group life, health, and retirement plans that provide economic security for employees; focuses on design, funding, tax considerations, cost controls, compliance with governmental regulations, the impact of inflation, and new types of benefits.

### FINA 746 - Risk Management (3 Credits)

An examination of non-speculative risk, its measurement, and management by organizations. Emphasis is on the formation of top management policy statements on pure risks and their implementation by risk managers. Loss control, insurance, and other risk finance techniques are applied to practical risk management situations.

**Prerequisites:** FINA 737.

### FINA 747 - Financial Planning Seminar (3 Credits)

An intensive study of the financial planning process. Integration of insurance, investment, and tax principles in the development of comprehensive personal financial plans.

**Prerequisites:** FINA 744 and FINA 762.

### FINA 750 - Finance for Human Resource Professionals (3 Credits)

Fundamentals of analysis and decision making in financial management for human resource professionals.

### FINA 756 - Financial Statement Analysis (3 Credits)

Analysis of financial statements for profitability and risk assessment and for firm and segment valuation.

**Prerequisites:** DMSB 717 or ACCT 729 or equivalent.

**Cross-listed course:** ACCT 738

### FINA 760 - Financial Policies (3 Credits)

Theory and fundamentals of analysis and decision-making in financial management.

**Prerequisites:** ACCT 729.

### FINA 761 - Advanced Financial Management (3 Credits)

Advanced study of problems involved in the financial management of economic organizations.

**Prerequisites:** FINA 760 or DMSB 715.

### FINA 762 - Investment Management (3 Credits)

The use of analytical techniques to evaluate investment opportunities with consideration given to applicable quantitative methods of portfolio management.

**Prerequisites:** FINA 760 or equivalent.

### FINA 763 - Options in Corporate Finance (3 Credits)

Applications of financial options in managing risk.

**Prerequisites:** FINA 737.

### FINA 764 - Money and Capital Markets (3 Credits)

Characteristics, structure, and functions of money and capital markets; sources of funds for bond investment, stock financing, mortgage financing, and small business financing. Current problems and procedures in these markets are considered.

**Prerequisites:** FINA 760.

### FINA 765 - Management of Financial Institutions (3 Credits)

Nature, functions, and operations of financial institutions with particular attention to the banking system. The activities of other lending and savings institutions are studied together with their monetary and fiscal implications.

**Prerequisites:** DMSB 715 or FINA 760.

### FINA 766 - Advanced Real Estate Valuation (3 Credits)

A study of income producing properties including income expense analyses, capitalization processes and discount rates, direct capitalization methodologies, and computerized discounted cash flow valuation models.

**Prerequisites:** FINA 760 or DMSB 715.

### FINA 767 - Real Estate Finance (3 Credits)

An analytical study of mortgage markets and the institutions involved. Particular emphasis is placed on specialized institutional practices, innovative financing techniques, and current developments.

**Prerequisites:** FINA 760 or DMSB 715.

**FINA 768 - Real Estate Market Analysis (3 Credits)**

Market analysis including an overview of market area study and its relationship to the feasibility of a specific project. Topics include theory and methods of market and feasibility analysis. Examples of market and feasibility studies are reviewed and critiqued.

**Prerequisites:** FINA 666.

**FINA 769 - Real Estate Decision and Administrative Processes (3 Credits)**

An integrative approach emphasizing the special features of real estate decisions; social, legal, economic, political, and environmental problems of the real estate sector within the economy as a whole are studied.

**Prerequisites:** FINA 666.

**FINA 770 - Fixed-Income Securities (3 Credits)**

Fundamental principles of fixed-income securities and fixed-income valuation models, including valuation of bonds with embedded options.

**Prerequisites:** FINA 737 and FINA 762.

**FINA 771 - Financial Services Markets and Institutions (3 Credits)**

Analysis of the functions and operations of financial markets and institutions, focusing on insurance markets, investment banking, and market microstructure.

**Prerequisites:** DMSB 715 or FINA 760.

**FINA 772 - Student-Managed Investments (3 Credits)**

Students will be introduced to a variety of approaches to security analysis and valuation techniques as they manage a real portfolio.

**Prerequisites:** FINA 760 or DMSB 715.

**FINA 773 - Project Finance (3 Credits)**

Provide an understanding of the following: fundamentals of non-recourse, project financing; financial markets for project finance; infrastructure sectors and their business risks; transaction structures and the documentation used to structure individual project financing; political risk; currency risk and problems with respect to local currency financing; international organizations relevant to infrastructure investment and finance.

**Prerequisites:** FINA 760 or DMSB 715.

**FINA 780 - Entrepreneurial Finance and the Dynamics of Emerging Ventures (3 Credits)**

Exploration of the funding and financial management of emerging ventures, including sources and structure of capital, financial levers to drive performance and metrics to monitor performance, and the study of how to impact, capture, quantify and realize value.

**Cross-listed course:** MGMT 780

**FINA 781 - Real Estate Investment Analysis (3 Credits)**

Advanced real estate investment analysis emphasizing equity investment positions under alternative ownership forms, syndications and securities registration, real estate productivity evaluation based on cash flow analysis, federal tax policies affecting real estate, and real estate portfolio analysis.

**Prerequisites:** FINA 760.

**FINA 790 - Special Topics in Finance (3 Credits)**

Analysis of current topics, issues and practices in various areas of finance.

**FINA 860 - Principles of Finance (3 Credits)**

Fundamental concepts and issues in financial economics, such as risk aversion, portfolio theory, asset pricing models, arbitrage pricing models, corporate investment decisions, capital structure, dividend policy, risk management, and financial institutions.

**FINA 865 - Theory of Finance (3 Credits)**

Utility models and various alternative models used in asset and security pricing. Emphasis is on seminal research in finance.

**FINA 866 - Current Issues in Finance (3 Credits)**

Covers current theory of finance and extensions of the theoretical developments examined in FINA 865 Theory of Finance.

**Prerequisites:** FINA 865.

**FINA 867 - Advanced Topics in Finance (3 Credits)**

Special topics in financial markets and institutions, investment and portfolio theory, and/or corporate finance that are not examined in FINA 865 or 866.

**Prerequisites:** FINA 865.

**FINA 868 - Empirical Methods in Financial Research (3 Credits)**

Planning and execution of applied research in finance.

**Prerequisites:** FINA 866, CSCE 206.

**FINA 869 - Seminar in Financial Research (3 Credits)**

Examination of empirical literature in finance. Development of a research proposal is required.

**Prerequisites:** FINA 866.

## Foreign Languages (FORL)

**FORL 501 - Spanish for Medical Personnel (3 Credits)**

Basic course in health professions. Functional language and lexicon as well as cultural practices for interaction with Hispanic clients.

**Prerequisites:** 2 semesters of college-level Spanish or equivalent.

**FORL 510 - Teaching Second Languages to Young Children (3 Credits)**

To assist prospective teachers of young children in the development of a second language and multicultural learning activities. Practicum sessions are an integral part.

**Prerequisites:** 210 level of a foreign language or its equivalent.

**Cross-listed course:** EDEL 510

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Internships

**FORL 511 - Teaching Foreign Languages in Secondary Schools (3 Credits)**

Current methods, techniques, and materials of instruction appropriate for secondary schools.

**Prerequisites:** 210 level of a foreign language or its equivalent.

**Cross-listed course:** EDSE 575

**FORL 598 - Special Topics in Global Film and Media (3 Credits)**

Intensive study of a specific topic concerning films produced in a country other than the United States. May be repeated as content varies by title.

**Prerequisites:** FAMS 240.

**Cross-listed course:** FAMS 598, MART 594

**FORL 700A - Language Training in International Business I (1-12 Credits)**

An introduction to the fundamentals of Arabic and an intensive study of the culture and specialized language of the business world in which the language is used as may be necessary for I.M.B.A. candidates to function as business specialists in regions other than their native country. Not for graduate credit in a foreign language department.





**FORL 703P - Training in International Business II (3 Credits)**

A continuation of FORL 700P for practice in written and oral communication as may be required for students enrolled in the International Master of Business Administration program. Not for major credit in a graduate program in the foreign language departments.

**FORL 703R - Training in International Business II (3 Credits)**

A continuation of FORL 700R for practice in written and oral communication as may be required for students enrolled in the International Master of Business Administration program. Not for major credit in a graduate program in the foreign language departments.

**FORL 703S - Training in International Business II (3 Credits)**

A continuation of FORL 700S for practice in written and oral communication as may be required for students enrolled in the International Master of Business Administration program. Not for major credit in a graduate program in the foreign language departments.

**FORL 705A - Lang Trng in Intl Bus III (6 Credits)**

Intensive course for students in the I.M.B.A. program, intended to investigate on an advanced level the linguistic and cultural aspects of business and to prepare the student for an internship either in the United States or abroad. Not for major credit in a graduate program in the foreign language departments.

**FORL 705C - Lang Trng in Intl Bus III (6 Credits)**

Intensive course for students in the I.M.B.A. program, intended to investigate on an advanced level the linguistic and cultural aspects of business and to prepare the student for an internship either in the United States or abroad. Not for major credit in a graduate program in the foreign language departments.

**FORL 705E - Lang Trng in Intl Bus III (6 Credits)**

Intensive course for students in the I.M.B.A. program, intended to investigate on an advanced level the linguistic and cultural aspects of business and to prepare the student for an internship either in the United States or abroad. Not for major credit in a graduate program in the foreign language departments.

**FORL 705F - Lang Trng in Intl Bus III (6 Credits)**

Intensive course for students in the I.M.B.A. program, intended to investigate on an advanced level the linguistic and cultural aspects of business and to prepare the student for an internship either in the United States or abroad. Not for major credit in a graduate program in the foreign language departments.

**FORL 705G - Lang Trng in Intl Bus III (6 Credits)**

Intensive course for students in the I.M.B.A. program, intended to investigate on an advanced level the linguistic and cultural aspects of business and to prepare the student for an internship either in the United States or abroad. Not for major credit in a graduate program in the foreign language departments.

**FORL 705I - Lang Trng in Intl Bus III (6 Credits)**

Intensive course for students in the I.M.B.A. program, intended to investigate on an advanced level the linguistic and cultural aspects of business and to prepare the student for an internship either in the United States or abroad. Not for major credit in a graduate program in the foreign language departments.

**FORL 705J - Lang Trng in Intl Bus III (6 Credits)**

Intensive course for students in the I.M.B.A. program, intended to investigate on an advanced level the linguistic and cultural aspects of business and to prepare the student for an internship either in the United States or abroad. Not for major credit in a graduate program in the foreign language departments.

**FORL 705K - Lang Trng in Intl Bus III (6 Credits)**

Intensive course for students in the I.M.B.A. program, intended to investigate on an advanced level the linguistic and cultural aspects of business and to prepare the student for an internship either in the United States or abroad. Not for major credit in a graduate program in the foreign language departments.

**FORL 705P - Lang Trng in Intl Bus III (6 Credits)**

Intensive course for students in the I.M.B.A. program, intended to investigate on an advanced level the linguistic and cultural aspects of business and to prepare the student for an internship either in the United States or abroad. Not for major credit in a graduate program in the foreign language departments.

**FORL 705R - Lang Trng in Intl Bus III (6 Credits)**

Intensive course for students in the I.M.B.A. program, intended to investigate on an advanced level the linguistic and cultural aspects of business and to prepare the student for an internship either in the United States or abroad. Not for major credit in a graduate program in the foreign language departments.

**FORL 705S - Lang Trng in Intl Bus III (6 Credits)**

Intensive course for students in the I.M.B.A. program, intended to investigate on an advanced level the linguistic and cultural aspects of business and to prepare the student for an internship either in the United States or abroad. Not for major credit in a graduate program in the foreign language departments.

**FORL 730 - Principles of Instructed Second Language Acquisition and Foreign Language Teaching (3 Credits)**

An analysis of instructed second language acquisition (SLA). This course explores the historical development and up-to-date findings in foreign/second language research and applies that knowledge to classroom teaching methods. Students will be expected to conduct empirical investigation.

**Prerequisites:** FORL 511 or LING 790.

**Cross-listed course:** LING 792

**FORL 772 - Technology in Foreign Language Education (3 Credits)**

Introduction to technology in language teaching and the connection between language acquisition and the implementation of Internet and multimedia technology.

**Cross-listed course:** EDTE 772, LING 772

**FORL 774A - Teaching Internship (Foreign Languages) (3 Credits)**

Application of effective teaching techniques and organization of instructional settings in foreign languages for K-12.

**Prerequisites:** acceptance to the professional program in education.

**Cross-listed course:** EDTE 774A

**FORL 774B - Teaching Internship (Foreign Languages) (9 Credits)**

Application of effective teaching techniques and organization of instructional settings in foreign languages for K-12.

**Prerequisites:** FORL 774A.

**Corequisite:** EDSE 584.

**FORL 776 - The Teaching of Foreign Languages in College (3 Credits)**

Basic theoretical principles of foreign language teaching in college. Required of all graduate teaching assistants. Required of all M.A.T. students. Other students may use as an elective.

## FPMD - Family & Preventive Med (FPMD)

### FPMD 710 - Topics in Preventive Medicine (2 Credits)

A seminar-format course for physicians and doctoral candidates in health science disciplines providing clinically oriented discussion of a range of topical issues in preventive medicine.

**Prerequisites:** MD or consent of the instructor.

## French (FREN)

### FREN 501 - Contemporary France (3 Credits)

Readings in and discussion of the culture of contemporary France.

**Prerequisites:** C or better in both FREN 309 and FREN 310, or equivalents, or a score of F-7 on the French language placement exam. FREN 311 strongly recommended.

### FREN 510 - Current Events in the France and the Francophone World (3 Credits)

Development of advanced oral skills in French. Study of linguistic and cultural aspects of French language media.

**Prerequisites:** C or better in both FREN 309 and FREN 310, or equivalents, or a score of F-7 on the French language placement exam. FREN 311 strongly recommended.

### FREN 511 - Techniques of Literary Analysis (3 Credits)

Texts from standard authors, with emphasis on explication de texte.

**Prerequisites:** C or better in each of FREN 309, FREN 310, and FREN 311, or equivalents, or a score of F-7 on the French language placement exam.

### FREN 515 - Advanced French Stylistics (3 Credits)

Practice in descriptive and narrative composition with special attention to contrastive stylistics; thème et version.

**Prerequisites:** C or better in each of FREN 309, FREN 310, and FREN 311, or equivalents, or a score of F-7 on the French language placement exam.

### FREN 516 - French Phonology (3 Credits)

The sound system and its functioning in the morphological system of French from the point of view of current phonological theory.

**Cross-listed course:** LING 512

### FREN 517 - French Linguistics (3 Credits)

The structure, morphology, and syntax of modern French.

**Cross-listed course:** LING 502

### FREN 595 - Special Topics in French (3 Credits)

Poetry, prose, theatre, cinema, civilization, language, linguistics. Unique opportunities will be announced by title. May be repeated.

**Prerequisites:** C or better in both FREN 309 and FREN 310, or equivalents, or a score of F-7 on the French language placement exam. FREN 311 strongly recommended.

### FREN 615 - Intensive Readings in French (3 Credits)

Graduate students fulfill their foreign-language reading requirement with successful completion of the course. Undergraduates may take the course as an elective only. Grades S/U for graduates and undergraduates.

### FREN 700 - Introduction to Graduate Studies in Languages, Literatures, and Cultures (3 Credits)

An introduction to graduate studies that includes a survey of contemporary literary theory, an overview of the current state of the profession, and instruction in how to carry out research and write at the graduate level.

**Cross-listed course:** CPLT 700, GERM 700, SPAN 700

### FREN 715 - History of the French Language (3 Credits)

Development of the French language from its origins to 1600.

**Cross-listed course:** LING 732

### FREN 720 - La Nouvelle Vague et Après/The New Wave and After (3 Credits)

Modern French films in their cultural context beginning with the cinema of the Tradition of Quality and the Nouvelle Vague of the late 1950s.

### FREN 730 - Francophone Literatures (3 Credits)

Literatures in French from Africa and the New World.

### FREN 735 - Francophone Literature from Quebec (3 Credits)

Introduction to the literature and culture of French-speaking Canada and specifically of Quebec. A survey of influential works will be discussed in relation to their historical and cultural background.

### FREN 740 - Old French Literature (3 Credits)

French literature from 842 to 1500.

### FREN 750 - Sixteenth-Century French Literature (3 Credits)

Extensive readings and study in the prose, poetry, and drama of 16th-century literature.

### FREN 760 - Seventeenth-Century French Literature (3 Credits)

### FREN 770 - Eighteenth-Century French Literature (3 Credits)

### FREN 775 - Seminars on Selected Topics in Foreign Language Education (3 Credits)

Topics will be identified by title in the schedule of classes. Each topic may be taken only once.

### FREN 776 - The Teaching of Foreign Languages in College (3 Credits)

Basic principles of foreign language teaching in college combined with practical demonstrations. Note: Required of all graduate assistants. This course will not count toward the 30-hour M.A. or M.A.T. degree.

### FREN 777 - Supervised Instruction in Teaching Foreign Languages in College (0 Credits)

Supervised direction of foreign language teaching in college. Required of all graduate assistants who are teaching. This course will not count toward the 30-hour M.A. or M.A.T. degree.

### FREN 780 - Nineteenth-Century French Literature (3 Credits)

### FREN 790 - Twentieth-Century French Literature (3 Credits)

### FREN 795 - French Seminar (3 Credits)

May be repeated with approval of advisor.

### FREN 796 - Special Projects in French (1-3 Credits)

Directed research and reading in subjects to be individually assigned. Prior written approval of professor required. May be repeated once for credit.

### FREN 799 - Thesis Preparation (1-9 Credits)

## Genetic Counseling (HGEN)

### HGEN 700 - Medical Genetics for Health Professionals (3 Credits)

An overview of the role of genetics in health and illness. Focus of study includes strategies for diagnosis, prevention, and treatment of genetic disease and the integration of genetics into clinical practice.

### HGEN 701 - Introduction to Genetic Counseling (3 Credits)

An overview of the history and development of genetic counseling. Introduction to the fundamental components of and skills utilized in prenatal, pediatric, and adult genetic counseling.

**Prerequisites:** admission to program.

**HGEN 702 - Psychosocial Aspects of Genetic Counseling (3 Credits)**

Exploration of the impact of genetic conditions on the individual and family. Psychosocial skills will be strengthened through reading, role play, discussion, and interactions with affected individuals and families.

**Prerequisites:** HGEN 701.

**HGEN 703 - Approaches to Ethical Challenges in Genetic Counseling (1 Credit)**

Seminar in bioethical principles and their application to case management and genetic counseling. Includes lecture, case presentation, and discussion.

**Prerequisites:** HGEN 701.

**HGEN 704 - The Genetic Counseling Process (3 Credits)**

Introduction to counseling skills utilized in genetic counseling via reading, discussion, clinical observation, and role play.

**Corequisite:** HGEN 701.

**HGEN 705 - Clinical Skills Seminar (1 Credit)**

Intensive skill development focused on practical aspects of patient care for clinical rotation preparation.

**HGEN 710 - Genetic Counseling Methods (3 Credits)**

An integration of the student's theoretical background and clinical experiences with focus on the development of clinical skills. Format includes case presentation and discussion.

**Prerequisites:** HGEN 702

**HGEN 715 - Contemporary Issues in Genetic Counseling (1 Credit)**

Discussion forum targeted at critical evaluation of medical genetics literature and examination of current issues facing the genetic counseling profession. May be repeated for up to 4 credit hours.

**HGEN 720 - Medical Genetics (4 Credits)**

A study of the clinical aspects of human genetics with focus on single gene, chromosomal, and multifactorial genetic disease; the underlying molecular and biochemical principles; and determination of genetic risk.

**HGEN 722 - Human and Medical Genetics (3 Credits)**

Principles of genetics as they apply to medicine and basic concepts needed to understand human genetics. Current knowledge and essential areas of research in human and medical genetics.

**Prerequisites:** BIOL 302 and BIOL 303 or equivalent.

**HGEN 725 - Human Developmental Biology I (4 Credits)**

The process of normal human development and basic physiological/anatomical processes of organ systems including embryo, craniofacial, nervous, respiratory, musculoskeletal, and the integumentary systems. Clinical significance and etiologies of human malformations.

**HGEN 726 - Human Developmental Biology II (4 Credits)**

Systems covered include cardiac, vascular, and urogenital. Additional topics include clinical correlates, ultrasound, labod and delivery, infancy, childhood, and adolescence.

**HGEN 730 - Advanced Medical Genetics I (3 Credits)**

A comprehensive seminar series taught by clinical/medical geneticists and medical practitioners. Topics include Mendelian genetics, cytogenetics, metabolic disorders, multifactorial disorders, and mental retardation.

**Prerequisites:** HGEN 720.

**HGEN 731 - Advanced Medical Genetics II (3 Credits)**

Continuation of HGEN 730. Topics include psychiatric disorders, cancer genetics, skeletal, renal, neuromuscular and neurocutaneous disorders, genetic autopsy, molecular diagnostics, and immunogenetics.

**HGEN 735 - Cancer Genetics and Genetic Counseling (3 Credits)**

Overview of medical oncology with an emphasis on familial and hereditary cancer. Includes didactic lectures, oral and written assignments.

**Prerequisites:** HGEN 720.

**HGEN 740 - Transforming Health Care for the Future (1 Credit)**

Foundation for beginning health professions students to gain an understanding of the complexities of the health care system through experiential activities conducted in interprofessional teams and the importance of interprofessional collaboration in order to improve the system. Also graded pass/fail for pharmacy, social work and public health, other units with stand-alone course (medicine and nursing have requirements embedded in larger class).

**HGEN 750 - Summer Clinical Rotation (2 Credits)**

Clinical placement in a regional genetic center under direct supervision of geneticist/genetic counselor. Allows opportunity for development of genetic counseling skills as students begin transition from theory to practice.

**Prerequisites:** HGEN 702.

**HGEN 760 - Clinical Rotation I (3 Credits)**

Two days per week of clinical placement under direct supervision of geneticist/genetic counselor for experience in prenatal, pediatric, and disease-specific clinics.

**Prerequisites:** HGEN 702.

**HGEN 761 - Clinical Rotation II (3 Credits)**

Two days per week of clinical placement under direct supervision of geneticist/genetic counselor for experience in prenatal, pediatric, and disease-specific clinics.

**Prerequisites:** HGEN 702.

**HGEN 799 - Thesis Preparation (1-6 Credits)**

## Geography (GEOG)

**GEOG 510 - Special Topics in Geographic Research (3 Credits)**

Selected topics of special interest in geography. May be repeated as content varies by title.

**GEOG 512 - Migration and Globalization (3 Credits)**

A survey of the political, economic, and social causes and consequences of migration. Topics include immigration policy, border control, settlement patterns, transnationalism, multiculturalism, and integration. Selected contemporary and historical cases.

**Prerequisites:** GEOG 210.

**GEOG 515 - Political Geography (3 Credits)**

Concepts of space and power and their relationship to politics, elections, geopolitics, identities, law, economics, populations, and civil society.

**GEOG 516 - Coastal Zone Management (3 Credits)**

Analysis of the competing demands for limited resources in the coastal zone with emphasis on the role of management in the resolution of conflicts over resource use.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Internships

**GEOG 521 - Landscapes of South Carolina (3 Credits)**

An examination of the factors responsible for creating the contemporary South Carolina cultural landscape.

**GEOG 525 - Geographical Analysis of Transportation (3 Credits)**

Analysis of transportation systems and the application of geographic tools to transportation planning.

**GEOG 530 - Environmental Hazards (3 Credits)**

Human and environmental contributions to the generation and management of hazards originating from extreme natural events to technological failures. Contemporary public policy issues at the national and international level.

**GEOG 531 - Quantitative Methods in Geographic Research (3 Credits)**

A survey of basic quantitative approaches for handling and interpreting geographically related data; univariate and bivariate procedures applicable to a variety of problems.

**GEOG 535 - Hazards Analysis and Planning (3 Credits)**

Examination of the geo-spatial aspects of hazards analysis and planning with specific reference to disaster preparedness, recover, mitigation, and resilience.

**Prerequisites:** GEOG 363 and GEOG 530, or equivalents.

**GEOG 538 - Global Food Politics (3 Credits)**

Political, social, and cultural landscapes of food and farming around the world; issues of agricultural production, trade, consumption, and food security.

**Cross-listed course:** ENVR 538

**GEOG 541 - Advanced Cartography (3 Credits)**

Planning, compiling, constructing, and evaluating thematic maps. Theory and practice in scribing, separation and screening, color proofing, and map reproduction. Discussions of the process of map communication and the ways the cartographer can improve that communication.

**Prerequisites:** GEOG 341.

**GEOG 542 - Dynamic Cartography (3 Credits)**

Theories and principles of interactive and animated cartographic design.

**Prerequisites:** GEOG 341.

**GEOG 544 - Geography of the City (3 Credits)**

The influence of political boundaries, historical forces, settlement patterns, and transportation processes on urban life.

**GEOG 545 - Synoptic Meteorology (4 Credits)**

Analysis of synoptic-scale circulation using weather maps, soundings, cross sections, thermodynamic diagrams, numerical models, and imagery.

**Prerequisites:** GEOG 202 or equivalent.

**GEOG 546 - Applied Climatology (4 Credits)**

Analysis of climate applications in natural and human-modified environments. Content may include water resources, solar energy, urban planning, air quality, agriculture, and tourism. Course work includes lab and field experimentation.

**GEOG 547 - Fluvial Geomorphology (3 Credits)**

Introduction to landforms and processes associated with flowing water at the earth's surface. Hydrology, sedimentology, and theories of channel formation and drainage basin evolution.

**GEOG 549 - Water and Watersheds (3 Credits)**

Spatial variation of hydrology, water quality, and water-related hazards, including runoff generation, soil erosion, sedimentation, and flood hazards. Emphasizes a watershed perspective using geographic data and methods.

**Prerequisites:** GEOG 347, GEOL 371, or ECIV 360.

**GEOG 551 - Principles of Remote Sensing (3 Credits)**

Introduction to remote sensing. A variety of imaging systems including black and white, color, and high altitude color infrared photographs, LANDSAT, thermal infrared, and active microwave. Use of remote sensing for studying the extra-terrestrial environment and earth weather systems.

**GEOG 552 - LiDARgrammetric and Photogrammetric Digital Surface Mapping (3 Credits)**

Introduction to fundamental concepts used to map topographic and planimetric Earth surface features using digital LiDAR (LiDARgrammetric) and digital soft-copy photogrammetry (Photogrammetric).

**Prerequisites:** GEOG 363 or GEOG 341 or GEOG 345 or GEOG 551 or GEOG 563.

**GEOG 554 - Spatial Programming (3 Credits)**

Computer programming of spatial problems; spatial statistical analysis, interactive graphics, and computer maps.

**GEOG 556 - WebGIS (3 Credits)**

Web-based Geographic Information Systems (WebGIS), including concepts and principles of WebGIS, web programming fundamentals, web-based mapping techniques, and developing WebGIS applications.

**Prerequisites:** GEOG 363.

**GEOG 560 - Source Materials for Geographic Instruction (3 Credits)**

Introduction to selected materials available for all levels of instruction in geography. Emphasis on the substantive nature of the materials.

**Cross-listed course:** EDSE 505

**GEOG 561 - Contemporary Issues in Geography Education (3 Credits)**

Key concepts of geography and current approaches to teaching geography with specific attention to classroom materials, curriculum reform, cross-curricular integration, learning theory, and the use of geospatial/instructional technology.

**GEOG 562 - Satellite Mapping and the Global Positioning System (3 Credits)**

Technology and use of Global Positioning Systems (GPS). GPS space segment, receiver technologies, range observables, and positioning accuracy. Applications to large/medium scale mapping, remote sensing, and aerial photography.

**Prerequisites:** GEOG 345 or GEOG 363 or GEOG 551.

**GEOG 563 - Advanced Geographic Information Systems (3 Credits)**

Theory and application of geographic information systems including discussions of automated input, storage, analysis, integration, and display of spatial data. Use of an operational geographic information system.

**GEOG 564 - GIS-Based Modeling (3 Credits)**

Geographical information systems for modeling physical/human processes in space and time using raster and vector data. Cartographic modeling concepts, embedded models, and GIS-model coupling.

**GEOG 565 - Geographic Information System (GIS) Databases and Their Use (3 Credits)**

Representation, construction, maintenance, and analysis of spatial data in a geographic information system (GIS) database.

**Prerequisites:** GEOG 363 or GEOG 341 or GEOG 551 or GEOG 563.

**GEOG 566 - Social Aspects of Environmental Planning and Management (3 Credits)**

Geographical approach to environmental problems.

**Prerequisites:** GEOG 343.

**GEOG 567 - Long-Term Environmental Change (3 Credits)**

Climatic changes of the past and their impact on the physical landscape, with an emphasis on the Quaternary period.

**Prerequisites:** A 200-level course in physical geography or geology or equivalent.

**Cross-listed course:** GEOL 567

**GEOG 568 - Human Dimensions of Global Environmental Change (3 Credits)**

Consequences of increasing anthropogenic changes on environmental systems including the sources of change, regional impacts, and social and policy responses.

**Prerequisites:** GEOG 343.

**GEOG 569 - International Development and the Environment (3 Credits)**

Intersections of international development and environmental change; study of general theoretical perspectives balanced with case studies from the Global South.

**Cross-listed course:** ANTH 569

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy, GLD: Global Learning

**GEOG 570 - Geography of Public Land and Water Policy (3 Credits)**

Geography of public land, water, and related public trust resources (wildlife, timber, minerals, fuels, recreation, wetlands, coastal zones, wilderness); historical geography of policy; spatial aspects of current research and management.

**GEOG 571 - Microclimatology (4 Credits)**

Field techniques and processes in the atmospheric boundary layer including radiation, soil heat fluxes, turbulence, momentum, latent and sensible heat fluxes, moisture, and evaporation.

**Prerequisites:** GEOG 202.

**GEOG 573 - Climatic Change and Variability (3 Credits)**

Observations and theories of climatic change and variability as they occur at different space and time scales. Projections of future climates. Techniques used in climatic change research and impact analysis.

**Prerequisites:** GEOG 202 or equivalent.

**GEOG 575 - Digital Techniques and Applications in Remote Sensing (3 Credits)**

Introduction to digital image processing techniques and applications. Image correction, enhancement, spatial and spectral transformation. Land use/land cover classification, and change detection.

**Prerequisites:** GEOG 551 or equivalent.

**GEOG 581 - Globalization and Cultural Questions (3 Credits)**

This course examines cultural understandings of and responses to globalization, examining topics such as its history and theories, migration, economic integration and inequality, identity, social movements, and the environment.

**Cross-listed course:** ANTH 581

**Graduation with Leadership Distinction:** GLD: Global Learning

**GEOG 590 - Beach-Dune Interactions (3 Credits)**

Influence of wind on coastal systems, with emphasis on nearshore currents, sediment transport and bedforms, aeolian transport, and dunes. Minimum Junior standing required.

**Cross-listed course:** MSCI 590

**GEOG 595 - Internship in Geography (1-6 Credits)**

Internship in government agencies, private-sector businesses, and non-profit organizations under the joint supervision of sponsor and departmental. A maximum of three credits may be applied to undergraduate Geography major or to Geography master's degree. May be repeated to a maximum of six credits.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Internships

**Experiential Learning:** Experiential Learning Opportunity

**GEOG 701 - History of Geographic Thought (3 Credits)**

A survey of the development of geographic philosophy and an analysis of geographic methodology.

**GEOG 705 - Directed Individual Studies in Geography (1-3 Credits)**

Directed research topics individually assigned and supervised by graduate faculty. May be repeated for credit.

**GEOG 706 - Selected Topics in Cartography and Remote Sensing (1-3 Credits)**

Special topics are offered in the form of short courses, seminars, and workshops. Students may take these offerings, by permission of the instructor, for variable credit. The course may be taken more than once.

**GEOG 709 - Women Explorers and Travelers (3 Credits)**

Examines in geographical and historical contexts the activities of various women travelers and explorers.

**Cross-listed course:** WGST 709

**GEOG 710 - Seminar in Geography Education (3 Credits)**

Review of recent literature on geography education with an emphasis on the national geography standards, spatial thinking and the use of geospatial technology in pedagogic contexts.

**GEOG 711 - Seminar in Regional Geography (3 Credits)**

An analysis of the total geographic complex of selected major world regions.

**GEOG 712 - Urban Geography (3 Credits)**

An investigation into the concepts of the urban field and the urban region.

**GEOG 713 - Advanced Economic Geography (3 Credits)**

Investigation into the locational aspects and the spatial systems of selected economic activities, from both regional and systematic viewpoints.

**GEOG 720 - World Regional Geography for Teachers (3 Credits)**

The physical and human geography of major world regions with emphasis on basic principles of regional geography. Cannot be used in M.A., M.S., or Ph.D. programs in geography.

**GEOG 721 - Seminar in Systematic Geography (3 Credits)**

Studies of the characteristics, processes, and distributions over the world of the different cultural and physical environmental elements, such as economic, political, or social activities, climate and landforms.

**GEOG 730 - Seminar in Environmental Geography (3 Credits)**

Review of recent geographic literature on nature-society interactions with an emphasis on identifying research themes and methodologies employed by contemporary geographers.

**Prerequisites:** GEOG 530 or GEOG 568.

**GEOG 731 - Seminar in Quantitative Analysis in Geography (3 Credits)**

Advanced quantitative approaches for handling and interpreting geographically related data. Multivariate procedures applicable to a variety of problems will be presented. For each topic the students will analyze data relating to their individual interests.

**Prerequisites:** GEOG 531 or equivalent.

**GEOG 734 - Field Seminar in Third World Development Projects (6 Credits)**

The student works in a developing country for two to four months on projects designed by instructor and funded by the host country.

**GEOG 735 - Seminar in Political Geography (3 Credits)****GEOG 737 - Seminar in Spatial Cognition (3 Credits)**

Selected topics in spatial cognition.

**GEOG 740 - Research Trends in Geography (1 Credit)**

Seminar on research trends and writing research proposals in geography.

**GEOG 741 - Seminar in Cartography (3 Credits)**

A seminar to familiarize students with current experimental techniques, literature, and research topics in cartography.

**GEOG 746 - Seminar in Climatology (3 Credits)**

Major theories, measures of climatic change and variability, climate models, statistical analysis, and climate impacts.

**GEOG 747 - Seminar in Physical Geography (3 Credits)**

Investigation of physical systems and processes at the earth's surface. Topics vary; landforms, hydrology, pedology, biogeography, quaternary science, human impacts on physical systems.

**GEOG 751 - Digital Techniques of Remote Sensing (3 Credits)**

Introduction to the fundamental principles and methods of digital image processing of remotely sensed data. Algorithms are discussed for preprocessing, enhancement, and classification mapping of digital data for agricultural, urban, geological, and environmental problems.

**Prerequisites:** GEOG 551 and course in computer programming.

**GEOG 755 - Remote Sensing Modeling and Analysis (3 Credits)**

Satellite-based information extraction; programming skills for digital image processing; self-developed modeling approaches; quantitative analysis of remote sensing data.

**Prerequisites:** GEOG 575 or equivalent.

**GEOG 763 - Seminar in Geographic Information Systems (3 Credits)**

Theory and application of modern automated approaches to handling geographic data. Includes computer oriented procedures for the input, analysis and display of spatial data. Areas covered range from census address matching to statewide natural resource systems.

**Prerequisites:** GEOG 563.

**GEOG 789 - Area Analysis: Europe, the Latin American Republics, Asia, or the United States (3-6 Credits)**

To provide the student with a substantial understanding and familiarity with the region of specialization; a multidisciplinary approach with an emphasis on geographic, political, and economic issues most significant for each region. Offered for the International Master of Business Administration program.

**GEOG 799 - Thesis Preparation (1-9 Credits)****GEOG 801 - Historical and Contemporary Geographic Thought (3 Credits)**

A survey of (1) the philosophical and intellectual foundations of Geography as a discipline, and (2) contemporary ideas and debates in major subfields of geographic research.

**GEOG 805 - Advanced Directed Individual Studies in Geography (1-3 Credits)**

Advanced directed research by a PhD student on geographical topics to be individually supervised by graduate faculty. This course may be taken for 1-3 credit hours of independent study by a student working closely with a faculty member on a specific research project to be defined and agreed upon between the student and a supervising faculty member.

**GEOG 810 - Advanced Seminar in Human Geography (3 Credits)**

Reading intensive seminar focused on conceptual frontiers and methodological debates in contemporary human geography with a secondary emphasis on intradisciplinary and cross-disciplinary affinities.

**Prerequisites:** any 700-level GEOG seminar course.

**GEOG 811 - Advanced Seminar in Regional Geography (3 Credits)**

Advanced reading and discussion of the physical, economic, social and/or cultural geography of major selected world regions.

**GEOG 830 - Advanced Seminar in Environmental Geography (3 Credits)**

A research seminar where students critically evaluate relevant literature, develop a research proposal, and complete a related research project in environmental geography.

**Prerequisites:** GEOG 730.

**GEOG 841 - Advanced Seminar in Cartography (3 Credits)**

A topic central to cartography will be studied. Students will critically evaluate pertinent literature, develop a research proposal, and complete a related research project.

**GEOG 847 - Advanced Seminar in Physical Geography (3 Credits)**

Research and discussion on various topics in physical geography. Literature varies with seminar topic but will include prevailing theories, data types, and modeling strategies in climatology, meteorology, hydrology, biogeography, soils, or geomorphology.

**Prerequisites:** GEOG 547 or GEOG 746.

**GEOG 851 - Advanced Seminar in Remote Sensing (3 Credits)**

Advanced reading and discussion in the following areas - 1) the theoretical bases of remote sensing; 2) remote sensing of biophysical variables such as plant and soil temperatures and moisture content; 3) advanced principles of optical and digital image processing; and 4) economic aspects of remote sensing of the environment.

**GEOG 863 - Advanced Seminar in Geographic Information Systems (3 Credits)**

A research seminar in which students conduct a detailed analysis of specific aspects of geographical data handling. This will include the design, implementation, and management of an operational geographical information system.

**GEOG 899 - Dissertation Preparation (1-12 Credits)**

## Geology (GEOL)

**GEOL 500 - Field Geology (4-6 Credits)**

Geological field techniques including the use of field instruments and the preparation of geologic maps. Written and oral reports required.

**Prerequisites:** GEOL 325 and GEOL 355.

**Graduation with Leadership Distinction:** GLD: Research

**GEOL 501 - Principles of Geomorphology (3 Credits)**

The process of earth denudation with emphasis on chemistry of weathering, stream and erosion hydraulics, quantitative analysis of land form evolution.

**Prerequisites:** GEOL 101 and GEOL 102.

**Cross-listed course:** MSCI 501

**GEOL 502 - Principles of Coastal Geomorphology (4 Credits)**

Geological and physical controls on the morphology, development, and stability of coastlines. Analysis of waves and erosional processes, and coastal zone morphodynamics. Several required field trips.

**Prerequisite or Corequisite:** MATH 122 or MATH 141.

**Cross-listed course:** MSCI 502

**GEOL 503 - Regional Stratigraphy and Biostratigraphy of North America (3 Credits)**

Sedimentologic, biostratigraphic, and tectonic history of North America, approached from paleogeographic considerations with emphasis on the Atlantic Coastal Plain and Continental Margin. Three hours lecture and three hours recitation per week. Required field trips.

**GEOL 508 - Palynology (3 Credits)**

Fundamentals of pollen analysis including morphology of modern and fossil forms, use of pollen and spores for correlation, dating, establishing phylogenetic trends, and reconstruction of ancient environments. Two lectures plus one two-hour lab per week.

**GEOL 510 - Organic Sedimentation and Coal Genesis (3 Credits)**

Theories of origin of coal deposits and coal-forming ingredients. Basic concepts of coal composition and classification. Practical applications of coal petrographic techniques. Two lectures plus one two-hour lab. Two optional field trips.

**GEOL 511 - Advanced Paleontology (3 Credits)**

Systematic, ecologic, biogeographic, and evolutionary aspects of paleontology; lectures, practical exercises, field trips.

**Prerequisites:** GEOL 305.

**Cross-listed course:** MSCI 511

**GEOL 515 - Marine Micropaleontology (4 Credits)**

Marine microfossils; distribution, ecology, paleoecology, and biostratigraphy; use of microfossils in marine sediments to study oceanographic history. Three lectures and two laboratory hours per week.

**Cross-listed course:** MSCI 515

**GEOL 516 - Sedimentology (4 Credits)**

Modern concepts of sediment composition, sedimentary facies, depositional environments, and stratigraphy. Includes laboratory.

**Prerequisites:** GEOL 325.

**GEOL 518 - Surface to Subsurface Stratigraphy (3 Credits)**

Surface to subsurface stratigraphic interpretation and techniques; litho- and biostratigraphy; geophysical log interpretation and subsurface presentation.

**GEOL 520 - Isotope Geology and Geochronology (3 Credits)**

Dating techniques for Pleistocene deposits, sediments, archaeological materials, igneous and metamorphic rocks.

**GEOL 521 - Introduction to Geochemistry (3 Credits)**

Investigation of low temperature chemical reactions controlling the geochemistry of the earth's surface. Emphasis on CO<sub>2</sub>, carbonates, oxidation-reduction, thermodynamics, isotopes, biogeochemistry.

**Cross-listed course:** MSCI 521

**GEOL 524 - Environmental Radioisotope Geochemistry (3 Credits)**

Introduction to radioactivity and the use of radionuclides to study environmental processes, including age-dating and biogeochemical cycling in aquatic systems. Two lectures per week.

**Prerequisites:** CHEM 111, CHEM 112, MATH 141.

**GEOL 526 - Igneous Petrology (4 Credits)**

Petrography and petrogenesis of igneous rocks; evolution of contrasting petrotectonic terranes. Three lectures and three laboratory hours per week.

**Prerequisites:** GEOL 202.

**GEOL 527 - Metamorphic Petrology (4 Credits)**

Petrography and petrogenesis of metamorphic rocks in orogenic belts. Three lectures and three laboratory hours per week.

**Prerequisites:** GEOL 202.

**GEOL 531 - Plate Tectonics (3 Credits)**

Geological and geophysical evidence for plate tectonics, detailed development of the plate tectonics model, and present areas of research, including measurements of plate motion using satellite geodesy.

**Prerequisites:** Must have passed two GEOL courses numbered 300 or above, or consent of instructor.

**GEOL 537 - Field Methods in Geophysics (3 Credits)**

Application of two or more geophysical field methods to a current geological problem. Independent study contract required.

**GEOL 540 - Earth Science for Teachers I (3 Credits)**

Survey of topics related to the origin, internal structure, and internal processes of the earth, including plate tectonics, earthquakes, volcanoes, and mountain building. Required field trips, two lectures, and three lab hours per week. Cannot be used in M.S. or PhD. programs in geology.

**Cross-listed course:** EDSE 548

**GEOL 541 - Earth Science for Teachers II (3 Credits)**

Surface processes acting on the earth; introduction to weather and climate, weathering, erosion, and sedimentary processes; landform evolution; ocean currents and tides, near-shore geologic processes. Required field trips, two lecture and three lab hours per week. Cannot be used in MS or PhD programs in geology.

**Prerequisites:** EDSE 548/GEOL 540.

**Cross-listed course:** EDSE 549

**GEOL 542 - Methods in Geoscience Education Research (3 Credits)**

Introduction to methods used in discipline-based education research and their application to research questions in the geosciences.

**Prerequisites:** C or better in least one course in GEOL, ENVR, MSCI or GEOG.

**GEOL 545 - Geological Oceanography (3 Credits)**

A comprehensive study of the origin and development of the major structural features of the ocean basins and the continental margins. Discussion of the techniques used in obtaining geologic data and the interpretation of sedimentary processes, vulcanism, and the stratigraphy of the ocean basins.

**Cross-listed course:** MSCI 545

**GEOL 546 - Marine Geophysics (3 Credits)**

Introduction to the nature and structure of the ocean floor as revealed by geophysical techniques. Two hours lecture and three hours laboratory.

**GEOL 548 - Environmental Geophysics (4 Credits)**

Practical geophysical techniques for exploring the shallow subsurface. Seismic, resistivity, well log, gravity, magnetic method. Includes lectures and field exercises to collect and analyze data.

**Prerequisites:** MATH 141 and PHYS 201 or PHYS 211.

**GEOL 550 - Sedimentary Simulations and Sequence Stratigraphy (4 Credits)**

Problems of sequence stratigraphy resolved with graphic computer simulations. Sedimentary fill of basins by carbonates and/or clastics tracked as a function of rate of sediment accumulation, tectonic behavior, and sea level. Includes laboratory.

**Prerequisites:** GEOL 325.

**Cross-listed course:** MSCI 550

**GEOL 553 - Marine Sediments (3 Credits)**

Marine sedimentary environments; physical/biological factors which control the formation and distribution of modern marine sediments.

**Prerequisites:** GEOL 516.

**Cross-listed course:** MSCI 553

**GEOL 554 - Applied Seismology (3 Credits)**

Theory of seismic wave propagation. Seismic reflection data acquisition, processing, and interpretation.

**Prerequisites:** MATH 141; PHYS 201 or PHYS 211.

**GEOL 555 - Elementary Seismology (3 Credits)**

Basic elements of seismology. Mathematical development of seismic wave equations; measurement, description, and interpretation of seismic data.

**Prerequisites:** MATH 241.

**GEOL 556 - Seismic Reflection Interpretation (3 Credits)**

The interpretation of geologic structure using seismic sections. Recognition of apparent structure caused by velocity anomalies, multiples, and complex reflector geometry. Application to hydrocarbon exploration.

**GEOL 557 - Coastal Processes (3 Credits)**

Physical and geological processes controlling the formation and evolution of beach, barrier, and nearshore environments, including discussion of coastal management issues.

**Cross-listed course:** MSCI 557

**GEOL 560 - Earth Resource Management (3 Credits)**

An approach to problems of resource management by lecture and seminar using case studies in mineral, energy, hydrogeological, and environmental science.

**Graduation with Leadership Distinction:** GLD: Research

**Experiential Learning:** Experiential Learning Opportunity

**GEOL 561 - Environmental Field Geology (6 Credits)**

An introduction to field methods in sedimentology, structural geology, hydrogeology and geophysics with special reference to geological hazards and environmental problems.

**GEOL 567 - Long-Term Environmental Change (3 Credits)**

Climatic changes of the past and their impact on the physical landscape, with an emphasis on the Quaternary period.

**Prerequisites:** A 200-level course in physical geography or geology or equivalent.

**Cross-listed course:** GEOG 567

**GEOL 568 - Introduction to Micrometeorology (3 Credits)**

Small-scale processes in the atmospheric boundary layers, including energy budget, radiation, soil heat transfer, humidity, viscous flows, turbulence, momentum and heat exchanges, evaporation, and marine atmospheric boundary layer.

**Prerequisites:** PHYS 201 and MATH 141.

**Cross-listed course:** MSCI 568

**GEOL 570 - Environmental Hydrogeology (3 Credits)**

Environmental considerations of the hydrologic cycle, occurrence and movement of ground water, aquifer analysis, and water well emplacement and construction. Water quality, pollution parameters, and the geochemistry of selected natural systems. The effects of environmental problems, waste disposal, and urban development upon the aqueous geochemical regime.

**Prerequisites:** GEOL 101 and CHEM 111 or their equivalents.

**GEOL 571 - Soil Hydrology (4 Credits)**

Saturated and unsaturated water flow through soils, pore pressure development, runoff generation, and watershed response to rainfall. Three lecture and three laboratory hours per week.

**Prerequisites:** PHYS 202 and MATH 142.

**GEOL 575 - Numerical Modeling for Earth Science Applications (3 Credits)**

Finite difference and finite element methods for solving the diffusion equation and advection-dispersion equation, with applications in hydrogeology, geophysics, geology, and marine science.

**Prerequisites:** MATH 142; MATH 241 is recommended.

**GEOL 579 - Air-Sea Interaction (3 Credits)**

The physical mechanism responsible for interaction between the ocean and the atmosphere and the influence of air-sea interaction on atmospheric and oceanic dynamics and thermodynamics on a wide variety of spatial/temporal scales.

**Cross-listed course:** MSCI 579

**GEOL 580 - Satellite Oceanography (3 Credits)**

This course provides knowledge of various techniques used in satellite remote sensing of the oceans. Key skills will be developed in satellite data processing, image analysis, and hands-on research.

**Cross-listed course:** MSCI 580

**GEOL 581 - Estuarine Oceanography (3 Credits)**

Estuarine kinematics and dynamics; classification of estuaries; estuarine circulation and mixing. Scheduled field trips are required.

**Prerequisites:** MSCI 314.

**Cross-listed course:** MSCI 581

**GEOL 582 - Marine Hydrodynamics (3 Credits)**

Basic principles of fluid statics and dynamics. Conservation of mass, momentum, and energy; viscosity, vorticity, and boundary layers with examples from the marine environment. Applications to and analysis of ocean currents and waves. Scheduled field trips are required.

**Prerequisites:** differential equations, PHYS 201 or PHYS 211.

**Cross-listed course:** MSCI 582



**GEOL 583 - Geology and Geochemistry of Salt Marshes (3 Credits)**

Geological and geochemical processes in salt marshes. Methods of geological research in marshes, including instrumental techniques, sampling design, and data analysis. Two lectures per week plus four weekends of project-oriented fieldwork and/or equivalent lab work. Scheduled field trips are required.

**Cross-listed course:** MSCI 583

**GEOL 600 - Senior Seminar in Geology and Geophysics (2 Credits)**

Advanced research topics in geology and geophysics; critical reading of literature, technical presentations, and written reports. Senior standing.

**GEOL 650 - Electron Microscopy and Microanalysis (4 Credits)**

SEM, ESEM, TEM, and EMPA, WDS quantitative analysis, EDS semi-quantitative analysis, EBSD, methods of sample preparation, and applications in varieties of disciplines. Two lecture and three laboratory hours per week.

**Prerequisites:** CHEM 111 or equivalent.

**GEOL 699 - Senior Thesis (3-6 Credits)**

Senior capstone experience, research on a problem of fundamental significance, supervised by faculty member; must include field study component, written final project report, and oral presentation at departmental seminar.

**GEOL 700 - Geology of South Carolina (3 Credits)**

Survey of the surficial, coastal, and bedrock geology of South Carolina, its regional physiographic and tectonic setting, and the natural resources of the state.

**GEOL 702 - Environmental Earth Science for Teachers (3 Credits)**

The hydrologic cycle in geologic settings of this region, and the effects of urbanization and industrialization on groundwater, rivers, and coasts. The vulnerability of urban and industrial systems to natural geologic processes. Two lecture and three laboratory hours per week. Not available for graduate credit for students in M.S. or Ph.D. programs in geological sciences.

**Prerequisites:** introductory course in any of the earth sciences.

**GEOL 703 - Field Studies in Pleistocene and Holocene Geology for Teachers (1 Credit)**

Two weekend field courses dealing with Pleistocene and Holocene coastal geology, plate tectonics, sea-level change, global circulation patterns, shoreline change since 1850, and nearshore processes.

**GEOL 704 - Field Studies for Teachers in Natural and Altered Barrier Island Systems (1 Credit)**

Two weekend field courses dealing with barrier island and associated marsh environments, marsh productivity, the dune-beach-bar system, shoreline stabilization, and nearshore processes on natural and armored shorelines.

**GEOL 711 - Paleoclimatology (3 Credits)**

An overview of Earth's climate history during Cenozoic. Emphasis will be placed on Pleistocene glacial-interglacial climate variability and understanding the proxies used to reconstruct past climate changes.

**Cross-listed course:** MSCI 711

**GEOL 715 - Stable Isotope Geochemistry (3 Credits)**

Introduction to the analysis of stable isotopes of hydrogen, oxygen, carbon, nitrogen, and sulfur using mass spectrometry. Emphasis will be on the use of these isotopes in geological problems.

**Prerequisites:** GEOL 521.

**GEOL 716 - Eustasy and Global Variations in Sequence Stratigraphy (3 Credits)**

Relationship of sequence stratigraphy to sea level variations, tectonics and sedimentation. Construction and analyses of paleogeographic maps, regional cross-sections, and chronostratigraphic charts.

**Cross-listed course:** MSCI 716

**GEOL 717 - Organic Geochemistry (3 Credits)**

Sources, transport, and fate of organic matter in natural environments including soils, riverine, estuarine, coastal and open ocean sediments and waters.

**Prerequisites:** GEO 521L/MSCI 521.

**Cross-listed course:** MSCI 717

**GEOL 720 - Crystal Chemistry and Mineral Structure (3 Credits)**

Principles of atomic structure and chemical variation of minerals.

**GEOL 722 - Aqueous Geochemistry (3 Credits)**

This course was not found in the supplied content but was listed in the program requirements. If possible, please provide us with the correct information.

**GEOL 725 - Solid Earth Processes (3 Credits)**

Examination of the structure and dynamics of the Earth's interior combining perspectives from geophysics and geochemistry. Focus on the lithospheric cycle.

**GEOL 726 - Igneous Processes and Crustal Genesis (3 Credits)**

An investigation of igneous processes and their role in crustal genesis and evolution.

**GEOL 731 - Advanced Structural Geology (3 Credits)**

A study of the deformation of the earth's crust including mechanics of folding, faulting, jointing, and cleavage formation. Consideration of current theories of orogenesis in relation to geophysical evidence for the structure of the earth's crust, mantle, and core.

**Prerequisites:** GEOL 331 and GEOL 536.

**GEOL 733 - Rock Mechanics (3 Credits)**

Behavior of rocks and minerals up to 10kb, 8000°C. Role of internal pore pressure and time. Interplay of theory and empiricism.

**Prerequisites:** MATH 300.

**GEOL 735 - Regional Tectonics (3 Credits)**

Integrated analysis (from both model and case history approaches) of the regional structural geology of selected classic areas and analysis of the interaction of tectonic and sedimentary processes in the production of the sedimentary sequences of selected geosynclines and basins. Weekend field trips.

**GEOL 743 - Decision Making in Environmental Resource Management (3 Credits)**

Environmental project planning and management. Types and magnitudes of environmental problems; environmental pathways; environmental data acquisition and analysis; protection versus restoration; risk assessment; site assessment.

**Prerequisites:** GEOL 560.

**GEOL 744 - Decision Making in Energy Resource Management (3 Credits)**

An integrative seminar for science managers. Consideration of the technical, managerial, and financial aspects of decision making in geologic enterprises, with emphasis on hydrocarbon exploration.

**GEOL 745 - Petroleum Geology (3 Credits)**

An introduction to exploring for oil and natural gas; concentration on specific regions with energy resources.

**GEOL 750 - Basin Analysis Seminar (3 Credits)**

Development of the stratigraphic systems; detailed analysis of the aims, working methods, and relations between litho-, bio-, and chronostratigraphy. Three lecture hours per week with occasional field trips.

**GEOL 751 - Carbonate Petrology (3 Credits)**

Detailed analysis of the processes and products of carbonate sedimentation, diagenesis, and lithification, with special emphasis upon the role of organisms in forming carbonate sediments and sedimentary rocks. Three lecture hours per week with occasional field trips.

**GEOL 752 - Sandstone Petrology (3 Credits)**

Sandstone properties as a response to geologic processes. Relationships between the porous microstructure of sandstones and fluid transport. Automated petrography using image analysis and pattern recognition procedures.

**GEOL 754 - Oceanographic Techniques (1 Credit)**

Shipboard experience with basic techniques used by geological, physical, chemical, and biological oceanographers.

**Cross-listed course:** BIOL 754

**GEOL 755 - Environmental Measurements and Analysis (3 Credits)**

A field and laboratory course designed to acquaint students with basic techniques needed to measure and analyze various biotic and abiotic environmental parameters in estuarine and shallow water habitats. One lecture and six laboratory hours per week.

**GEOL 758 - Analysis of Geological Data (3 Credits)**

Principles used in processing, smoothing, correlating and contouring geological data and simulating geologic processes.

**GEOL 764 - Seismic Reflection Interpretation (3 Credits)**

The interpretation of regional stratigraphy and structure using seismic sections. Recognition of stratigraphic sequences, sedimentary facies, and extensional and compressional structures. Application to hydrocarbon exploration.

**GEOL 765 - Exploration Seismology (3 Credits)**

Seismic refraction and reflection methods including sources, instrumentation, data processing, velocity analysis, seismic modeling, and interpretation.

**Prerequisites:** GEOL 536 or equivalent.

**GEOL 766 - Advanced Seismology (3 Credits)**

Advanced treatment of elastic wave propagation, ray theory, normal modes, and free oscillations; applications to determine earth structure, modeling of earthquakes.

**Prerequisites:** GEOL 555 or equivalent.

**GEOL 770 - Ground Water Geology (3 Credits)**

The evaluation of aquifer characteristics by flow nets, Theis equation and graphic solution technique for water table and artesian conditions. Methodology of pumping tests and data collection. Prediction of aquifer response through time. Analog and computer analysis and interpretation of data.

**Prerequisites:** GEOL 570 or equivalent.

**GEOL 771 - Topics in Hydrogeology (3 Credits)**

Selected topics germane to the qualitative and quantitative aspects of the hydrologic cycle.

**GEOL 772 - Geologic Theories (3 Credits)**

Survey of the origin and development of geologic principles.

**GEOL 773 - Water Quality and Pollution (3 Credits)**

The nature of water; physical, chemical, and biological quality parameters. Techniques of quantitative analysis, methods of water quality control, and pollution abatement. Hydrogeochemical interactions and effects on water quality and waste disposal.

**Prerequisites:** GEOL 570 or equivalent.

**GEOL 774 - Solute Transport in Geologic Media (3 Credits)**

Processes influencing conservative and reactive transport of solutes through porous media. Geochemistry of natural waters; transport processes for geologic and environmental/contaminant problems; mathematical equations; numerical methods; field techniques.

**Prerequisites:** GEOL 570 or ECIV 563.

**GEOL 775 - Numerical Methods in Subsurface Hydrology (3 Credits)**

Formation of groundwater flow and solute transport problems, theory and practice, numerical methods, solution techniques.

**Cross-listed course:** ECIV 761

**GEOL 781 - Physical Oceanography (3 Credits)**

Geographic and hydrodynamic aspects of oceanography, with emphasis on estuaries. Physical properties of sea water and theories and methods involved in ocean currents, air-sea interaction, waves, and tides.

**Cross-listed course:** MSCI 781

**GEOL 782 - Chemical Oceanography (3 Credits)**

Chemical characteristics of sea water, distribution of properties, and chemical processes in the oceans, with emphasis on estuaries.

**Cross-listed course:** MSCI 782

**GEOL 783 - Oceanographic Time Series Analysis (3 Credits)**

Techniques in the analysis of oceanographic data sequences, including filtering techniques, fast Fourier transforms, and empirical orthogonal functions.

**Cross-listed course:** MSCI 783

**GEOL 784 - Geophysical Fluid Dynamics (3 Credits)**

Equations governing the large-scale dynamics of the atmosphere and ocean, rotational influence, shallow water equations, vorticity, quasi-geostrophic dynamics, Rossby waves, energy and enstrophy, and geostrophic turbulence.

**Prerequisites:** MATH 241 or ENGR 360 or GEOL 582/MSCI 582 or GEOL 781/MSCI 781.

**Cross-listed course:** MSCI 784

**GEOL 785 - Atmospheric Dynamics (3 Credits)**

Elementary applications of the basic equations, scale analysis, planetary boundary layer, atmospheric oscillations, synoptic and mesoscale systems, hydrodynamic instability, cyclogenesis, frontogenesis, energy cycle, momentum budget, and tropical motion systems.

**Cross-listed course:** MSCI 785

**GEOL 790 - Directed Individual Studies in Geology (1-6 Credits)**

Directed research topics to be individually assigned and supervised by graduate faculty.

**GEOL 799 - Thesis Preparation (1-9 Credits)****GEOL 800 - Seminar (General Geology) (0-1 Credits)**

Required of all graduate students.

**GEOL 801 - Seminar in Paleontology (2 Credits)****GEOL 802 - Seminar in Paleobotany (2 Credits)**

Readings and discussions on current topics.

**GEOL 803 - Seminar in Stratigraphy (2 Credits)**

Critical analysis of recent papers dealing with the reconstruction of marine paleoenvironments based on deep sea sediments. Emphasis will be placed on specific intervals of geologic time. Two discussion hours per week.

**GEOL 804 - Seminar in Stratigraphy (2 Credits)****GEOL 805 - Seminar in Earth and Ocean Science Education (1 Credit)**

Interactive community outreach and middle school geoscience education for graduate students interested in outreach at the K-12 level. Pass/fail grading.

**GEOL 818 - Seminar in Geophysics (2 Credits)**

Seminar related to current topics in geophysics.

**GEOL 819 - Seminar in Tectonophysics (2 Credits)**

Readings and discussion on current tectonophysical problems.

**GEOL 821 - Seminar in Mineralogy (2 Credits)****GEOL 824 - Seminar in Geochemistry (2 Credits)****GEOL 831 - Seminar in Structural Geology (2 Credits)****GEOL 832 - Seminar in Structural Geology (2 Credits)****GEOL 833 - Seminar in Structural Geology (2 Credits)****GEOL 834 - Seminar in Structural Geology (2 Credits)****GEOL 841 - Seminars in Petrology (2 Credits)****GEOL 842 - Seminar in Petrology (2 Credits)****GEOL 843 - Seminar in Petrology (2 Credits)****GEOL 844 - Seminar in Sedimentology (2 Credits)****GEOL 851 - Seminar in Sedimentology (2 Credits)****GEOL 854 - Seminar in Geomorphology (2 Credits)****GEOL 861 - Seminar in Hydrogeology (3 Credits)****GEOL 862 - Seminar in Hydrogeology (3 Credits)****GEOL 888 - Data Presentation Workshop (3 Credits)**

Preparation and presentation, oral and written, of geological data, discussed via examples from students' own work and from published material.

**GEOL 899 - Dissertation Preparation (1-12 Credits)**

## German (GERM)

**GERM 500 - Survey of German Culture (3 Credits)**

Historical survey of the German contribution to the intellectual and cultural life of Europe. Texts and films in German.

**Prerequisites:** advanced reading ability in German.

**GERM 515 - Introduction to German Linguistics (3 Credits)**

Structural and descriptive linguistics applied to the German language.

**Cross-listed course:** LING 503

**GERM 516 - History of the German Language (3 Credits)**

Development of German in the Germanic, Old High German, Middle High German, and New High German periods. Phonology, morphology, syntax, semantics, and the relationship between dialects and the standard language.

**Cross-listed course:** LING 733

**GERM 517 - Introduction to the Germanic Languages (3 Credits)**

Introduction to historical Germanic linguistics including a survey of the Old Germanic languages (Old English, Old Frisian, Old Saxon, Old High German, Old Norse, Gothic); comparative phonology, morphology, and syntax, typology of modern Germanic languages and dialects; and common Germanic in its Indo-European context.

**Cross-listed course:** LING 533

**GERM 518 - German Sociolinguistics (3 Credits)**

Introduction to the study of variation in Modern German. Traditional German dialectology and dialect geography, language and society, multilingualism in the German-speaking countries, German in contact with other languages.

**Cross-listed course:** LING 548

**GERM 580 - Topics in German Film (3 Credits)**

Examination of recurring themes and issues or of significant periods and influential styles in German film. Course content varies and individual topics will be announced with course title.

**GERM 598 - Selected Topics in German (3 Credits)****GERM 615 - Intensive Readings in German (3 Credits)**

Intensive reading for non-majors. Graduate students fulfill their foreign-language requirement with successful completion of the course.

Undergraduates may take the course as an elective only by permission of instructor. Grades S/U for graduates and undergraduates.

**GERM 700 - Introduction to Graduate Studies in Languages, Literatures, and Cultures (3 Credits)**

An introduction to graduate studies that includes a survey of contemporary literary theory, an overview of the current state of the profession, and instruction in how to carry out research and write at the graduate level.

**Cross-listed course:** CPLT 700, FREN 700, SPAN 700

**GERM 710 - Middle High German (3 Credits)**

A study of Middle High German language and literature with special emphasis on the lyric and epic poetry of the late 12th and early 13th centuries.

**GERM 711G - Old Germanic Languages - Gothic (3 Credits)**

Reading and translation of texts in of the Old Germanic languages: Old High German 711H, Old Saxon 711S, Old Norse 711N, or Gothic 711G.

May be repeated for credit with a different letter suffix from options noted above. Reading knowledge of Moderna German required.

**GERM 711H - Old Germanic Languages - Old High German (3 Credits)**

Reading and translation of texts in of the Old Germanic languages: Old High German 711H, Old Saxon 711S, Old Norse 711N, or Gothic 711G.

May be repeated for credit with a different letter suffix from options noted above. Reading knowledge of Moderna German required.

**GERM 711N - Old Germanic Languages - Old Norse (3 Credits)**

Reading and translation of texts in of the Old Germanic languages: Old High German 711H, Old Saxon 711S, Old Norse 711N, or Gothic 711G.

May be repeated for credit with a different letter suffix from options noted above. Reading knowledge of Moderna German required.

**GERM 711S - Old Germanic Languages - Old Saxon (3 Credits)**

Reading and translation of texts in of the Old Germanic languages: Old High German 711H, Old Saxon 711S, Old Norse 711N, or Gothic 711G.

May be repeated for credit with a different letter suffix from options noted above. Reading knowledge of Moderna German required.

**GERM 720 - The German Renaissance and Baroque (3 Credits)**

Reading and interpretation of significant literary works of the 16th and 17th centuries.

**GERM 730 - The German Enlightenment and its Counter-Currents (3 Credits)**

Reading and discussion of key literary and classical works from specific 18th-century movements, including Enlightenment, Storm and Stress, and Weimar Classicism.

**GERM 740 - German Romanticism (3 Credits)**

The development of German Romanticism, its major literary works and personalities.

**GERM 750 - German Realism (3 Credits)**

German Realism, its major literary works and background.

**GERM 760 - German Literature from 1889 to 1945 (3 Credits)**

Currents of German literature since Naturalism, accompanied by critical reading of characteristic works by major writers of the period.

**GERM 770 - Recent and Contemporary German Literature (3 Credits)**

The development of German literature since World War II, through critical reading and interpretation of major representative works.

**GERM 775 - Seminars on Selected Topics in Foreign Language Education (3 Credits)**

Topics will be identified by title in the schedule of classes. Each topic may be taken only once.

**GERM 776 - The Teaching of Foreign Languages in College (3 Credits)**

Basic principles of foreign language teaching in college combined with practical demonstrations. Required of all graduate assistants. This course will not count toward the 30-hour M.A. or M.A.T degree.

**GERM 777 - Supervised Instruction in Teaching Foreign Languages in College (0 Credits)**

Supervised direction of foreign language teaching in college. Required of all graduate assistants who are teaching. This course will not count toward the M.A. or M.A.T. degree.

**GERM 780 - German Seminar (3 Credits)**

Content Varies.

**GERM 781 - German Seminar (3 Credits)**

Content Varies.

**GERM 790 - Directed Reading and Research (3 Credits)****GERM 799 - Thesis Preparation (1-9 Credits)**

## Greek (GREK)

**GREK 501 - Herodotus (3 Credits)**

Readings from the Histories.

**GREK 502 - Thucydides (3 Credits)**

Readings from the History of the Peloponnesian War.

**GREK 533 - Sophocles (3 Credits)**

Selected plays.

**GREK 534 - Euripides (3 Credits)**

Selected plays.

**GREK 543 - Hesiod and the Homeric Hymns (3 Credits)**

Readings from the Works and Days, the Theogony, and the Homeric Hymns.

**GREK 550 - Greek Seminar (3 Credits)**

Authors and topics not covered in other Greek language courses, chosen to meet the needs of individual students. May be repeated with the approval of the department.

**GREK 560 - Independent Study (1-3 Credits)**

Special projects for independent study and research.

**GREK 561 - Independent Study (1-3 Credits)**

Special projects for independent study and research.

**GREK 614 - Intensive Grammar Review of Ancient Attic Greek (3 Credits)**

Intensive review for nonmajors designed to prepare them for GREK 615.

**GREK 615 - Intensive Readings in Ancient Attic Greek (3 Credits)**

Intensive reading for nonmajors. A review of grammar and syntax with reading of passages from Plato's Apology. Primarily for graduate students to fulfill the foreign-language reading requirement.

**Prerequisites:** GREK 614.

## Higher Education (EDHE)

**EDHE 600 - Special Problems in Higher Education and Student Affairs (1-3 Credits)**

The course is designed to provide opportunities for the study of special topics in higher education and student affairs administration.

**EDHE 720 - Advanced Study in Adult Education (3 Credits)**

Review of the major tenets and theories prominent in the adult learning literature and examination of historical, social, political, economic, and cultural factors influencing contemporary adult learning.

**Prerequisites:** graduate course in adult learning or development.

**EDHE 730 - Evolution of Higher Education in America (3 Credits)**

Development of environments, institutions, and individuals relevant to American higher education since the 17th century. Covers foundational history as relevant to contemporary administration, students, faculty, curricula, and policies at institutional, state, and federal levels.

**EDHE 731 - Student Affairs in Higher Education (3 Credits)**

Objectives and philosophy of student affairs, organizations and administration of student affairs divisions, and current trends and issues.

**EDHE 732 - The American College Student (3 Credits)**

Study of theories of college student development and learning and application of theories to enhance administrative practices in American higher education. Also examines the impact of the college environment on students.

**EDHE 733 - The Ideas of American Higher Education (3 Credits)**

Analysis of competing ideas of higher education with the purpose of helping students construct consistent sets of beliefs about values in higher education as a guide to understanding administrative and academic decisions.

**Prerequisites:** EDHE 730.

**EDHE 734 - The Community/Technical College (3 Credits)**

Introduction to historical and current events shaping two-year college missions, programs, clientele, and services. Preparation to assume student services and instructional positions within two-year colleges.

**EDHE 735 - Academic Advising in Higher Education (3 Credits)**

A comprehensive introduction to the field of academic advising with special emphasis on the topic Appreciative Advising.

**EDHE 736 - Financial Aspects of Higher Education (3 Credits)**

Survey of principles and practices of financing higher education institutions, including revenue generation and asset allocation. The course reviews methods of budgeting and business processes utilized by colleges and universities.

**EDHE 737 - Legal Aspects of Higher Education (3 Credits)**

Especially for faculty members and administrators in post-secondary institutions. Emphasis on techniques of legal research, constitutional provisions, statutory laws, court decisions, and regulations as they affect administration of higher education.

**EDHE 738 - Principles of College Teaching (3 Credits)**

Designed for prospective teachers in institutions of higher education. Considers the practice of teaching from philosophical, empirical, conceptual, and practical vantage points to prepare instructors for a changing and diverse student population.

**EDHE 739 - Seminar on Diversity in Higher Education (3 Credits)**

Survey of major topics related to social justice, diversity and inclusion in post-secondary institutions.

**EDHE 740 - Equity and Access in Higher Education (3 Credits)**

The legal, educational and public policy issues that affect access to higher education in America.

**EDHE 741 - Seminar on Ethical Issues in Higher Education (3 Credits)**

Examination of contemporary ethical issues and problems confronted by higher education administrators.

**EDHE 747 - Program Design and Implementation (3 Credits)**

An analysis of the theories, processes, and issues underlying the design and implementation of programs for learners in a post-secondary or professional context.

**EDHE 748 - Staff Development and Training (3 Credits)**

Review of the history, concepts, current techniques, and issues in staff development and training examination and application of skills required by the training practitioner and learning specialist.

**EDHE 790 - Independent Study (1-3 Credits)**

Independent Study Contract required.

**EDHE 799 - Thesis Preparation (1-9 Credits)****EDHE 830 - Organization, Administration, and Governance of Higher Education (3 Credits)**

Application of organization and administrative theory to post-secondary institutions of education, with emphasis on policy implementation.

**EDHE 831 - Internship in Higher Education and Student Affairs (3-6 Credits)**

Internship experience in higher education and student affairs offices. Students are placed in college, university, or agency administration offices under joint supervision of administrative personnel of these offices and faculty members. Prospectus must be submitted at least one month before start of the internship.

**EDHE 832 - Special Topics in Higher Education (3 Credits)**

Selected topical problems in higher education for advanced graduate students interested in the administration of higher education or college teaching. Possible topics include, evaluation, accountability, management, the learning society, the financial crisis, coordination vs. autonomy. May be used on a program of study up to three times.

**EDHE 833 - Contemporary Trends/Issues in Higher Education (3 Credits)**

Overview of the major trends and issues confronting American higher education.

**EDHE 834 - Internship in College Teaching (3-6 Credits)**

Designed to provide opportunity for supervised teaching experience in 2-year and 4-year institutions of higher education. Student will intern as teacher with day-to-day supervision by an experienced instructor. Weekly seminar on campus.

**Prerequisites:** EDHE 738.

**EDHE 835 - Leadership in Higher Education (3 Credits)**

Leadership theory and practice as applied to programs, units, and institutions in higher education. Addresses leadership strategies, options, characteristics, traits, and styles.

**EDHE 837 - Higher Education and Student Affairs Practicum I (3 Credits)**

Supervised experiences in different aspects of higher education and student affairs administration through work in various administrative offices at USC and other colleges.

**EDHE 838 - Higher Education and Student Affairs Practicum II (3 Credits)**

Additional opportunities for supervised experiences in higher education and student affairs administration.

**Prerequisites:** EDHE 837.

**EDHE 839 - Institutional Assessment in Higher Education (3 Credits)**

Concepts, models, and practice of institutional assessment. Student participation in an actual assessment project.

**EDHE 851 - Comparative Higher Education (3 Credits)**

Introduces students to the study of higher education in other countries, including policy and governance, finance, student life, the professoriate and related issues in comparative perspective. Includes a study abroad component with additional fees.

**EDHE 890 - Independent Study (1-3 Credits)**

Restricted to doctoral students. Independent Study Contract required.

**EDHE 899 - Dissertation Preparation (1-12 Credits)**

## History (HIST)

**HIST 562 - The Middle East and the United States: 1800 to the Present (3 Credits)**

Political, cultural, and economic ties which have linked the Middle East to the United States. Middle Eastern views of these relationships and their impact on modern Middle Eastern history.

**Graduation with Leadership Distinction:** GLD: Global Learning

**HIST 599 - Topics in History (3 Credits)**

Reading and research on selected historical topics. Course content varies and will be announced in the schedule of classes by title.

**HIST 640 - South Carolina History (3 Credits)**

South Carolina since colonization.

**HIST 641 - The American South Comes of Age (3 Credits)**

Changes in the Southern region since 1940.

**HIST 692 - Historic Preservation Field Experience--Charleston, S.C. (3 Credits)**

On-site introduction to historic preservation including research, interpretation, management, and economics of preservation. Offered only in Charleston during summer term.

**HIST 700 - Topics in History (3 Credits)**

Reading and research in selected historical subjects.

**HIST 701 - Reading Seminar in Colonial American History (3 Credits)**

**HIST 702 - Reading Seminar in American History, 1789-1876 (3 Credits)**

**HIST 703 - Reading Seminar in American History since 1876 (3 Credits)**

**HIST 704 - Reading Seminar in Ancient History (3 Credits)**

**HIST 705 - Reading Seminar in Medieval History (3 Credits)**

**HIST 706 - Reading Seminar in Early Modern European History (3 Credits)**

**HIST 707A - Reading Seminar in Modern European History, 1789-1900 (3 Credits)**

Restricted to graduate students in history.

**HIST 707B - Reading Seminar in European History, 1900-Present (3 Credits)**

Restricted to graduate students in history.

**HIST 708 - Reading Seminar in Russian and East European History (3 Credits)**

**HIST 709 - Reading Seminar in British History, 1500-1815 (3 Credits)**

**HIST 710 - Reading Seminar in British History since 1815 (3 Credits)**

**HIST 712 - Reading Seminar in Special Fields (3 Credits)**

**HIST 713 - The Age of the Antonines (3 Credits)**

A consideration of the political, social, economic, and intellectual developments in the Roman world of the second century A.D.

**HIST 715 - The Crusades (3 Credits)**

Holy war and realpolitik in Mediterranean; East and West relations from the 10th through the 15th centuries.

**HIST 716 - Normandy, France, and England, 911-1453 (3 Credits)**

The development of the French and English monarchies from the establishment of Normandy to the end of the Hundred Years' War.

**HIST 720 - Introduction to the Study of History (3 Credits)**

Introduction to the field for students who intend to become professional historians. Covers debates concerning the writing of history with a focus on recent theoretical and methodological issues. Restricted to M.A. and Ph.D. students in history.

**HIST 721 - England Under the Tudors and Stuarts (3 Credits)**

A detailed study of the history of England, 1485-1714.

**HIST 722 - England Under the Tudors and Stuarts (3 Credits)**

A detailed study of the history of England, 1485-1714.

**HIST 725 - Modern British History (3 Credits)**

A reading course in the literature of British history since 1815.

**HIST 726 - Modern British History (3 Credits)**

A reading course in the literature of British history since 1815.

**HIST 727 - European Intellectual History, 1815-1900 (3 Credits)**

A reading course in art history, literature, and changing social thought in the 19th century.

**HIST 728 - European Intellectual History, 1900-1960 (3 Credits)**

A reading course in art, architecture, the cinema, literature, and social thought in the 20th century.

**HIST 729 - France since 1815 (3 Credits)**

Readings in the political, social, economic, and cultural history of modern France.

**HIST 730 - Russia from Peter the Great to Nicholas I (3 Credits)**

The history of Russia from 1675-1855.

**HIST 731 - Russia, 1855-1930 (3 Credits)**

A reading course dealing with specific problems of modern Russian history.

**HIST 732 - European Diplomatic History, 1870-1914 (3 Credits)**

**HIST 733 - Contemporary Europe (3 Credits)**

**HIST 734 - Empire and Nation in Modern Europe (3 Credits)**

Comparative study of the concepts and dynamics of empire and nation in 19th- and 20th-century Europe.

**HIST 735 - State and Society in Eastern Europe (3 Credits)**

Selected topics in the development of the area in the 19th and 20th centuries.

**HIST 739 - Readings in Pre-Modern Chinese History (3 Credits)**

Selected topics in the history of China from the founding of the Han Dynasty in 202 B.C. to the end of the Ming Dynasty in A.D. 1644.

**HIST 740 - China and the West, 1840-1949 (3 Credits)**

A reading course on political, intellectual, and social changes in China resulting from the increased contacts with the West.

**HIST 741 - Readings in the Social History of Sport (3 Credits)**

A reading and discussion of the analytical and critical literature on sport history.

**Cross-listed course:** PEDU 741

**HIST 744 - French Revolution and Napoleonic Era (3 Credits)**

Reading course in the historical literature of the revolutionary era, including the 18th-century background.

**HIST 745 - Readings in Modern Japanese History (3 Credits)**

Topics include the Meiji Restoration, industrialization, nationhood and nationalism, World War II, and postwar changes.

**HIST 748 - The Middle East and North Africa, 1798-1962 (3 Credits)**

A reading course emphasizing political, intellectual, social, and religious movements in the Ottoman Empire and its successor states. Special attention to the growth of contacts between the Middle East and the West.

**HIST 752 - Readings in American Colonial History (3 Credits)**

**HIST 753 - The Coming of the Civil War, 1815-1860 (3 Credits)**

A study of the various factors which produced a breakdown of the democratic process in the United States and produced a domestic war.

**HIST 754 - Rise of Industrialism (3 Credits)**

**HIST 755 - Contemporary United States (3 Credits)**

**HIST 756 - United States History, 1800-1850 (3 Credits)**

**HIST 757 - African American Women in Nineteenth and Twentieth Centuries (3 Credits)**

This course will acquaint students with some of the secondary literature in African American women's history from the late nineteenth century through the twentieth century. The course examines the impact of race, gender, and class on the lives of black women and explores the historical relationship between African American women, work, family, community, and politics.

**Cross-listed course:** WGST 757

**HIST 758 - Capital City Field School: Theory and Practice of Historic Preservation (3 Credits)**

Introduction to theory and practice of historic preservation, taught in Columbia through on-campus classes, off-campus meetings with working professionals, and site visits around the Midlands.

**HIST 761 - Southern Intellectual and Cultural History (3 Credits)**

A study of the Southern mind together with an investigation of such other aspects of Southern civilization as are clearly related to the mental life of the region.

**HIST 762 - The New South (3 Credits)**

A survey of the economic, social, and political development of the Southern region since 1876.

**HIST 763 - Victorian America (3 Credits)**

Readings in the social and political history of the United States in the period from Reconstruction to the First World War.

**HIST 764 - History of American Women (3 Credits)**

Selected research topics on the cultural, social, economic, and political roles and contributions of American women.

**Cross-listed course:** WGST 764

**HIST 765 - Readings in American Diplomatic History, 1776-1914 (3 Credits)****HIST 766 - Readings in American Diplomatic History, 1914-present (3 Credits)****HIST 770 - Latin American History (3 Credits)**

Readings in selected topics in Latin American history.

**HIST 772 - Exploring Ethnohistory (3 Credits)**

Cross-cultural study of history. Includes theoretical perspectives and cases from the Americas, Europe, Africa, and Asia.

**Cross-listed course:** ANTH 773

**HIST 773 - History of Mexico (3 Credits)**

Readings in the political, economic and social history of Mexico.

**HIST 774 - Atlantic World History, 15th to 19th Century (3 Credits)**

Analysis of the methodological, conceptual, and historiographical debates dealing with the social, political, and cultural process that linked the continents bordering the Atlantic Ocean from the 15th to the 19th century.

**HIST 775 - Comparative History of Slavery in the Americas from the 15th to the 19th Century (3 Credits)**

Comparative approaches to the methodological, conceptual, and historiographical debates of slavery and the African Diaspora in the Americas, 15th to the 19th century.

**HIST 776 - History of Brazil (3 Credits)**

Readings in the political, economic and social history of Brazil.

**HIST 780 - Readings in Modern Military Thought (3 Credits)**

Major military thought from the French Revolution to the present.

**HIST 781 - History and Theory of Museums (3 Credits)**

Museums as central places for the creation, presentation, and representation of human knowledge and enhancement of civic ritual in modern states. U.S. museums considered in international context.

**HIST 782 - Business History (3 Credits)**

Readings in the modern history of business in Europe and America.

**HIST 783 - History and Theory (3 Credits)**

Examination of theory and case studies highlighting current themes in cultural history. Topics may include memory, ethnicity and race, gender and sexuality, popular culture, and truth and objectivity.

**HIST 784 - Modern British Material Culture (3 Credits)**

Use of material culture by historians of modern Britain including the country house, food and drink, slums and suburbs, the seaside resort, and the public school.

**HIST 785 - Comparative History of Time (3 Credits)**

Historical study of time-consciousness; how different modes of production have stimulated different forms of time-consciousness in American and other cultures.

**HIST 786 - Comparative Applied History, U.S. and U.K. (3 Credits)**

Summer field school in the U.K. to provide comparisons with U.S. theory and practice in archives administration, museum management, and historic preservation.

**HIST 787 - Material Culture Studies (3 Credits)**

Seminar in historical study of material culture; principal disciplinary and theoretical perspectives; emphasis on material culture of North America.

**Cross-listed course:** ANTH 787

**HIST 788 - Memory, History, and Space (3 Credits)**

A seminar in the historical study of buildings, the built environment, and cultural landscape.

**HIST 789 - Historic Site Interpretation (3 Credits)**

An examination of the issues and problems in the interpretation of historic house museums and historic sites, with special emphasis on the development of an interpretive exhibit related to state and local history. Field trips.

**HIST 790 - Archival Administration and Techniques (3 Credits)**

The nature, value, and use of public and private archives; the principles and techniques for preservation, arrangement, description, and reference service for archives, personal papers, and historical manuscripts.

**HIST 791 - Historical Editing (3 Credits)**

An introduction to and a synopsis of the editorial process, including canons of selection and textual criticism; the editorial commitment; annotation; preparing manuscript for the printer; and the one-person editorial project.

**HIST 792 - Historic Preservation (3 Credits)**

An examination of the preservation process, including the history of historic preservation, the development of preservation administrative systems, and preservation research methods and strategies. Field trips.

**HIST 793 - State and Local History (3 Credits)**

An intensive inquiry into the source materials of South Carolina and the unique problems associated with state and local history.

**HIST 794 - Research for Teaching (3 Credits)**

Course to familiarize M.A.T. students with the basic bibliographic aids and printed sources useful for the preparation of lectures.

**HIST 795 - Special Topics: Study Travel in History (1-6 Credits)**

Class time will be spent preparing a project that can be completed by faculty-supervised travel in the United States or abroad. Designed to be offered during summer sessions.

**HIST 796 - European Historiography (3 Credits)**

A course whose purpose is to acquaint students with the development of European historiography, schools of historical thought and interpretation. This course or HIST 797 is required of all history graduate students.

**HIST 797 - American Historiography (3 Credits)**

A course whose purpose is to acquaint students with the development of American historiography, schools of historical thought and interpretation. This course or HIST 796 is required of all history graduate students.

**HIST 798 - Internship in History (3 Credits)**

The application of historical skills in a sponsoring historical or public agency.

**HIST 799 - Thesis Preparation (1-9 Credits)**

For master's candidates.

**HIST 800 - Topics in History Research (3 Credits)**

Writing seminar on selected historical subjects. May be repeated for credit as topics change.

**HIST 801 - Research Seminar in Colonial American History (3 Credits)**

Restricted to M.A. and Ph.D. students in history.

**HIST 802 - Research Seminar in American History, 1789-1876 (3 Credits)**

Restricted to M.A. and Ph.D. students in history.

**HIST 803 - Research Seminar in American History, 1876-present (3 Credits)**

Restricted to M.A. and Ph.D. students in history.

**HIST 804 - Research Seminar in Ancient History (3 Credits)**

Restricted to M.A. and Ph.D. students in history.

**HIST 805 - Research Seminar in Medieval History (3 Credits)**

Restricted to M.A. and Ph.D. students in history.

**HIST 806 - Research Seminar in Early Modern European History (3 Credits)**

Restricted to M.A. and Ph.D. students in history.

**HIST 807 - Research Seminar in Modern European History (3 Credits)**

Restricted to M.A. and Ph.D. students in history.

**HIST 810 - Research Seminar in British History (3 Credits)**

Restricted to M.A. and Ph.D. students in history.

**HIST 811 - Research Seminar in Latin American History (3 Credits)**

Restricted to M.A. and Ph.D. students in history.

**HIST 812 - Research Seminar in East Asian History (3 Credits)**

Restricted to M.A. and Ph.D. students in history.

**HIST 813 - Research Seminar in African History (3 Credits)**

Restricted to M.A. and Ph.D. students in history.

**HIST 814 - Research Seminar in Middle Eastern and Islamic History (3 Credits)**

Restricted to M.A. and Ph.D. students in history.

**HIST 815 - Dissertation Prospectus Seminar (3 Credits)**

Restricted to Ph.D. students in history.

**HIST 816 - Historical Research Methods (3 Credits)**

The historical research process, including the definition of research, the determination, collection, and analysis of historical evidence.

**HIST 899 - Dissertation Preparation (1-12 Credits)**

## Hlth Promo Educ & Beh (HPEB)

**HPEB 501 - Human Sexuality Education (3 Credits)**

Planning, implementation and evaluation of effective sexuality education programs. Includes strategies for educating about a variety of sexuality topics (e.g., reproductive biology, relationships, HIV/AIDS, sexual orientation, pregnancy, childbirth, and parenting).

**HPEB 502 - Applied Aspects of Human Nutrition (3 Credits)**

Application of nutrition principles including functions of food and nutrients in health and disease prevention throughout the life cycle. Applied topics include weight management, food safety, and other contemporary issues.

**Graduation with Leadership Distinction:** GLD: Community Service

**HPEB 511 - Health Problems in a Changing Society (3 Credits)**

Current and emerging health problems in society: causes, effects, and prevention.

**Graduation with Leadership Distinction:** GLD: Community Service, GLD: Diversity and Social Advocacy

**HPEB 512 - Southern Discomfort: Public Health in the American South (3 Credits)**

Investigation of the unique health and disease profile of the American South, including regional disparities that remain unresolved despite a public health revolution. Topics range from endemic diseases of the antebellum period to the current HIV/AIDS crisis, and ethics of research.

**HPEB 513 - Race, Ethnicity, and Health: Examining Health Inequalities (3 Credits)**

A comprehensive overview of race/ethnicity and health. Class discussions will focus on comparing health status and health outcomes of different racial/ethnic groups in the U.S. and discussing possible explanations for inequalities from a behavioral science perspective.

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy

**HPEB 521 - The Total School Health Program (3 Credits)**

A course designed to acquaint the student with the various facets of the modern school health program. Includes school responsibilities for health and safety instruction, school health services, school environmental health problems, school and community relationships, resources for health, and evaluation of programs.

**HPEB 540 - Drug Prevention (3 Credits)**

Nature of drug actions, motivational factors that influence the use and abuse of drugs, and examination and evaluation of procedures to provide effective drug prevention efforts.

**HPEB 542 - Tobacco Prevention and Control in Public Health (3 Credits)**

Examines policies and practices for tobacco prevention and control in public health.

**HPEB 547 - Consumer Health in Contemporary Society (3 Credits)**

An analysis and appraisal of issues related to the production and distribution of products and services as these activities affect consumer health.

**HPEB 550 - Behavioral Concepts and Processes for the Health Professional (3 Credits)**

The development of interpersonal skills in dealing with health clients in various settings.

**HPEB 551 - Medical Anthropology: Field Work (3 Credits)**

Application of observation techniques, field notes, informant interviewing, and secondary data analysis to interpreting differential perceptions of health problem solving in the community and clinic.

**HPEB 552 - Medical Anthropology (3 Credits)**

Socio-cultural factors in health, illness, healing, and in medical systems. Cross-cultural and ethnographic evidence for public health research and program applications.

**Cross-listed course:** ANTH 552

**Graduation with Leadership Distinction:** GLD: Research

**HPEB 553 - Community Health Problems (3 Credits)**

Identification and analysis of major community health problems, their causes, the roles of individuals, community agencies, and government in affecting their solutions. Emphasis upon personal involvement and the responsibility for community health.

**Graduation with Leadership Distinction:** GLD: Community Service



**HPEB 555 - Managing Stress (3 Credits)**

Conceptualizing the nature of the stress; psychological, emotional, and spiritual aspects of stress; competency in the active management of stress and mobilizing support.

**HPEB 560 - Cooking Up a Storm: Food, Globalization, Localization, and Health in the South (3 Credits)**

The role of food in defining our relationships to our family, community, nation, and world. How food underlies much of the political, economic, and social struggles throughout the world.

**HPEB 620 - Nutrition Through the Life Cycle (3 Credits)**

Examination of nutritional concerns, requirements, and metabolism from pre-conception through the aging process; analysis of cultural, environmental, psychosocial, physical, and economic factors affecting nutritional status through the life cycle; and methods for assuring adequate nutrition through dietary selection, promotion of healthy eating throughout the life cycle and nutritional assessment for each state of the life cycle.

**HPEB 621 - Maternal and Child Health (3 Credits)**

Public health issues, social and behavioral science, policies, programs, and services related to maternal and child health in the United States and other countries.

**Cross-listed course:** WGST 621

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

**HPEB 627 - Lesbian, Gay, Bisexual and Transgender (LGBT) Health (3 Credits)**

Health status and concerns of lesbian, gay, bisexual, and transgender communities. Includes an examination of measurement issues and methodological considerations in research, as well as intervention efforts targeting LGBT populations.

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy

**HPEB 631 - Health Promotion for Elementary and Middle School Teachers (3 Credits)**

A multimedia course emphasizing health education strategies for major S.C. health problems, risk factors, and concepts of positive health behavior.

**HPEB 640 - Behavioral Economics in Public Health (3 Credits)**

The ways behavioral economics can help achieve goals in public health and health care. How behavioral insights can be applied to reach promotion aims ranging from achieving weight loss to medication adherence to appointment attendance.

**HPEB 653 - Nutrition Assessment and Counseling (3 Credits)**

Assessment of nutritional outcomes and work with research participants/patients. Methods for collection of dietary data, anthropometry, and body composition, including the use of new technologies. Nutrition counseling and interviewing techniques useful in gathering nutrition information.

**HPEB 654 - Maternal and Child Nutrition (3 Credits)**

A survey of current concepts in clinical and public health nutrition which are unique to infants, children, and pregnant and lactating women.

**HPEB 674 - Social Networks, Social Capital, and Health (3 Credits)**

Examination of health sciences and sociological research on social networks, social capital, and health. Theoretical and methodological foundations for network analysis of social relationships and health, design of public health interventions, and use of online social networks to promote health. Key constructs include social support, social capital, and social diffusion.

**HPEB 679 - Addressing Childhood Obesity through Community Approaches (2 Credits)**

Approaches for prevention of childhood obesity, using perspectives from public health, social work, exercise science, pharmacy, medicine, and behavioral nutrition. Training to teach diet/physical activity lessons in elementary school settings.

**Cross-listed course:** SOWK 679

**HPEB 680 - Laboratory Techniques in Physiological Measurement (3 Credits)**

Practical laboratory skills and theoretical bases of measurements in human physiology; bioelectrical potentials, respiratory physiology, energy expenditure, body composition, temperature regulation, and biochemical assays.

**HPEB 683 - Contemporary Topics in Sexual Health (3 Credits)**

Comprehensive overview of contemporary topics in sexual health.

**HPEB 684 - HIV/STI Prevention (3 Credits)**

The role of effective behavioral interventions in preventing the spread of the human immunodeficiency virus (HIV) and other sexually transmitted infections (STI) among diverse populations.

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy, GLD: Research

**HPEB 690 - Independent Study (1-6 Credits)**

Topics to be assigned and approved by advisor and department head.

**HPEB 700 - Concepts and Methods in Health Promotion (3 Credits)**

Fundamental principles and practices of public health promotion including history, ethics, cultural competence, professional responsibilities, overview of theory and models, and selection and implementation of instructional methods.

**HPEB 701 - Theoretical Foundations of Health Promotion (3 Credits)**

Role of theory in shaping research and practice in health promotion and education; historical and ongoing interaction between health education and the applied social sciences.

**HPEB 702 - Planning Health Promotion Programs (3 Credits)**

Health promotion planning frameworks; issues in planning, implementing, and evaluating health promotion programs in a variety of settings.

**HPEB 703 - Public Health Education Seminar (1-3 Credits)**

An examination of controversial and critical issues confronting the health educator, including ethical and professional concerns relating to the practice of health education in a variety of settings.

**HPEB 704 - Health Education Research Seminar (1 Credit)**

Presentation and discussion of research topics in health education. May be repeated for up to a total of 3 hours.

**HPEB 705 - Contemporary Concepts of Health and Health Education (3 Credits)**

This course will explore and analyze various concepts of health, disease, and illness as applicable to health education. Consideration will be given to alternative concepts of health and their implications for directions in health education.

**HPEB 706 - Consultation in Health Systems (3 Credits)**

Consultation for role, program, and organization development in local and state health agencies, and in communities. Advanced practice in consulting roles aimed at system change.

**HPEB 707 - Health Promotion Research Methods (3 Credits)**

Research methods applicable to the study of individual and group health behavior. Interfaces behavioral theory, research design and methods, and data analysis/interpretation. Introduction to evaluating health promotion research and evaluation.

**HPEB 708 - Health Education Methods (3 Credits)**

Curricular planning and instructional strategies utilized in public health education settings.

**HPEB 709 - Stress and Support Concepts and Management (3 Credits)**

Identifies environmental, organizational, interpersonal, and individual patterns of stress with particular reference to health professionals; competency in the active management of stress and mobilizing support in health settings and organizations is evaluated.

**HPEB 710 - Evaluation of Health Promotion Programs (3 Credits)**

Planning and implementation of health education program evaluations. Emphasis on political, practical, and theoretical aspects of evaluation.

**Prerequisites:** HPEB 700.

**HPEB 711 - Applied Health Communication (3 Credits)**

Application of communication, media, and health behavior theory to the development of health communication messages and campaigns.

**HPEB 712 - Changing Health Practices (3 Credits)**

Students plan and implement a class on changing a health practice such as exercise, diet, or smoking. Lectures and reading assignments on theoretical foundations of how to conduct classes in changing health practices.

**HPEB 713 - Behavioral Aspects of Physical Activity (3 Credits)**

Psychosocial and behavioral factors in physical activity. Topics include mental health effects of exercise, behavior change theories applied to physical activity, and physical activity determinants and interventions.

**Cross-listed course:** EXSC 710

**HPEB 715 - Qualitative Research Methods in Public Health (3 Credits)**

An overview of qualitative data collection and analysis methods commonly used in public health research with an emphasis on practical applications and hands-on experience.

**HPEB 720 - Coordinating the School Health Program (3 Credits)**

For persons administratively responsible for the school health program and for individuals involved in discharging the various responsibilities. Characteristics of the Health Education Coordinator; areas of responsibility, policies and procedures relative to health education needs; curricular patterns; criteria for an extensive evaluation of selected school health programs.

**Prerequisites:** HPEB 521.

**HPEB 722 - Health Education Curriculum Development (3 Credits)**

The basis and nature of the health curriculum, its development, and appraisal of state and national health education curricula.

**HPEB 726 - Prevention of Teen Pregnancy (3 Credits)**

Design and implementation of community-based educational practices and services to prevent teen pregnancy.

**HPEB 730 - Programs for Patient Education (3 Credits)**

Knowledge and skills for identifying needs, obtaining support, designing curricula, organizing resources, training personnel, implementing activities, and evaluating patient education programs are presented.

**HPEB 731 - Health Promotion for Older Adults (3 Credits)**

Research and practice issues in health promotion with older adults, including the impact of ageism, ethnicity, gender, normal aging changes, self-management skills, and social networks on healthy aging.

**HPEB 742 - Alcohol, Drugs, and Public Health Policy (3 Credits)**

Public health policy issues related to treatment, prevention, research, and education in the field of alcohol and drug abuse.

**HPEB 748 - Community Health Development (3 Credits)**

Organizational development, policy influence, capacity building, empowerment, community diagnosis and coalition development for enhancing health.

**Graduation with Leadership Distinction:** GLD: Community Service

**HPEB 750 - Health Implications of Stress and Disease (3 Credits)**

Causative agents of chronic disease, with particular emphasis placed on those illnesses which have been termed psychosomatic and related to or caused by stress; physiological response of the individual to contemporary psychological stressors as well as methods of adaptation and prophylaxis.

**HPEB 751 - Physical Activity and Health (3 Credits)**

An examination of physical activity/exercise habit patterns as they relate to health status. Emphasis on the chronic effects of exercise.

**HPEB 752 - Nutrition and Public Health (3 Credits)**

A study of the relationship of human nutrition to public health and the potential for risk reduction through health education.

**Prerequisites:** HPEB 502 or equivalent.

**HPEB 753 - Obesity and Eating Disorders (3 Credits)**

The public health implications of obesity and eating disorders, considerations of causes, and intervention strategies.

**HPEB 754 - EXSC 700 or HPEB 700 or consent of instructor (3 Credits)**

Role of the physical activity specialist within the community health department. Development, initiation, and evaluation of campaigns, resources, community capacity building, and coalitions to promote physical activity.

**Prerequisites:** EXSC 700 or HPEB 700.

**HPEB 760 - Health Education in Occupational Worksites (3 Credits)**

An overview of health education program models and strategies designed for workers in industry and business.

**HPEB 769 - Interdisciplinary Perspectives on Child Abuse and Neglect (3 Credits)**

Current knowledge about child abuse and neglect, including typologies, etiology, effects, and current practice interventions.

**HPEB 770 - Health Education in Developing Countries (3 Credits)**

Development of programs in predominantly rural third world countries. Foreign nationals may substitute this course for HPEB 700.

**HPEB 771 - Socio-Cultural Perspectives on Population Health (3 Credits)**

Theories, measurement, and empirical evidence related to macro-level factors and health. How socio-cultural and physical environments as well as socially ascribed identities can constrain or promote health.

**HPEB 772 - Current Trends in Developing World Health (3 Credits)**

Current issues in health of the developing world as represented in literature, policy documents, and program materials. For students having worked either in public health or in the developing world.

**HPEB 773 - International Public Health Seminar (1 Credit)**

Various lecturers address the state of the art of public health strategies for third world countries aimed at the reduction of death and disease. Repeatable up to a maximum of 3 credit hours.

**HPEB 779 - Injury Prevention and Control (3 Credits)**

Etiology of injuries and strategies for their prevention are examined within an interdisciplinary framework.

**HPEB 782A - Teaching Internship (Health) (3 Credits)**

Application of effective teaching techniques and organization of instructional settings in health for K-12.

**Prerequisites:** acceptance to the Professional Program in Education.

**Cross-listed course:** EDTE 782A

**HPEB 782B - Teaching Internship (Health) (9 Credits)**

Application of effective teaching techniques and organization of instructional settings in health for K-12.

**Prerequisites:** HPEB 782A.

**Corequisite:** EDSE 584.

**HPEB 790 - Independent Study (1-6 Credits)****HPEB 792 - Selected Topics in Health Education (1-6 Credits)**

A study of selected issues confronted in health education programs.

**HPEB 796 - Health Education Project (1-6 Credits)**

Performance of a predetermined work or service project in a health education setting.

**HPEB 797 - Applied Practice Experience (5 Credits)**

The focus of this course is the synthesis and application of selected program learning objectives in the performance of an applied work or service project in a public need setting.

**HPEB 798A - Public Health Practicum Seminar (3 Credits)**

Synthesis and application of MPH competencies for professional development, culminating in a practicum fieldwork contract.

**Prerequisites:** HPEB 700, HPEB 701, HPEB 702, HPEB 707, HPEB 710, HPEB 748.

**HPEB 798B - Public Health Practicum Fieldwork (3 Credits)**

Performance of a limited work or service project in a public need setting, pursuit of planned, learning objectives related to previously identified aspects of the student's chosen role.

**Prerequisites:** HPEB 798A.

**HPEB 799 - Thesis Preparation (1-9 Credits)****HPEB 802 - Implementing and Monitoring Health Promotion Interventions (3 Credits)**

This advanced course will examine the process of implementing and monitoring theory- and evidence-based health promotion interventions with a strong emphasis on research interventions.

**HPEB 810 - Applied Measurement in Health Education Research (3 Credits)**

This doctoral seminar will examine conceptual and measurement issues regarding psychosocial constructs typically used in health education and health survey research--specifically health beliefs, health attitudes, health behaviors, health status, wellness, and perceptions of health care contexts.

**HPEB 811 - Advanced Public Health Communication: Theory and Methods (3 Credits)**

Advanced conceptualization, development, and evaluation of communication strategies that aim to promote public health.

**Prerequisites:** HPEB 711 or equivalent course.

**HPEB 815 - Theory-Driven Analysis (3 Credits)**

Intermediate-level overview of methods for answering theoretically-informed research questions using quantitative data. Designed for applied researchers who seek a better understanding of statistical methods from describing a population to testing a conceptual model. Practical guidance for organizing, writing about, and presenting results from basic and multivariate statistical analyses.

**Prerequisites:** BIOS 757 or an equivalent.

**HPEB 818 - Advanced Evaluation of Health Promotion Programs (3 Credits)**

Evaluation methods including formative, retrospective and monitoring techniques; survey and trend analysis; application of experimental and quasi-experimental designs, triangulation, and cost-accounting.

**HPEB 820 - Public Health Advocacy and Policy (3 Credits)**

Overview of the key concepts and practices in advocacy efforts to promote the health of human populations through policy, including theories and conceptual frameworks for understanding how social and political change happens. Emphasis on strategies for promoting public health policies, and methods for evaluating advocacy activities and policy impacts.

**HPEB 824 - Social and Physical Environment Interventions in Health Promotion (3 Credits)**

This advanced course examines issues related to planning, implementing or evaluating health promotion interventions that target change in physical and social including policy environments.

**HPEB 898 - Doctor of Public Health Practicum (1-6 Credits)**

Applied comprehensive fieldwork experience which facilitates the synthesis of knowledge, skills and application of DrPH core competencies and core content of the discipline. Course may be taken a maximum of 3 times. Enrollment restricted to DrPH students.

**HPEB 899 - Dissertation Preparation (1-12 Credits)**

**Prerequisite:** one full year, 18 hrs, of graduate study beyond the master's level.

## Hlth Serv Policy Mgmt (HSPM)

**HSPM 500 - Introduction to Health Care Management and Organization (3 Credits)**

Provide students with overview of health services management, management techniques and the different roles and functions of the different health care services. Use of field trips and guest speakers from different health care providers.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

**HSPM 509 - Fundamentals of Rural Health (3 Credits)**

Overview of the delivery and financing of health care in the rural U.S., with emphasis on vulnerable rural populations and access to care.

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy

**HSPM 510 - Comparative Health Systems and Health System Efficiency, Effectiveness, Sustainability and Equity (3 Credits)**

Comparative health systems of the world including health system organization, management, financing, resource use and health outcomes.

**HSPM 513 - Issues in Health Care Information Management (3 Credits)**

An introduction to data management in healthcare institutions for undergraduate students and non-HSPM major graduate students. Topics include the nature of medical data, legal protections surrounding such information, and basis strategies for managing information technology resources.

**Prerequisites:** HSPM 500.

**HSPM 514 - Introduction to Health Services Delivery and Policy (3 Credits)**

Overview of health services delivery in the United States, including organization and financing of health care, health insurance practices, primary and long-term care among other topics.

**HSPM 530 - Finance in Health Administration (3 Credits)**

Introduction to health care finance. Course will teach reimbursement structures, regulatory mechanisms, cost control, and related factors unique to healthcare organizations.

**Prerequisites:** BADM 225.

**HSPM 700 - Approaches and Concepts for Health Administration (3 Credits)**

An interdisciplinary perspective on the field of health administration. Philosophy concepts, and skills of implementation, management, and evaluation are presented and discussed. Principles in the practice of health administration are applied to identified problems and situations.

**HSPM 706 - Health and Economic Development: Interrelationships among health, poverty and economic progress (3 Credits)**

Linkages among economic development, poverty, inequality and health. Direct and indirect effects of health in economic development.

**HSPM 707 - Ethical Issues in Health Care and Research (3 Credits)**

The ethical dimensions of decision-making in health care delivery, administration and epidemiologic research. Provides ethical foundations for discussion of topics in health-related research and practice.

**Cross-listed course:** EPID 707

**HSPM 708 - Methods of Economic Evaluation of Health Projects, Policies and Programs (3 Credits)**

Concepts and principles of economic evaluation and applications of evaluation techniques (e.g., cost-effectiveness, cost-utility, cost-benefits, decision modeling) to the real-world issues and problems.

**HSPM 709 - Perspectives in Rural Health (3 Credits)**

Analysis of issues and demographic, economic, and political forces affecting health care delivery systems in rural America. Examines structure of federal and state public health programs that impact rural health.

**HSPM 711 - Health Politics (3 Credits)**

Analysis of issues and forces affecting health delivery through the public sector; major models of political decision-making; and current health legislation.

**HSPM 712 - Health Economics (3 Credits)**

A critical introduction to the application of economic analysis to problems in the health care field. Related scientific literature.

**HSPM 713 - Information Systems in Health Administration (3 Credits)**

Understanding and optimizing the use of health information systems and allied technologies including electronic medical records to improve healthcare organizations' performance in the areas of care delivery, operations management, quality, safety, and accessibility of healthcare services.

**HSPM 714 - Perspectives in Community Health Organizations (3 Credits)**

Origins/functions of public health and the U.S. health-care system; special attention to public health perspectives, social/behavioral determinants of health and environmental health issues.

**HSPM 715 - Community Assessment and the Delivery of Health Care Services (3 Credits)**

An introduction to the concepts of community assessment and managerial epidemiology, and their use in the population-based planning and management of integrated health systems.

**HSPM 716 - Quantitative Methods for Health Administration (3 Credits)**

An introduction to quantitative methods and analytical techniques with application to health administration. The course includes the use of models and simulation for decision making and control in health administration.

**Prerequisites:** HSPM 775 or BIOS 700.

**HSPM 717 - Health Services Research Methods I (3 Credits)**

Evaluation of the efficiency and effectiveness of health programs. Different research designs will be discussed in terms of their relevance to specific evaluation problems.

**HSPM 718 - Health Planning (3 Credits)**

Strategy and tactics of state, regional, institutional health services planning. Special attention to the role of marketing.

**Prerequisites:** HSPM 733 or equivalent.

**HSPM 719 - Health Services Research Methods II (3 Credits)**

The role and methods of sample surveys in health administration; development of survey designs; survey procedures; questionnaire design; interviewing procedures; codebook design; utilization of computer program packages in data analysis.

**Prerequisites:** BIOS 700.

**HSPM 720 - Health Services Research Methods III (3 Credits)**

Econometric methods for making proper statistical inferences using estimates for observational data.

**HSPM 722 - Sociology of Health for Health Services Managers I (1 Credit)**

Sociological approaches to the study of health and the decision to seek health care.

**HSPM 723 - Sociology of Health for Health Services Managers II (1 Credit)**

Sociological approaches to the study of health care institutions.

**HSPM 724 - Health Law (3 Credits)**

Legal basis for health care activities; health care provider laws, regulations, antitrust and organizational governance.

**HSPM 725 - Human Resources Issues in Health Care Sector (3 Credits)**

A study of the current problems, theories, models, and strategics associated with managing human resources in the health care sector.

**HSPM 726 - Applied Public Health Law for Administrators (3 Credits)**

Course addresses the significant legal and ethical issues in Public Health practice; basis for Public Health actions, authorities and limitations; role of the three branches of government in Public Health protection.

**HSPM 727 - Advancing Public Health Policy (3 Credits)**

Advancing public health policy through design and implementation of a policy change campaign.

**Prerequisites:** PUBH 730.

**HSPM 730 - Financing of Health Care (3 Credits)**

Application of the principles of financial management to the systems involved in the delivery of health care.

**Prerequisites:** BADM 660 or equivalent.

**HSPM 731 - Health Care Finance I (3 Credits)**

Provides working knowledge of financial management techniques for managers in the health care sector.

**Prerequisites:** HSPM 733.

**HSPM 732 - Health Care Finance II (3 Credits)**

Provides knowledge base and decision-making tools for financial management in health care organizations using financial management tools and principles.

**Prerequisites:** HSPM 731.

**HSPM 733 - Health Care Management Accounting (3 Credits)**

Financial accounting and internal accounting for management decision-making, including cost determination, cost control, performance evaluation and financial planning.

**Prerequisites:** Undergraduate course in accounting or competency in accounting through personal study of an undergraduate accounting text.

**HSPM 764 - Long-Term Care Administration (3 Credits)**

An overview of management and policy concepts and issues pertaining to long-term care facilities and programs.

**HSPM 765 - Leadership in Health Care Organizations (1 Credit)**

Seminar on theory of and practice of leadership as a manager in the health care industry.

**HSPM 766 - Health Services Administration I (3 Credits)**

Human Resources Management in health care and allied topics.

**Prerequisites:** HSPM 769.

**HSPM 768 - Health Services Administration II (3 Credits)**

Operations management in health care, supply chain management and logistics processes, health services process improvement.

**Prerequisites:** HSPM 716.

**HSPM 769 - Organizational Behavior (3 Credits)**

To explore organizational behavior at the micro level (individuals, motivation, leadership, conflict management) and macro level (social systems, inter-organizational relationships, change and innovation, performance and strategy, organizational design), with particular focus on health care environments.

**HSPM 770 - Decision Making For Health Care Executives (3 Credits)**

Case study format where students identify problems, evaluate alternatives and make decisions using health care leaders in the community to prepare cases. Integration of principles learned in other health care theory and management courses.

**Prerequisites:** HSPM 732, HSPM 718, and HSPM 769.

**HSPM 772 - International Health (3 Credits)**

Overview of international health status, demographics; communicable/noncommunicable diseases; health care needs, financing, and infrastructure delivery; and maternal and child health, family planning, and public health programs.

**HSPM 774 - Quality Management in Healthcare (3 Credits)**

Systems approach to quality management focusing on Lean and other quality management methods that can be directly applied in a healthcare setting. Group projects in local acute care settings allow students to practice quality management skills.

**Prerequisites:** HSPM 716, HSPM 731 or equivalent.

**HSPM 775 - Managerial Epidemiology and Statistics in Healthcare (3 Credits)**

Principles and tools of epidemiology applied to decision-making in a health care environment. Knowledge and skills useful to health services managers related to statistics, population health management and assessment of medical care processes/outcomes are taught.

**HSPM 776 - Physician Practice Management (3 Credits)**

Builds on prior MHA coursework on health care management to focus on specific knowledge and skills applicable to the management of physician practices.

**Prerequisites:** HSPM 731 and HSPM 769.

**HSPM 777 - Healthcare Policy and Principles of Health Insurance (3 Credits)**

Demand, supply, employment-based coverage, government-sponsored programs and managed care.

**HSPM 778 - Health Care Marketing (3 Credits)**

The principles of marketing applied to the health care setting.

**HSPM 788 - Public Health Practice Experience (3 Credits)**

Applied public health practice experience addressing management or policy need in public health setting.

**Prerequisites:** PUBH 725, PUBH 726, PUBH 730, PUBH 735 and 6 additional hours HSPM courses.

**HSPM 790 - Independent Study (1-6 Credits)****HSPM 791 - Selected Topics (1-6 Credits)**

Content varies by title. Course may be repeated for a total of 6 credit hours.

**HSPM 796 - Health Services Policy and Management MPH Capstone Course (2 Credits)**

Synthesis of foundational and HSPM MPH competencies in preparing a high quality grant proposal to address a public health problem.

**Prerequisites:** PUBH 725, PUBH 726, PUBH 730, PUBH 735, HSPM 712, HSPM 730, HSPM 768.

**HSPM 797 - Management Residency (1-3 Credits)**

On-site management project in a health care setting.

**HSPM 798 - Public Health Residency (3 Credits)**

Practicum in approved public health, community health, or health care setting emphasizing evaluation and service delivery planning or a project such as resolution of a management problem or evaluation of a program component.

**Prerequisites:** EPID 700, BIOS 700 and three additional hours in the major.

**HSPM 800 - Doctoral Seminar (1 Credit)**

Format for presentation of faculty research, doctoral student dissertation proposals and guest lecturers on timely issues in health care policy and management.

**HSPM 818 - Economic Evaluation and Policy Analysis of Health Services (3 Credits)**

The course foci is on theories and techniques used in conducting economic evaluations and policy analyses to ascertain the efficacy and effectiveness of public health and health care programs, services, and policies. Enrollment is restricted to DrPH or PhD students.

**Prerequisites:** HSPM 711, HSPM 712, HSPM 845 and HSPM 846.

**HSPM 820 - Public Health Leadership (3 Credits)**

The course is designed to give students knowledge and skills necessary to demonstrate leadership in a variety of public health venues. Course content will focus specifically on theories, skills, styles, and techniques used in providing leadership to public health and healthcare programs, services, and policy development, and research. Enrollment Restrictions: Students must be accepted into a PhD, DrPH, or MPH program.

**HSPM 845 - Advanced Study in Health Policy Management I (3 Credits)**

Readings and discussion of topics relevant to research in health administration/health sciences.

**HSPM 846 - Advanced Topics in Health Policy and Management II (3 Credits)**

Readings and discussion of major topics, including institutionally based issues, in research in health administration/health sciences.

**Prerequisites:** HSPM 845.

**HSPM 890 - Independent Study (1-3 Credits)**

Directed research on a topic to be developed by doctoral student and instructor. May be repeated for credit.

**HSPM 898 - Doctor of Public Health Practicum (6 Credits)**

Students are required to conduct applied public health methods and strategies as a part of their practicum experience. Examples of practicum include, but not limited to development, implementation, and evaluation of public health or healthcare services, policies, organizational development, and regulatory activities.

**HSPM 899 - Dissertation Preparation (1-12 Credits)**

One full year, 18 hrs, of graduate study beyond the master's level.

**Hosp Retail Sport Mgmt (HRSM)****HRSM 700 - Quantitative Methods in HRSM (3 Credits)**

This course introduces the basic knowledge of quantitative concepts, principles, and methods necessary for scientific investigation of research problems related to hospitality, retail, and sport management.

**Corequisite:** HRSM 788.

**HRSM 787 - Global Seminar in Hospitality, Retail, Sport & Technology Management (3 Credits)**

This is an interdisciplinary learning experience where students apply major specific constructs and current trends in hospitality, retail, sport and technology management in a study abroad context. Students will visit destinations and venues where they will interact with on site management. This course is for HRSM graduate students only and requires permission of the departmental graduate director. This course may be repeated twice for credit.

**HRSM 788 - Business Analytics in Hospitality, Retail, and Sport Management (3 Credits)**

The course is structured to help students apply concepts of scientific inquiry in practical business problems in the field of hospitality/tourism, retail, and sport management. This course will provide the student with an understanding of the process and the tools to support business problem identification, research design, information/data collection, data analytics, result visualization, and managerial decision-making of business cases.

**Prerequisites:** STAT 515.

**HRSM 795 - Field Project in Hospitality, Retail, and Sport Management (6 Credits)**

Work experience and participation in management decision-making in a hospitality/tourism, retail, or sport/entertainment business environment. Positions assigned on an individual basis with emphasis on oral and written communication skills, planning, and problem solving.

**HRSM 888 - Research Design in Hospitality, Retail, and Sport Management (3 Credits)**

The principles of research design, focusing on the application of these principles as they apply to sport and entertainment, hospitality, and/or tourism management.

**Hotel Rest Tourism Mgmt (HRTM)****HRTM 518 - Hospitality Human Capital and Talent Management (3 Credits)**

Effective methods for conducting, costing, and evaluating training and development procedures for hospitality supervisors and managers.

**HRTM 521 - Revenue Management in the Hospitality Industry (3 Credits)**

Examination of revenue management in the hospitality industry with an emphasis on the theory and dynamics of revenue management, the implementation of capacity management, forecasting and discounting.

**Prerequisites:** HRTM 450.

**Corequisite:** HTRM 421.

**HRTM 537 - Multi-Cultural Dimensions of the Hospitality Industry (3 Credits)**

Multicultural, multiracial, and multiethnic factors within the hospitality and tourism industry.

**Prerequisites:** MGMT 371 or RETL 344.

**HRTM 550 - Theme Park and Attractions Management (3 Credits)**

This course will give students an overview of the theme park and attractions industry. We will explore each of the areas of this industry including: history, venues, resources, ride operations, merchandising, food service and design.

**HRTM 557 - Security Management of Hotels and Restaurants (3 Credits)**

Individualized security programs, procedures, legal issues, and review of local, state, and federal laws that apply to the lodging and restaurant industry.

**Prerequisites:** HRTM 357 or equivalent.

**HRTM 560 - Advanced Lodging Management (3 Credits)**

Advanced principles of the management of hotels and resorts.

**Prerequisites:** HRTM 260.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

**Experiential Learning:** Experiential Learning Opportunity

**HRTM 564 - Advanced Meeting Management (3 Credits)**

Analysis of current issues and problems in the meetings industry with emphasis on planning, organizing, managing, and enhancing meetings.

**Prerequisites:** HRTM 364.

**HRTM 565 - International Lodging Management (3 Credits)**

Analysis of the structure of international lodging companies, challenges of marketing U.S. lodging companies abroad, and cultural differences in international management.

**Prerequisites:** HRTM 260.

**HRTM 567 - Timeshare and Vacation Ownership Management (3 Credits)**

Management of the timeshare and vacation ownership industry.

**HRTM 570 - Managing Food Service Operations (3 Credits)**

An advanced study of the food-service industry and its operations both internally and externally to the physical plant.

**Prerequisites:** HRTM 270.

**HRTM 575 - Advanced Topics in Wine (3 Credits)**

A viticultural and enological study of wine and wine regions around the world; from the vineyard to the table including grape varieties, wine regions and wine service. Students must be 21 years old.

**Prerequisites:** HRTM 475.

**HRTM 576 - Franchising within the Hospitality Industry (3 Credits)**

This course will focus on the study of multi-unit and franchise operations within the hospitality and tourism industry.

**Prerequisites:** BADM 371.

**HRTM 580 - Adventure Travel Management (3 Credits)**

Analysis of the adventure travel industry throughout the world, with emphasis on the management, marketing, and operation of an adventure travel business.

**HRTM 584 - Tourism Information Technology Issues (3 Credits)**

Information technologies such as e-commerce, e-marketing, and e-research are examined, critiqued, and applied within a tourism context.

**Prerequisites:** ITEC 264 or equivalent.

**HRTM 585 - Advanced Club Management (3 Credits)**

Advanced topics in hospitality management for the club industry.

**Prerequisites:** HRTM 285.

**HRTM 590 - Special Topics in HRTM (3 Credits)**

Advanced concepts, issues, and trends in the hospitality and tourism industry. May be taken twice for degree credit.

**HRTM 591 - Golf Tourism (3 Credits)**

Effective practices used in the planning, development, and promotion of golf tourism. Experiential learning component for evaluating selected issues, problem solving, and participating in the operational performance of a large golf tournament. Employment with a pre-approved golf tournament or permission of instructor.

**HRTM 592 - Golf Tourism Consumer Services (1 Credit)**

Examines superior customer service in high-quality business operations for a mega golf-tourism event; includes an experiential learning/fieldwork component.

**Prerequisites:** HRTM 591.

**HRTM 593 - Golf Tourism Supervisory Skills (1 Credit)**

Examines basic supervisory skills in high-quality business operations for a mega golf-tourism event; includes an experiential learning/fieldwork component.

**Prerequisites:** HRTM 591, HRTM 592.

**HRTM 594 - Golf Tourism Leadership Skills (1 Credit)**

Examines management and leadership skills in high-quality business operations for a mega golf-tourism event; includes an experiential learning/fieldwork component.

**Prerequisites:** HRTM 591, HRTM 592, HRTM 593.

**HRTM 597 - Global Travel and Tourism (3 Credits)**

Study of the economic, social, cultural, political, and environmental considerations of international tourism management and development.

**Prerequisites:** HRTM 280.

**HRTM 720 - Hospitality Finance Methods (3 Credits)**

The study of financial management related to the hospitality industry.

**HRTM 730 - Strategic Leadership in the Hospitality Industry (3 Credits)**

Strategic decision-making, planning, and leadership relative to the hospitality industry.

**HRTM 740 - Services Management and Customer Experience in the Hospitality Industry (3 Credits)**

Analysis, planning, and control of the service function in hospitality organizations with emphasis on management problems.

**HRTM 750 - Hospitality Marketing and Social Media (3 Credits)**

Strategic marketing process for hospitality organizations.

**Prerequisites:** MKTG 350.

**HRTM 755 - Properties Management (3 Credits)**

Feasibility studies, functional planning and design, equipment and utilities management.

**HRTM 768 - Contemporary Problems in the Lodging Industry (3 Credits)**

Consideration and analysis of relevant contemporary problems and issues presently facing managers in the lodging industry.

**HRTM 776 - Current Issues in Foodservice Management (3 Credits)**

Critical issues impacting the management of food-service organizations.

**HRTM 780 - Seminar in Travel and Tourism (3 Credits)**

Issues in travel and tourism.

**Prerequisites:** HRTM 750.

**HRTM 781 - Seminar on the Olympic Games (3 Credits)**

Examination of the Olympic Games, a mega sport and tourism event, and its impact on the sport, entertainment, hospitality and tourism sectors.

**Cross-listed course:** SPTE 781

**HRTM 785 - Resort Management (3 Credits)**

Management of resort complexes, including master plan development, ecological concerns, and recreational activities development.

**HRTM 795 - Tourism and Hospitality Field Project (3 Credits)**

Work experience and participation in management decision-making in a hospitality and tourism business environment. Positions assigned on an individual basis with emphasis on oral and written communication skills, planning, and problem solving.

**HRTM 798 - Directed Study in HRTM (3 Credits)**

Independent study for advanced students under faculty supervision. May be taken twice for degree credit.

**HRTM 799 - Thesis Preparation (1-6 Credits)**

Thesis preparation in international hospitality and tourism management.  
**Prerequisites:** HRSM 788.

**HRTM 850 - Scientific Foundations of Hospitality Management (3 Credits)**

Examination of serious inquiry, philosophical foundations and schools of thought, and the contributions from social and behavioral sciences that heavily influence hospitality management.

**HRTM 888 - Advanced Research Seminar in Hospitality Management (3 Credits)**

Examination of hospitality research issues and research literature, including appropriate methodologies and designs.

**Prerequisites:** HRSM 788 or equivalent, HRTM 850.

**HRTM 890 - Pedagogy in Hospitality and Tourism Management (3 Credits)**

An introduction to college level teaching; major components include related theory, current research, instructional design, and the application of effective strategies in the teaching-learning process. Emphasis is also aligned with Preparing Future Faculty (PFF) for instruction and planning for future implementation in HRSM curriculum.

**HRTM 895 - Ph.D. Graduate Seminar in Hospitality Management (1 Credit)**

Seminar of current topics related to research, teaching and grant writing in hospitality management. As part of the PhD program requirement, the course must be taken twice during the tenure of a student at USC Columbia.

**Prerequisites:** HRTM 888.

**HRTM 899 - Dissertation (1-13 Credits)**

## Instr and Teacher Educ (EDTE)

**EDTE 590A - Internship in Curriculum and Assessment (3 Credits)**

Internship for practice in classrooms appropriate to the level of certification sought (early childhood or elementary) related to curriculum design and assessment.

**Prerequisites:** admission to internship II in early childhood or elementary education.

**Corequisite:** EDTE 590B and EDTE 590C.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Internships

**EDTE 590B - Internship in Teaching (3 Credits)**

Internship for practice in classrooms appropriate to the level of certification sought (early childhood or elementary) related to interactive teaching.

**Prerequisites:** admission to internship II in early childhood or elementary education.

**Corequisite:** EDTE 590A and EDTE 590C.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Internships

**EDTE 590C - Internship in Professional Roles (3 Credits)**

Internship for practice in classrooms appropriate to the level of certification sought (early childhood or elementary) related to professional roles.

**Prerequisites:** admission to internship II in early childhood or elementary education.

**Corequisite:** EDTE 590A and EDTE 590B.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Internships

**EDTE 600 - Systematic Effective Teaching (3 Credits)**

Application of research-supported effective teaching techniques to the teaching-learning process, including demonstration lessons, observations, and supervisory conferences.

**EDTE 605 - Cooperative/Team Learning in Education (3 Credits)**

Instructional approaches, materials, and procedures for utilizing cooperative/team learning in education.

**EDTE 610 - Integrated Reading and Writing Instruction (3 Credits)**

Theoretical bases and techniques for teaching reading and writing in the elementary school, using multiple subject areas.

**EDTE 611 - Whole Language: Concepts and Practices (3 Credits)**

Development of concepts, materials, and practices to implement a whole language philosophy.

**EDTE 620 - Restructuring Schools: Teachers and Classrooms (3 Credits)**

Examination of issues related to restructuring schools based on different assumptions about teaching, learning, and assessment.

**EDTE 621 - Middle Level School Today (3 Credits)**

National trends in the middle level school; emphasis on the relationship of early adolescent developmental characteristics to organization, curriculum, instruction, and teaching.

**EDTE 625 - Integrating Character Education into Instructional Programs (3 Credits)**

Rationale, processes, and methodologies for integrating character education into school or school district instructional programs.

**EDTE 626 - Service Learning for Schools, Community, and Workplace Responsibility (3 Credits)**

Assist school personnel in designing academic, personal, civic, and workplace responsibility.

**EDTE 631 - Technology to Support Instruction (3 Credits)**

Introduction to computers, educational technology, and selected applications for instructional management.

**EDTE 671 - Computers in Science Education (3 Credits)**

Use of computer technology in teaching and managing science classes and problems in grades K-12.



**EDTE 701 - Selected Topics in Teaching Science (3 Credits)**

Primarily for elementary, middle, and secondary school teachers. Teachers at other levels may be accepted.

**EDTE 710 - Developing as a Professional Educator (3 Credits)**

Concepts and strategies to assist teachers in developing as effective and successful educators in PreK through 12 schools.

**EDTE 711 - Ideas and Issues in Teaching (3 Credits)**

Examination of theoretical and philosophical concepts fundamental to understanding learning and teaching.

**EDTE 712 - Action Research in Teaching (3 Credits)**

Introduction to action research through the investigation of a significant question or issue related to teaching in PreK through 12 schools.

**Prerequisites:** EDTE 710, EDTE 711, and EDRM 700 or an approved education research course.

**EDTE 713 - Action Research Capstone Seminar (3 Credits)**

Culminating experience that includes completion of an action research project and a thorough review of professional growth.

**Prerequisites:** EDTE 712.

**EDTE 731 - Integration of Technology and Instruction (3 Credits)**

Survey of the instructional uses of computers and other technologies.

**EDTE 733 - Reading and Language Arts in Early Childhood and Elementary Education (6 Credits)**

Examination and implementation of the content, goals, and methods of teaching reading and the language arts. Emphasis on the teaching of reading, oral and written expression, and listening. K-6.

**Prerequisites:** Admission to the MAT program.

**EDTE 740 - Introduction to Project-Based Learning (3 Credits)**

Introduction to Project-based Learning theory and basics of designing, delivering and assessing it. Designed for classroom teachers who have earned an initial teaching credential or its equivalent and who wish to continue their professional development through graduate education.

**EDTE 741 - Applications of Project-Based Learning (3 Credits)**

Acquisition of experiences required to plan, create, facilitate, and integrate appropriate instructional methodologies and technology within a Project-based Learning unit of study.

**Prerequisites:** EDTE 740.

**EDTE 742 - Practicum in Project-based Learning (3 Credits)**

A field-based practicum designed to provide experience and opportunities to demonstrate knowledge, skills, and dispositions for implementing PBL into a regular classroom setting.

**Prerequisites:** EDTE 740 and EDTE 741.

**EDTE 750 - Evaluating Teacher Effectiveness (3 Credits)**

Techniques currently being used to quantitatively analyze the behavior of a teacher and his/her students while in a classroom situation.

**EDTE 755 - Teaching Environmental Education (3-6 Credits)**

Rationale and strategies for teaching environmental education.

**EDTE 759 - Teaching Reasoning and Inquiry Skills (3 Credits)**

Definition of and methods for teaching reasoning and inquiry skills in various educational settings. Participants develop a plan of instruction based on a study of model programs.

**EDTE 760 - Issues in Writing Instruction K-12 (6 Credits)**

Issues in the teaching of writing, with emphasis on classroom applications K-12 and program development.

**EDTE 771 - Studies and Internship I in Teaching Math-Early/Elementary Education (3 Credits)**

Instructional approaches, materials and methods for primary and elementary classrooms.

**Prerequisites:** Admission to the MAT program.

**EDTE 772 - Technology in Foreign Language Education (3 Credits)**

Introduction to technology in language teaching and the connection between language acquisition and the implementation of Internet and multimedia technology.

**Cross-listed course:** FORL 772, LING 772

**EDTE 774A - Teaching Internship (Foreign Languages) (3 Credits)**

Application of effective teaching techniques and organization of instructional settings in foreign languages for K-12.

**Prerequisites:** acceptance to the Professional Program in Education.

**Cross-listed course:** FORL 774A

**EDTE 774B - Teaching Internship (Foreign Languages) (9 Credits)**

Application of effective teaching techniques and organization of instructional settings in foreign languages for K-12.

**Prerequisites:** EDTE 774A.

**Corequisite:** EDSE 584.

**EDTE 776 - Educating African-American Students (3 Credits)**

An analysis of historical and contemporary factors that influence the education of African American children in the US. Emphasis on the knowledge, skills and dispositions required for educators and parents to provide an effective equitable education for African American students.

**EDTE 777 - Analysis of Effective Instructional Practices (3 Credits)**

Analysis of instructional techniques and strategies effective in fostering student achievement at various levels of schooling.

**Prerequisites:** master's degree and certification.

**EDTE 778 - Teacher as Instructional and Professional Leader (3 Credits)**

Major roles of the master teacher in instructional improvement and professional development. Emphasis on analysis and integration of instructional change and professional development classroom teaching practices.

**Prerequisites:** master's degree and certification.

**EDTE 779 - Equity Pedagogies in Teacher Education (3 Credits)**

Effects of cultural diversity on instruction with emphasis on teaching strategies and programs for multicultural student populations.

**Prerequisites:** EDTE 777, master's degree and certification.

**EDTE 779A - Teaching Internship (Theatre) (3 Credits)**

Application of effective teaching techniques and organization of instructional settings in theatre for K-12.

**Prerequisites:** acceptance to the Professional Program in Education.

**EDTE 779B - Teaching Internship (Theatre) (9 Credits)**

Application of effective teaching techniques and organization of instructional settings in theatre for K-12.

**Prerequisites:** EDTE 779A.

**Corequisite:** EDSE 584.

**EDTE 780 - Field Study Preparation Seminar (3 Credits)**

Instructional planning, including evaluation and dissemination strategies related to improvements and innovations in the classroom. Emphasis is on preparation of written instructional plan for implementation in EDTE 781 Advanced Field Study of Teaching.

**EDTE 781 - Advanced Field Study of Teaching (1-6 Credits)**

Students will conduct and report results of a field study of a selected instructional innovation as specified by an implementation plan developed in EDTE 780.

**Prerequisites:** EDTE 780.

**EDTE 782A - Teaching Internship (Health) (3 Credits)**

Application of effective teaching techniques and organization of instructional settings in health for K-12.

**Prerequisites:** acceptance to the Professional Program in Education.

**Cross-listed course:** HPEB 782A

**EDTE 782B - Teaching Internship (Health) (9 Credits)**

Application of effective teaching techniques and organization of instructional settings in health for K-12.

**Prerequisites:** EDTE 782A.

**Corequisite:** EDSE 584.

**EDTE 791 - Global Education (3 Credits)**

An examination of global issues, including the concepts of interdependence and empowerment, as organizing principles in the design of instruction for internationalizing the curriculum.

**EDTE 792 - International Perspectives of Instruction (3 Credits)**

A Comparative examination of the educational and instructional processes of select nations in a variety of instructional areas.

**EDTE 793 - Development Education (3 Credits)**

An examination of the parameters of development education in select areas of the world and its implications for educators and other development workers.

**EDTE 799 - Thesis Preparation (1-9 Credits)****EDTE 811 - Developing Integrated Curricula (3 Credits)**

Theoretical foundation of an integrated curriculum and implications for current practice.

**EDTE 820 - Principles of STEM (Science, Technology, Engineering, and Mathematics) Integration (3 Credits)**

Exploration of pedagogical practices and methodological approaches for integrating instruction across STEM disciplines.

**EDTE 841 - Genre Study: Academic Writing in Education (3 Credits)**

An overview of academic writing in Education as a genre. Emphasis on defining and critiquing the genre, and producing papers, articles, proposals and/or dissertations.

**Prerequisites:** Admission to a doctoral program in education.

**EDTE 850 - Internship in Teaching (1-3 Credits)**

Placement in an educational agency, clinical experience, or teacher education setting to gain supervised experience in teacher education. This course is repeatable for up to 9 credit hours. Six (6) hours of required courses in the Ph.D. in Teaching and Learning program and approval of doctoral advisor and field supervisor.

**EDTE 851 - Internship in Research in Teaching and Learning (1-3 Credits)**

Placement in teaching and/or learning setting to gain supervised research experience. This course is repeatable for up to 9 credit hours. Six (6) hours of required courses in the Ph.D. in Teaching and Learning program and approval of doctoral advisor and field supervisor. Professional division contract approved by instructor, advisor and department chair is required for undergraduate students.

**EDTE 857 - Advanced Critical Race Theory and Education (3 Credits)**

An advanced study of how Critical Race Theory is applied by researchers to investigate issues of racial justice. The study of race and racism is the primary lens of analysis in understanding disparities in educational, political, social and economic outcomes.

**Prerequisites:** EDFI 747

**Cross-listed course:** EDFI 857

**EDTE 870 - Seminar in Instruction and Teacher Education (3 Credits)**

Major writers, issues, and research related to instruction and teacher education.

**Prerequisites:** advanced graduate standing.

**EDTE 899 - Dissertation Preparation (1-12 Credits)**

## Integrated Info Tech (ITEC)

**ITEC 544 - Training Systems (3 Credits)**

Theory, design, and implementation of technology-based training systems, including hardware and software solutions.

**Prerequisites:** C or better in ITEC 444.

**ITEC 545 - Telecommunications (3 Credits)**

Telecommunications systems, applications, and equipment allowing for the global dissemination of information.

**Prerequisites:** C or better in ITEC 245.

**ITEC 552 - Linux Programming and Administration (3 Credits)**

Shell scripting and administration in the Linux operating system.

**Prerequisites:** C or better in CSCE 204, or C or better in CSCE 145.

**ITEC 560 - Project Management Methods (3 Credits)**

Project management principles and standard practices, including software applications for project management.

**Prerequisites:** C or better in ITEC 362; and C or better in either ITEC 264 or MGSC 290.

**ITEC 562 - Advanced Web Support Systems (3 Credits)**

The development of advanced, dynamic, Web-based information systems, including the integration of back-end database-records management systems.

**Prerequisites:** C or better in ITEC 362.

**ITEC 564 - Capstone Project for Information Technology (3 Credits)**

Application of project management software, technologies, and practices to the design and implementation of real-world capstone projects.

**Prerequisites:** C or better in both ITEC 362 and ITEC 560.

**ITEC 570 - Database Management and Administration (3 Credits)**

Introduction to database administration and implementation using an enterprise-level Relational Database Management System (RDBMS).

**Prerequisites:** C or better in ITEC 370.

**ITEC 590 - Special Topics in Integrated Information Technology (3 Credits)**

Advanced concepts, issues, and trends in technology support and training management. Course content varies and will be announced in the schedule of classes by title. May be repeated twice for credit.

**ITEC 702 - Technology and Training Applications I (3 Credits)**

Computer application skills and concepts used in training support and business education.

**ITEC 720 - Technology and Training Applications II (3 Credits)**

Spreadsheet and database application skills and concepts used in training support and business education.

**Prerequisites:** degree candidacy and 15 hours completed or departmental approval

**ITEC 742 - Enterprise Network Management (3 Credits)**

Management of enterprise networks, including switched Local Area Networks (LANs), Wide Area Networks (WANs), data centers and cloud systems; monitoring and optimization of networks; emerging network technologies.

**Prerequisites:** C or better in ITEC 749 and ITEC 772.

**ITEC 743 - Health Information Privacy and Security (3 Credits)**

Healthcare privacy and security threats and solutions. Compliance with patient information privacy and information security regulations.

**ITEC 745 - Telecommunications for Health Information Technology (3 Credits)**

Overview of telecommunication technologies as they apply to healthcare delivery, healthcare administration, and health information exchange.

**ITEC 747 - Management of Health Information Systems (3 Credits)**

Overview of health information technology, electronic health records (EHR), and health information exchange (HIE), current practices, trends, and issues in health information systems management, and privacy and security of health information.

**ITEC 748 - Internship in Health Information Technology (1-6 Credits)**

Professional internship in health information technology. Positions assigned on an individual basis with emphasis on management decision making, oral and written communication skills, planning, and problem solving.

**ITEC 749 - Principles of Informatics (3 Credits)**

Integration of information technology across the business spectrum. Underlying technological developments and important business drivers of performance. Digital technology's role in relation to three major components of business performance improvement: people, processes and technology.

**Prerequisites:** C or better in ITEC 447.

**ITEC 752 - Systems Analysis & Design for Health Applications (3 Credits)**

This course applies the principles of information systems analysis and design to health processes and applications. It looks at the analysis and logical design of business processes and management information systems focusing on the systems development life cycle; and techniques for logical system design.

**ITEC 754 - Analysis and Design of Information Systems and Technology (3 Credits)**

Application of the principles of information systems analysis and design to organizational processes and applications. Analysis and logical design of business processes and management information systems focusing on the systems development life cycle. Techniques for logical system design.

**Prerequisites:** B or better in ITEC 447.

**ITEC 760 - Cyberinfrastructure and Information Assurance (3 Credits)**

Information Technology (IT) elements of the cyberinfrastructure; information assurance and security in the modern cyberinfrastructure; design and secure advanced systems that use, process, transmit, and store of information.

**Prerequisites:** ITEC 742.

**ITEC 761 - Management of Cyberinfrastructure (3 Credits)**

Techniques, technologies, and management tools used in modern cyberinfrastructures, including software-defined data centers, next-generation software-defined networking (NG-SDN), and cloud systems.

**Prerequisites:** ITEC 760.

**ITEC 762 - Health Information Technology Usability and Interface Design (3 Credits)**

Overview of the analysis, design, and usability of health information systems. Includes consideration of computer interfaces, Web portals, and patient portals.

**ITEC 764 - Project Management for Health Information (3 Credits)**

Application of project management software, technologies and practices to the design and implementation of real-world health information technology projects. Integrates IT knowledge and skills learned in earlier graduate courses and challenges graduate students to learn new technologies and to solve real business problems.

**ITEC 765 - Human Computer Interaction, Usability and Interface Design (3 Credits)**

Overview of the analysis, design, and usability of information systems. Includes consideration of computer interfaces, web portals, and human-computer interaction.

**Prerequisites:** C or better in ITEC 749 and ITEC 772.

**ITEC 766 - IT Project Management (3 Credits)**

Application of project management tools to document key components of the implementation of a real-world information technology projects.

**Prerequisites:** B or better in ITEC 749 and ITEC 772.

**ITEC 770 - Health IT Database Systems (3 Credits)**

This course is an introduction to design, implementation, and management of database systems that form the foundation for health information systems.

**ITEC 772 - Database Systems (3 Credits)**

Fundamentals, design, implementation and management of database systems that form the foundation for information systems and data analytics.

**Prerequisites:** B or better in ITEC 747.

**ITEC 775 - Large-Scale Health and Information Systems (3 Credits)**

Design, implementation and operation of large-scale information systems for healthcare institutions. Includes EMRs, CPOE, e-prescribing, medication administration, CRM, and supply chain management.

**ITEC 776 - Health Information Technology and Clinical Transformation (3 Credits)**

Implementation of electronic health records (EHR) and health information exchange with focus on clinical transformation, which is the most difficult and critical component of achieving improved clinical outcomes and efficiencies from EHRs.

**ITEC 777B - Tch. Intrn. M/HS-Bus. Educ (9 Credits)**

Application of effective teaching techniques and organization of instructional settings for middle or high school students.

**ITEC 781 - Artificial Intelligence and Informatics I (3 Credits)**

Fundamental concepts in artificial intelligence, including intelligent agents, problem solving by searching, logic-based knowledge representation and inference, planning, and probabilistic reasoning. Basic techniques for building intelligent computer systems and applications to problems.

**Prerequisites:** B or better in STAT 700, STAT 701, BIOS 700, or BIOS 757; B or better in ITEC 749; B or better in CSCE 145, CSE 204, or ITEC 352.

**ITEC 782 - Artificial Intelligence and Informatics II (3 Credits)**

Artificial Intelligence concepts including algorithmic decision making. Machine learning techniques such as learning from examples, learning probabilistic models, and reinforcement learning. Applications of AI technologies, e.g. natural language processing, robotics, and perception.

**Prerequisites:** B or better in ITEC 781.

**ITEC 785 - Enterprise Data Analytics (3 Credits)**

Mathematical and software tools and quantitative reasoning to the analysis of enterprise data. Fundamental concepts and essential skills in data analytics. Critical and creative thinking about quantitative and qualitative problems involving enterprise data.

**Prerequisites:** B or better in MATH 174; B or better in STAT 700 or STAT 701; B or better in ITEC 749; C or better in ITEC 264.

**ITEC 786 - Advanced Enterprise Data Analytics (3 Credits)**

Advanced concepts, issues, and trends in data analytics. Critical thinking and quantitative and qualitative analytical skills essential for Healthcare, Engineering, and Business among many others.

**Prerequisites:** B or better in ITEC 785.

**ITEC 787 - Advanced Data Analytics Tools (3 Credits)**

Software tools in data analytics. Advanced analytics techniques. Case studies and problem sets from multiple enterprise domains.

**Prerequisites:** B or better in MATH 174 and STAT 700; C or better in ITEC 264.

**ITEC 790 - Special Topics in Informatics (3 Credits)**

Advanced concepts, issues, and trends in information technology. Course content varies and will be announced in the schedule of classes by title. May be repeated twice for credit.

**ITEC 791 - Introduction to Management of Information Security (3 Credits)**

Overview of information security exploring basic concepts and developing knowledge and skills of protecting valuable information assets and systems.

**ITEC 792 - Management of Cyber Operations (3 Credits)**

Technical and managerial aspects of IT security operations. Securing the cyberinfrastructure, detecting and mitigating intrusion, monitoring and managing computing systems.

**ITEC 793 - Cybersecurity Risk Management (3 Credits)**

Risk assessments, risk mitigation strategies, security risks, controls and services, development and implementation of security policies, threat and vulnerability, risk management program.

**ITEC 795 - Independent Study in Health Information Technology (1-3 Credits)**

Independent study in association with a directing instructor on a topic not covered in standard classes. Contract approved by instructor, advisor, and graduate program director.

**ITEC 899 - Dissertation Preparation (1-12 Credits)**

Dissertation preparation.

## International Business (IBUS)

**IBUS 519 - Social Networks and Global Leadership (3 Credits)**

A survey of social network theories and evidence that provide theoretical, empirical and practical examples of how different social network configurations achieve different function goals. Concepts are applied to case studies of multinational enterprises to illustrate the network coordination challenges of global business.

**Prerequisites:** C or better in IBUS 310.

**IBUS 541 - Business in Latin America (3 Credits)**

Discussion and analysis of business environments and business practices in the countries of Latin America.

**Prerequisites:** IBUS 310 for Undergraduates.

**Prerequisite or Corequisite:** DMSB 714 or IBUS 705 or IBUS 707 for Graduate Level.

**IBUS 542 - Business in Asia (3 Credits)**

Discussion and analysis of business environments and business practices in the countries of Asia.

**Prerequisites:** IBUS 310 for Undergraduates.

**Prerequisite or Corequisite:** DMSB 714 or IBUS 705 or IBUS 707 for Graduate Level.

**Graduation with Leadership Distinction:** GLD: Global Learning

**IBUS 543 - Business in Europe (3 Credits)**

Discussion and analysis of business environments and business practices in the countries of Europe.

**Prerequisites:** IBUS 310 for Undergraduates.

**Prerequisite or Corequisite:** DMSB 714 or IBUS 705 or IBUS 707 for Graduate Level.

**IBUS 544 - Business in Africa (3 Credits)**

Discussion and analysis of business environments and business practices in the countries of Africa.

**Prerequisites:** IBUS 310 for Undergraduates.

**Prerequisite or Corequisite:** DMSB 714 or IBUS 705 or IBUS 707 for Graduate Level.

**Graduation with Leadership Distinction:** GLD: Global Learning

**IBUS 590 - Specialized Study in International Business (0-3 Credits)**

Topics in international business. Reading and research on selected topics in the practices in the international business environment.

**Prerequisites:** C or better in IBUS 310.

**IBUS 700 - Survey of International Business (3 Credits)**

A survey of the organization and management of international business stressing the effects of international cultural, economic, and legal factors on the management function. Typical factors examined are export and import trade, transnational investment, finance, marketing, production, taxation, and the role of the U.S. national in multinational organizations.

**IBUS 701 - International Financial Management (3 Credits)**

An intensive study of international financial management. Topics include investment analysis, financing decisions, taxation, foreign-exchange risk policies, joint ventures, transfer pricing, financing of trade, and financial control of international operations.

**Prerequisites:** FINA 760.

**IBUS 702 - International Marketing (3 Credits)**

Marketing management of the international operation stressing the viewpoint of the marketing manager who must recognize differences in market arrangements and in legal, cultural, and economic factors in different countries.

**IBUS 703 - International Management (3 Credits)**

Functionally integrated international strategy design and negotiation with host countries within the worldwide structure of international firms. Emphasis on decision-making in the face of rapidly changing international conditions.

**Prerequisites:** IBUS 711.

**IBUS 704 - Comparative Corporate Governance (3 Credits)**

Systematically compare and contrast corporate governance systems across a variety of countries.

**IBUS 705 - Global Business Management (3 Credits)**

Examines the management of strategic, structural and informal processes within multinational corporations, and how to lead a global workforce.

**IBUS 706 - Nations States, Regional Networks and Global Markets (3 Credits)**

Introduces conceptual frameworks to understand globalization and the changes taking place in the international political economy, and the interactions of governments and global organizations.

**IBUS 707 - Comparative Institutional Systems (3 Credits)**

Introduces conceptual perspectives for understanding dramatic economic events in the global economy; a comparative view of national institution-based systems.

**Cross-listed course:** DMSB 741

**IBUS 708 - International Business Legal Environments (3 Credits)**

Practical knowledge and skills to operate effectively and avoid unexpected losses when doing business in international markets under a foreign legal system.

**IBUS 709 - International Intellectual Property Management (3 Credits)**

Equip managers with the tools to identify intellectual property assets, manage asset development and implementation, and to create intellectual property strategies tailored to business objectives.

**IBUS 710 - Global Stakeholder Management (3 Credits)**

Survey of the managerial, political, economic, sociological and psychological foundations of global stakeholder management and engagement through extant theory and case study examples of successful and failed stakeholder management strategies in various industries and multiple countries.

**IBUS 711 - Global Corporate Valuation (3 Credits)**

Application of key corporate valuation models in evaluating different business situations facing multinational corporations.

**Prerequisites:** DMSB 715 or IBUS 701.

**IBUS 712 - Currency Markets, Exchange Risk, and Currency Derivatives (3 Credits)**

Structure of the global currency markets, currency derivative products, and the management of exchange risk.

**Prerequisites:** DMSB 715 or IBUS 701 and FINA 737.

**IBUS 713 - Global Financial Markets (3 Credits)**

Advanced issues in the structure of global financial markets, including the Eurobond, foreign bond, syndicated credit, Euronote, and swap markets.

**Prerequisites:** DMSB 702 or IBUS 701.

**IBUS 714 - Global Equity Investments (3 Credits)**

Theory and quantitative tools useful for asset allocation and security selection with a focus on equity investments, and the process of active tactical asset management in a global setting from the perspective of a global money manager.

**Prerequisites:** DMSB 715 or IBUS 701.

**IBUS 715 - Foreign Market Entry and Growth (3 Credits)**

International market selection, foreign market entry, and growth and regional expansion strategies.

**Prerequisites:** DMSB 716 or IBUS 702.

**IBUS 716 - Cross-border Alliances and Joint Ventures (3 Credits)**

Strategic management of cooperative strategies (e.g., joint ventures, strategic alliances, cooperative agreements).

**Prerequisites:** DMSB 711 or IBUS 700.

**IBUS 717 - Managing Cross-border Teams (3 Credits)**

How the presence of members from multiple national cultures and multiple national locations affect the functioning of teams within the multinational corporation.

**Prerequisites:** DMSB 714 or IBUS 700 or MGMT 770 or MGMT 799.

**Cross-listed course:** MGMT 729

**IBUS 718 - Consulting and Organizational Development in MNCs (3 Credits)**

Restructuring and transformation initiatives within multinational organizations as internal consultants and/or change agents.

**Prerequisites:** DMSB 711 or IBUS 700 or MGMT 779.

**Cross-listed course:** MGMT 730

**IBUS 719 - Social Networks and Global Leadership (3 Credits)**

Survey of social network theories and evidence, such that you are able to better identify, build, and navigate the social settings in which your career unfolds. Concepts are applied to several case studies of multinational enterprises to illustrate the network coordination challenges of global business.

**IBUS 720 - International Entrepreneurship (3 Credits)**

Develop a business plan for a global startup, integrate international strategy into the business model and financing strategy, analyze the costs of internationalization.

**IBUS 721 - Advanced International Marketing (3 Credits)**

Analysis of advanced topics and practices in international marketing as viewed from the perspective of a multinational enterprise.

**Prerequisites:** DMSB 702 or IBUS 702.

**IBUS 722 - Export Marketing (3 Credits)**

Provides a sound understanding of the role of exporting in the internationalization process and of key features of the environment in which exporters operate. Also covers selected topics of export marketing procedures.

**Prerequisites:** DMSB 702 or IBUS 702.

**IBUS 723 - International Advertising (3 Credits)**

International dimensions of advertising and other forms of marketing communication from three perspectives: the seller, society, and advertising agencies and other providers of marketing communication services.

**IBUS 726 - The Business Case for Services Offshoring (3 Credits)**

How to formulate and present a professional judgment on a corporate initiative (like services offshoring) with a sound business case based on the elements of cost, benefit, risk, and strategic flexibility.

**IBUS 727 - Economic Development and Global Strategy (3 Credits)**

Theoretical and comparative empirical perspectives on the roles of state and business in economic development; politics of economic reform and the impact of business strategies on development. Cases drawn broadly from emerging markets, advanced economies, and economic history.

**IBUS 728 - Risk Management and Security Strategies in International Business (3 Credits)**

Analyze how multinational enterprises interact with political, sociocultural and economic environments worldwide with a focus on security threats on multinational companies and overseas investments to include terrorism, mass refugee migrations, and cyber threats; and develop sustainable strategies.

**IBUS 729 - Comparative Innovation Systems (3 Credits)**

To analyze how innovation is approached by firms in different institutional climates around the world.

**IBUS 730 - Global Innovation and Industry Clusters (3 Credits)**

Addresses the lessons learned from the combination of factors that led to specific regions of the world successfully developing specialties in certain industry clusters.

**IBUS 731 - Global Competitive Analysis (3 Credits)**

Provides a conceptual and analytical framework for analyzing industries and competitors, and competitive positioning within a global strategy framework.

**Prerequisites:** DMSB 702 or IBUS 703.

**IBUS 732 - Comparative Management (3 Credits)**

Cross-cultural analysis of management theory and practice in select countries and regional markets.

**IBUS 733 - East/West Business (3 Credits)**

International investment, joint venture, trade and technology transfer relationships between the advanced industrial systems of the U.S., the E.C., and Japan and socialist economies of the former Soviet Union, Eastern Europe, and China.

**IBUS 734 - International Business Negotiations (3 Credits)**

Examines how decision makers in business and government settings manage the process and outcomes of negotiations. Cross-cultural negotiations in a global business environment.

**IBUS 735 - International Mergers and Acquisitions (3 Credits)**

Practical skills to effectively transact international mergers and acquisitions. Focus given to essential strategic financial organizational and legal factors.

**IBUS 736 - Strategic Management of Global Supply Chains (3 Credits)**

Strategic frameworks for designing and managing global supply chains, including management of operational practices from an international perspective.

**Prerequisites:** DMSB 718 or MGSC 791.

**IBUS 737 - International Information Systems (3 Credits)**

Analysis of current topics, issues, and practices in international information systems.

**IBUS 738 - International Business and Sustainable Development (3 Credits)**

An introduction to international environmental and social management issues that affect an organization's sustainable development initiatives.

**IBUS 739 - Design Thinking For Global Business (DT4GB) (3 Credits)**

The method and practice of bridging an analytical mindset where consistent, replicable outcomes are the gold standard ("reliability") with an intuitive mindset relying on judgment to produce outcomes that meet desirable objectives ("validity").

**IBUS 740 - Data Analytics for International Business (3 Credits)**

Research issues related to conducting studies in a cross-cultural setting, to develop an awareness of current international research programs.

**IBUS 750 - Exploring Global Business (3 Credits)**

The course examines in detail the business issues of a specific region as they impact the conduct of global business.

**Prerequisites:** IBUS 700.

**IBUS 780 - International Business Internship (6 Credits)**

On-site work experience related to the field of study and/or career interests of the student.

**IBUS 790 - Specialized Study in International Business (3 Credits)**

Analysis of current topics, issues, and practices in the international business environment not covered in any of the other specialized study courses. Consult instructors for specific coverage.

**Prerequisites:** DMSB 702 or IBUS 700.

**IBUS 801 - Ph.D. Seminar on International Business I (3 Credits)**

An intensive study of the evolution of international business thought and the present state of development of international business theory with emphasis on current contributions to international business theory.

**Prerequisites:** IBUS 711.

**IBUS 802 - Ph.D. Seminar in International Business II (3 Credits)**

Intensive study of selected current international business topics, research and theories through readings, discussion, and individual research.

**Prerequisites:** IBUS 700.

**IBUS 808 - Current Research in International Business (3 Credits)**

Addresses current research issues in international business research.

**Prerequisites:** DMSB 702 or IBUS 717.

**IBUS 811 - Ph.D. Seminar in International Finance I (3 Credits)**

Doctoral seminar on theory and empirical research in international finance.

**IBUS 812 - Ph.D. Seminar in International Finance II (3 Credits)**

Doctoral seminar on theory and empirical research in international investments and implications for the theory of international corporate finance.

**IBUS 820 - Ph.D. Seminar in International Marketing (3 Credits)**

Examination of current international marketing research, with emphasis on developing a critical understanding of theory, concept development, research design, and research results within the field of international marketing.

**IBUS 830 - Ph.D. Seminar in International Management (3 Credits)**

Examination of international management research, with emphasis on developing a critical understanding of theory, concept development, research design, and research results within the field of international management.

**IBUS 840 - Ph.D. Seminar on MNC Governance (3 Credits)**

Examination of theory and research regarding multinational corporation (MNC) governance, and corporate governance and organizational form cross-nationally.

**IBUS 850 - Ph.D. Seminar on Cultural Frameworks and Research (3 Credits)**

Seminar exploring concepts and research issues relevant to understanding national-based culture.

## Italian (ITAL)

**ITAL 560 - Independent Studies in Italian Literature (1-3 Credits)**

Special topics in Italian literature.

**ITAL 561 - Independent Studies in Italian Literature (1-3 Credits)**

Special topics in Italian literature.

**ITAL 615 - Intensive Readings in Italian (3 Credits)**

Graduate students fulfill their foreign language reading requirement with successful completion of the course. Undergraduates may take the course as an elective only.

## Japanese (JAPA)

**JAPA 500 - Japanese Language in Society (3 Credits)**

Japanese language and communication in its sociocultural context; emphasis on comparison with American English. Taught in English.

**Cross-listed course:** LING 546

**JAPA 777 - Supervised Instruction in Teaching Foreign Languages in College (0 Credits)**

Supervised direction of foreign language teaching in college. Required of all graduate assistants who are teaching. This course will not count toward the MA or PhD degree.

## Journalism (JOUR)

**JOUR 501 - Freedom, Responsibility, and Ethics of the Mass Media (3 Credits)**

Historical development of freedom, responsibility, and ethics in the mass media, including communication theories, pressures, ownership.

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy, GLD: Professional and Civic Engagement Leadership Experiences

**JOUR 504 - International Mass Communications (3 Credits)**

A comparative study of world mass communications media, with particular attention to press systems, the sources and flow of international news, and the problems and implications of world communications.

**JOUR 506 - Mass Media Criticism (3 Credits)**

Development of critical thinking skills for analyzing mass media.

**Prerequisites:** JOUR 101.

**JOUR 507 - Communicating Science, Health and the Environment (3 Credits)**

Explores the role of journalism in shaping perceptions of scientific issues and task. Emphasis on methods of effectively communicating about science, health, and the environment.

**JOUR 508 - Faith, Values, and the Mass Media (3 Credits)**

Faith and values influence the media. An examination of the influence, why it happens, and of religious diversity and the increased public presence of religions, including Hinduism and Islam.

**Prerequisites:** JOUR 291 and junior or senior standing or consent of instructor

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy

**JOUR 515 - Mass Communications Capstone Portfolio (3 Credits)**

Development of Mass Communications E-portfolio showcasing and reflecting on coursework and experiential learning, with a focus on leadership, as preparation for matriculation in higher education or careers in mass media.

**Prerequisites:** C or better in JOUR 501, JOUR 506, or JOUR 542.

**JOUR 516 - Advanced Creative (3 Credits)**

Development of writing styles for print and broadcast advertising.

**Prerequisites:** JOUR 416.

**JOUR 517 - Integrated Campaigns (3 Credits)**

The development of a complete, well coordinated integrated communications plan that incorporates research and analysis techniques, critical thinking, team work, creative and tactical skills.

**Prerequisites:** JOUR 416 and JOUR 421.

**Graduation with Leadership Distinction:** GLD: Research

**JOUR 518 - Brand Communications Practicum/Competitions (3 Credits)**

Application of advertising techniques and skills in preparation of full scale campaign.

**Prerequisites:** JOUR 332, JOUR 416, JOUR 421.

**JOUR 521 - Interactive Communication Strategies (3 Credits)**

The development of a complete, well-coordinated integrated communications plan that incorporates research and analysis techniques, critical thinking, team work, creative and tactical skills.

**Prerequisites:** JOUR 202 or MKTG 350.

**JOUR 527 - Advertising Management (3 Credits)**

The dynamics of leadership and management in the creative industries.

**Prerequisites:** JOUR 202.

**JOUR 530 - Creative Leadership (3 Credits)**

Theories of leadership as applied to creative industries. Students will engage and interact with community-based organizations to assess needs, plan communications strategies, lead student teams in developing those ideas, and present to clients. Junior standing or permission of instructor.

**JOUR 531 - Public Relations Campaigns (3 Credits)**

Development of public relations campaigns for business and social institutions. Case studies of public relations campaigns and programs.

**Prerequisites:** JOUR 201, JOUR 332, JOUR 436.

**Graduation with Leadership Distinction:** GLD: Community Service, GLD: Research

**JOUR 533 - Public Relations Management (3 Credits)**

Researching, programming, staff, budgeting, and planning public-relations programs by business, government, or consulting firms.

**Prerequisites:** JOUR 201, JOUR 436.

**JOUR 534 - Publication Writing and Design (3 Credits)**

Publication writing and design as well as internal or constituent communications, specifically focused on an internal audience. Production of InterCom, the College of Mass Communications and Information Studies' alumni magazine.

**Prerequisites:** JOUR 291.

**JOUR 536 - Crisis Communications (3 Credits)**

Introduction to crisis communications and management from a strategic, theory-based approach using research from historical and current case studies.

**Prerequisites:** C or better in JOUR 436.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

**JOUR 537 - The Carolina Agency (3 Credits)**

Participation in a functioning communications agency working for actual clients in a student-directed environment. Opportunity to both lead and be a part of a team servicing the communication needs of various clients.

**Prerequisites:** JOUR 101; JOUR 201; JOUR 203 or JOUR 202; and JOUR 291.

**Graduation with Leadership Distinction:** GLD: Community Service, GLD: Professional and Civic Engagement Leadership Experiences

**JOUR 538 - The Bateman Team (3 Credits)**

Self-directed development and implementation of a public relations campaign as part of a national competition: PRSSA's Bateman Competition.

**Prerequisites:** JOUR 332 and JOUR 436.

**JOUR 539 - Ethics in Public Relations and Public Policy (3 Credits)**

Review of the analytical process of resolving complex ethical issues and cases in public relations; study of the philosophical approaches to communication ethics.

**Prerequisites:** JOUR 101.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

**JOUR 542 - Public Opinion and Persuasion (3 Credits)**

Theory and practice of persuasive communication and the role of persuasion in shaping public opinion.

**JOUR 550 - Advanced Magazine Article Writing (3 Credits)**

Writing techniques used in the preparation and marketing of major nonfiction articles for national, regional, and local publications.

**Prerequisites:** JOUR 566.

**JOUR 560 - Capstone Portfolio Development (3 Credits)**

Advanced techniques of graphic and multimedia design and their application to problem-solving situations in the mass media. Emphasis on portfolio development.

**Prerequisites:** JOUR 446, JOUR 447, JOUR 449.

**JOUR 563P - Public/Civic Journalism (3 Credits)**

To gain an understanding of theory and practice of public/civic journalism, seen by its advocates as socially responsible journalism that attempts to build civic participation and empower communities.

**Graduation with Leadership Distinction:** GLD: Community Service

**JOUR 566 - Magazine Article Writing (3 Credits)**

Researching, organizing, writing, and marketing articles for publication in general and specialized publications.

**Prerequisites:** JOUR 361 or JOUR 436.

**JOUR 573 - Editorial and Opinion Writing (3 Credits)**

Content and style; writing of editorials, analyses, and commentaries.

**Prerequisites:** JOUR 291.

**JOUR 574 - Data Journalism (3 Credits)**

Acquiring, analyzing and presenting data using spreadsheets and other tools to uncover stories and provide depth and context to journalism.

**Prerequisites:** JOUR 291.

**JOUR 575 - Broadcast Journalism Practicum (3 Credits)**

Production of public affairs programs.

**Prerequisites:** JOUR 326, JOUR 333, and JOUR 434.

**Corequisite:** JOUR 502, JOUR 503, and JOUR 526.

**JOUR 576 - Reporting Public Affairs (3 Credits)**

Concentrated analyses of reporting in special fields, particularly in the South, including coverage of government, business, labor, the arts and sciences.

**Prerequisites:** JOUR 361.

**JOUR 579 - Broadcast Announcing (3 Credits)**

Theory and practice of professional broadcast announcing. Lecture-demonstration-laboratory course in principles underlying professional performance before microphones and cameras and the various broadcast performance functions.

**Prerequisites:** JOUR 325.

**JOUR 580 - Advanced Reporting Topics (3 Credits)**

Study and application of highly specialized reporting on topics related to current public discourse. May be repeated as content varies by title.

**Corequisite:** JOUR 587, JOUR 589, and JOUR 590 or JOUR 586, JOUR 588 and JOUR 590.

**JOUR 586 - Capstone I - Advanced Reporting - Broadcast and Online Journalism (3 Credits)**

Professional practice in meeting daily newscast deadlines through work on the Carolina News television newscast. Focus on polished reporting, performance and production techniques and demonstration of advanced television reporting skills under deadline pressure.

**Prerequisites:** JOUR 471.

**Corequisite:** JOUR 588 and JOUR 590.



**JOUR 587 - Capstone I - Advanced Reporting - Multimedia Journalism (3 Credits)**

Professional practice in shaping journalistic reporting to the multimedia environment. Application of news gathering, synthesizing and reporting across platforms – print and online, textual and graphic – in timely fashion.

**Prerequisites:** JOUR 471.

**Corequisite:** JOUR 589 and JOUR 590.

**JOUR 588 - Capstone II - Advanced Broadcast and Online Journalism Production (3 Credits)**

Advanced newscast production skills developed in the context of producing daily Carolina News broadcast. Shape and coordinate reporting and production team under deadline pressure in newsroom setting.

**Prerequisites:** JOUR 471.

**Corequisite:** JOUR 586 and JOUR 590.

**JOUR 589 - Capstone II - Advanced Multimedia Journalism Production (3 Credits)**

Editing and design employed to maximize effectiveness in the multimedia environment. Creating accurate and engaging content to reach consumers in varied ways reflecting contemporary consumer use of media.

**Prerequisites:** JOUR 471.

**Corequisite:** JOUR 587 and JOUR 590.

**JOUR 590 - Capstone III - Digital Journalism (3 Credits)**

Exposure to the evolving variety of journalism techniques, software programs and equipment to effectively tell compelling stories and convey information in multiple visual and interactive forms. Emphasis on extending professional skills while reinforcing current best practices.

**Prerequisites:** JOUR 471.

**Corequisite:** JOUR 586 and JOUR 588 or both JOUR 587 and JOUR 589.

**JOUR 595 - Domestic Study Away in Journalism and Mass Communications (3 Credits)**

Domestic study away course will focus on topics in journalism and mass communications and will be taught away from the University of South Carolina Columbia campus. Individual topics will vary by title.

**Prerequisites:** to be announced in class schedule.

**JOUR 596 - Study Abroad in Journalism and Mass Communications (3 Credits)**

Study abroad course will focus on topics in journalism and mass communications and will be taught as a study abroad experience. Individual topics will vary by title.

**Prerequisites:** to be announced in class schedule.

**JOUR 597 - Internship in Mass Communications (1-3 Credits)**

Supervised professional experience. Maximum of three hours credit. Contract approved by instructor, advisor, and department head is required.

**Experiential Learning:** Experiential Learning Opportunity

**JOUR 598 - Directed Independent Studies (1-6 Credits)**

Individual mass media projects. Contract approved by instructor, advisor, and department head is required for undergraduate students.

**JOUR 599 - Advanced Special Topics (3 Credits)**

Advanced topics in journalism and mass communications. Individual topics and

**Prerequisites:** to be announced by title in class schedule.

**JOUR 700 - Proseminar (1 Credit)**

Recent ideas, procedures, and techniques that aid in the conduct of professional and scholarly work in mass communication.

**JOUR 701 - Research Methods in Mass Communication (3 Credits)**

Methods and techniques of quantitative mass communications research: content analysis; survey research applications; media effects studies.

**Prerequisites:** Statistics competency.

**JOUR 702 - Communication Theory (3 Credits)**

Theoretical approaches to the study of mass communication including empirical, interpretive, and critical perspectives.

**JOUR 704 - Editorial Interpretation, Policy, and Management (3 Credits)**

Social issues and responsibilities affecting the management of the mass media.

**JOUR 705 - Strategic Communications Principles (3 Credits)**

Integration of advertising, public relations, and marketing communication within an organization or agency.

**JOUR 706 - Media Law (3 Credits)**

General legal philosophy and law affecting the mass media.

**JOUR 707 - Contemporary Issues in Mass Communication (3 Credits)**

Current issues in mass communication including control, ownership, and conflicts affecting the media.

**JOUR 710 - Organizational Communication (3 Credits)**

Communication within organizations including theories, research, and current issues of concern in the field.

**JOUR 711 - Applied Mass Communication Research (3 Credits)**

Methods and techniques for designing, conducting, and analyzing research related to mass communication.

**Prerequisites:** JOUR 701.

**JOUR 715 - Strategic Communications Strategies (3 Credits)**

The strategic planning process applied to integrated communication principles.

**Prerequisites:** JOUR 705.

**JOUR 717 - Methods in Content Analysis Research (3 Credits)**

Introduction to content analysis for communication topics. Quantitatively analyze communication content of many kinds from newspaper articles to social media and online content.

**JOUR 720 - History of Mass Media (3 Credits)**

Periods, movements, and developments in mass communication.

**JOUR 725 - Strategic Communications Campaigns (3 Credits)**

Principles and strategies of integrated communication to prepare a communication campaign for a client organization.

**Prerequisites:** JOUR 705, JOUR 715.

**JOUR 730 - Literary Aspects of Journalism and Mass Communication (3 Credits)**

Literary and creative aspects of journalism and mass communication as exemplified in the works of English and American prose and verse writers.

**JOUR 740 - New Technologies and the Mass Media (3 Credits)**

New technologies related to the mass media.

**JOUR 746 - Educational Broadcasting (3 Credits)**

History, nature, production-performance, evaluation, and means of improvement of educational/instructional broadcasting.

**JOUR 747 - Independent Study in Journalism and Mass Communications (1-3 Credits)**

Independent study in an area of journalism and mass communications relevant to the student's professional and/or research goals.

**JOUR 749 - Literature of Mass Communication (3 Credits)**

Methods for locating, evaluating, and abstracting information from literature relevant to the study of mass communication.

**JOUR 750 - Foundations of Multimedia Journalism (3 Credits)**

Course is designed to teach the foundations of multimedia journalistic storytelling. It will expose students to core concepts and practices associated with news gathering, news writing and field production.

**JOUR 762 - Issues in Mass Communication Management (3 Credits)**

Current management-related issues confronting the media, including management of creative people, budgeting, time management on deadline.

**JOUR 771 - Media Economics (3 Credits)**

Media organizations as economic institutions, including microeconomic analysis, basic trends in revenues and expenditures, evaluation of financial health, and performance in covering business and economics.

**Prerequisites:** ECON 224.

**JOUR 772 - Seminar in Health, Science, and the Media (3 Credits)**

The media representation of issues in science, technology and environment from a social science perspective, with emphasis on consequences in areas such as public opinion, public policy, public understanding attitude formation, persuasion and behavior change.

**JOUR 773 - Risk Communication (3 Credits)**

The critical examination of classic and contemporary empirical research on risk communication as it pertains to health and environment issues, as well as emerging technologies.

**JOUR 774 - Public Relations Theory (3 Credits)**

An analysis of the theoretical foundation and issues relevant to the practice of public relations.

**JOUR 775 - Strategic Communication for Behavior and Social Change (3 Credits)**

Theories of persuasion, principles and best practices of strategic communication, as applied to health and cause communication campaigns. Recognize, and develop effective, persuasive communications for social and health topics.

**Prerequisites:** JOUR 715.

**JOUR 776 - Seminar in Interactive Media and Emerging Communication Technologies (3 Credits)**

Seminar that examines the social uses and impacts of interactive / emerging media technologies.

**JOUR 777 - Practicum in Mass Communications Management (3 Credits)**

Seminar and supervised professional management experience in a media organization.

**JOUR 779 - Theories of Global Communication (3 Credits)**

Discussion of competing theories that attempt to explain current issues in global communication.

**JOUR 789 - Selected Readings and Research (1-3 Credits)**

Selected readings course designed to facilitate student's specialized research interest. Permission of instructor required.

**JOUR 790 - Topics in Mass Communication (1-6 Credits)**

Specialized topics in mass communication, individual topics to be announced by title. May be repeated for credit.

**JOUR 797 - Project Preparation (1-3 Credits)**

Individualized scholarly activity to develop and execute special projects relevant to the study of mass communication.

**JOUR 799 - Thesis Preparation (1-9 Credits)****JOUR 801 - Communication Research Design (3 Credits)**

Principles and applications of quantitative and qualitative communication research designs.

**Prerequisites:** JOUR 701 and statistics competency.

**JOUR 802 - Seminar in Ethical Reasoning in Mass Communications (3 Credits)**

Ethical reasoning approaches in production and consumption of media messages.

**JOUR 803 - Seminar in Mass Communication Theory and Theory Construction (3 Credits)**

Meta-theoretical issues relevant to building theory in mass communication, concept explication, and forms of theory.

**JOUR 804 - Seminar in Mass Communication Historical Research Methods (3 Credits)**

Application of historical research methods to the study of mass communication.

**JOUR 805 - Seminar in Teaching Mass Communication (3 Credits)**

Teaching and learning methodologies and theories appropriate to mass communication instruction.

**JOUR 806 - Seminar in Mass Communication Legal Research Methods (3 Credits)**

Application of legal research methods to the study of mass communication.

**JOUR 807 - Advanced Communication Research (3 Credits)**

Advanced methods and techniques for analyzing empirical data for communication research.

**JOUR 808 - Communication Research: Critical, Cultural, and Naturalistic Approaches (3 Credits)**

Designing and conducting critical, cultural and naturalistic research.

**JOUR 809 - Seminar in Freedom of Speech (3 Credits)**

Issues involving the governmental protection and regulation of speech, and how that affects those involved in mass communication.

**JOUR 810 - Independent Research Project (3-6 Credits)**

Working closely with a faculty member, a student will design, and conduct a research project, with the objective of submitting the final report for publication or for presentation at an academic conference in the discipline. May be repeated for a maximum of 6 credit hours.

**JOUR 899 - Dissertation Preparation (1-12 Credits)**

## Latin (LATN)

**LATN 501 - Latin Drama (3 Credits)**

Selected plays of Plautus and Terence.

**LATN 502 - Cicero (3 Credits)**

Readings from a variety of Cicero's works to gain a concept of the man as a humanist.

**LATN 504 - Horace (3 Credits)**

Readings from the Odes.

**LATN 508 - Ovid (3 Credits)**

Selected readings from the *Metamorphoses*.

**LATN 513 - Tacitus (3 Credits)**

*Agricola* or selections from the *Annales*.

**LATN 514 - Livy (3 Credits)**

Readings from *Ab Urbe Condita*.

**LATN 525 - Roman Satire (3 Credits)**

Readings in Horace, Juvenal, and Petronius.

**LATN 530 - Latin Erotic Poetry (3 Credits)**

Readings from the elegies of Catullus, Tibullus, Propertius, and Ovid.

**LATN 537 - Lucretius (3 Credits)**

Readings from the *De Rerum Natura*.

**LATN 540 - Renaissance Latin (3 Credits)**

An examination of several genres of Latin writing from Europe during the period 1400-1600, emphasizing, but not limited to, Italian writers.

**LATN 551 - History of Latin Literature from the Origins to the Golden Age (3 Credits)**

Readings from the Twelve Tables to Virgil, supplemented by readings in history and scholarship. Designed to prepare majors and honors students for further study.

**LATN 552 - History of Latin Literature in the Silver Age (3 Credits)**

Readings from Ovid to Ammianus, supplemented by readings in history and scholarship. Designed to prepare majors and honors students for further study.

**LATN 560 - Independent Study (1-3 Credits)**

Special projects for independent study and research.

**LATN 561 - Independent Study (1-3 Credits)**

Special projects for independent study and research.

**LATN 580 - Teaching Advanced Latin in Secondary School (3 Credits)**

Methods and materials for teaching the Latin Advanced Placement courses in secondary school.

**LATN 614 - Intensive Grammar Review in Latin (3 Credits)**

Intensive grammar review for non-majors; designed as preparation for LATN 615.

**LATN 615 - Intensive Readings in Latin (3 Credits)**

Intensive reading for non-majors. Graduate students fulfill their foreign-language reading requirement with successful completion of the course. Undergraduates may take the course as an elective only.

**LATN 703 - Medieval Latin (3 Credits)**

Survey of the survival of the classical tradition in the middle ages from the birth of Ammianus Marcellinus to the fall of Constantinople (A.D. 330-1453).

**LATN 775 - Seminars on Selected Topics in Foreign Language Education (3 Credits)**

Topics will be identified by title in the schedule of classes. Each topic may be taken only once.

**LATN 790 - Directed Reading and Research (3 Credits)**

## Latin American Studies (LASP)

**LASP 501 - Contemporary Spanish America (3 Credits)**

Analysis and discussion of the 20th-century Spanish American history and the sociocultural forces that have contributed to define this area's national identities. Taught in Spanish.

**Cross-listed course:** SPAN 501

**LASP 541 - Colonial Spanish-American Literature to Neoclassicism (3 Credits)**

Survey of pre-Columbian poetry and of texts dating from the time of Columbus to the end of the Colonial period.

**Cross-listed course:** SPAN 541

## LAWH - Health Law (LAWH)

**LAWH 700 - Legal Foundations of the Health Care System I (3 Credits)**

Introduction to structure of government, sources of federal, state, and local law, judicial and administrative processes, the role of the lawyer, legal reasoning and analysis, and sources of law that govern and regulate access to U.S. health care system.

**LAWH 701 - Legal Foundations of the Health Care System II (2 Credits)**

Holistic understanding of the various aspects of the healthcare system related to sources of care, sources of payment, and regulatory and other legal systems that constrain and control the behavior of these sources and how these sources impact each other.

**Prerequisites:** LAWH 700.

**LAWH 702 - Legal Foundations of Health Care System Lab (1 Credit)**

Methods used to locate sources of health care regulations that require compliance and to collect required information.

**Prerequisites:** LAWH 700.

**Prerequisite or Corequisite:** LAWH 701.

**LAWH 710 - Public Health Systems (2 Credits)**

Understanding the role and duties of public health officials in the healthcare system, the various public health regimes that require compliance, and the role of public health funding streams in achieving quality compliance for private parties. Health Care Compliance Certificate Students are excluded.

**Prerequisites:** LAWH 700, LAWH 701, and LAWH 702.

**LAWH 712 - Bioethical Principles (Applied Learning) (2 Credits)**

Moral obligations that influence health care professional norms and regulatory structures. Health Care Compliance Certificate Students are excluded.

**Prerequisites:** LAWH 700, LAWH 701, and LAWH 702.

**LAWH 714 - Health Care Contracting (Applied Learning) (2 Credits)**

Health care contracts. Health Care Compliance Certificate Students are excluded.

**Prerequisites:** LAWH 700, LAWH 701, and LAWH 702.

**LAWH 716 - Medicare Compliance for Medical Facilities (3 Credits)**

Medicare reporting and structural requirements for hospitals.

**Prerequisites:** LAWH 700, LAWH 701, and LAWH 702.

**LAWH 720 - Health Policy Advocacy (2 Credits)**

Communication of health policy concerns to decision makers. Health Care Compliance Certificate Students are excluded.

**Prerequisites:** LAWH 700, LAWH 701, and LAWH 702.

**LAWH 722 - Risk Management (2 Credits)**

Health care professionals' and institutions' limitation and management of risks.

**Prerequisites:** LAWH 700, LAWH 701, and LAWH 702.

**LAWH 724 - Certificates of Need (2 Credits)**

Navigating the certificate of need process in the health care industry.

**Prerequisites:** LAWH 700, LAWH 701, and LAWH 702.

**LAWH 728 - Comparative Studies in International Health Care (2 Credits)**

Examining health care systems from a legal and structural perspective in nations outside of the United States. Health Care Compliance Certificate Students are excluded.

**Prerequisites:** LAWH 700, LAWH 701, and LAWH 702.

**LAWH 730 - Healthcare Structure Planning for Companies & Non-Profits (3 Credits)**

Introduction to structure of health care practices and their relationships with others, examining the regulatory compliance requirements necessary to maintain nonprofit taxation status at the state and federal levels. Health Care Compliance Certificate Students are excluded.

**Prerequisites:** LAWH 700, LAWH 701, and LAWH 702.

**LAWH 732 - Medicare Quality Compliance (3 Credits)**

In-depth examination of compliance with various quality initiatives and an understanding of the sources for the regulations and rules.

**Prerequisites:** LAWH 700, LAWH 701, LAWH 702, and LAWH 716.

**LAWH 734 - Healthcare Fraud & Abuse Compliance (2 Credits)**

Examining federal laws and regulations to prohibit healthcare fraud and abuse.

**Prerequisites:** LAWH 700, LAWH 701, and LAWH 702.

**LAWH 736 - Third Party Billing Compliance (2 Credits)**

Providing an understanding of the requirements for properly billing third-party payers.

**Prerequisites:** LAWH 700, LAWH 701, and LAWH 702.

**LAWH 738 - HIPAA and Electronic Medical Records Compliance (3 Credits)**

Requirements for organizations that handle protected health information, including information about which entities need to comply with laws protecting such information and to what extent.

**Prerequisites:** LAWH 700, LAWH 701, LAWH 702.

**LAWH 740 - Antitrust Compliance (3 Credits)**

Introduction to potential antitrust issues for large scale healthcare organizations, offering a survey of situations that could trigger antitrust investigations and litigation from both state and federal antitrust enforcement agencies.

**Prerequisites:** LAWH 700, LAWH 701, and LAWH 702.

**LAWH 750 - Health Systems Legal Externship (2 Credits)**

Learning about health systems through working at an approved location to gain first-hand experience in work related to the student's course of study. Health Care Compliance Certificate Students are excluded.

**Prerequisites:** LAWH 700, LAWH 701, LAWH 702.

## Library & Info Science (SLIS)

**SLIS 501 - Teaching and Training in Distributed Environments (3 Credits)**

Knowledge and skills for applying complementary technologies for learning in distributed learning environments (Pre-K-lifelong) through lecture, demonstration, and discussion.

**SLIS 523 - Materials for Early Childhood (3 Credits)**

Media resources and techniques for children from birth to 9 years. Reading interests and developmental needs of young children. Authors, illustrators, indexes, bibliographic tools, evaluation sources, and professional literature. Not open to students enrolled in M.L.I.S. program.

**SLIS 525 - Materials for Children (3 Credits)**

Media resources for children. Reading interests of children and their curricular and independent needs for information. Authors, illustrators, indexes, bibliographic tools, and sources of evaluation of materials for children. Techniques and literature for read-aloud programs and storytelling. Not open to students enrolled in M.L.I.S. program.

**SLIS 527 - Materials for Adolescents (3 Credits)**

Media resources for adolescents. Reading interests of adolescents and their curricular and independent information needs. Study of relationships of media to information needs and critical comparison between classic and contemporary materials for adolescents. Indexes, bibliographic tools, and sources of evaluation of materials. Not open to students enrolled in M.L.I.S. program.

**SLIS 529 - Special Topics in Library and Information Studies (3 Credits)**

Specific topics of current concern to the library, information, and media professions to be identified by title. Not open to students enrolled in M.L.I.S. program.

**SLIS 530 - Applications of Information Technology and the Infrastructure (3 Credits)**

Introductory knowledge for school library media specialists, teachers, administrators, parents, and other citizens interested in practical applications of information technology to support learning, decision making, and community building.

**SLIS 534 - Knowledge Discovery Techniques (3 Credits)**

Knowledge discovery techniques and applications.

**Prerequisites:** SLIS 434 for Undergraduate Students.

**SLIS 560 - Information Visualization (3 Credits)**

Foster theoretical insights about information visualization. Prepare small and large-scale datasets for visual representations. Project-based and students will map real datasets and understand the methods to interpret the visualizations.

**SLIS 600 - Storytelling: Theory, Practice, and Development (3 Credits)**

Storytelling methods, techniques, and materials encompassing heritage, art, literature, and programming.

**SLIS 701 - Ethics, Values, and Foundational Principles of Library and Information Science Professions (3 Credits)**

Introduction to the issues and core values of library and information professions, including equity of access, literacy and learning, information policy, collaboration, service, professional growth and development, and culturally responsive practice.

**SLIS 702 - Community Engagement and Service (3 Credits)**

Explores the role of library and information organizations in communities, with a focus on building community relationships, engagement, and outreach.

**SLIS 703 - Reference and Instruction (3 Credits)**

Introduction to the design and delivery of instructional services and assistance on the use of information resources to promote information literacy and informed decision-making.

**SLIS 704 - Leadership in Information Organizations (3 Credits)**

Introduction to the nature, development, roles, and fundamental issues of leadership in library and information organizations.

**SLIS 705 - Research Design and Evaluation (3 Credits)**

Introduces the research process as applied to library and information science topics with an emphasis on research methods, critical evaluation, and the practical application of research.

**SLIS 706 - Information Organization and Access (3 Credits)**

Explores the design, use, and evaluation of information organization and retrieval systems to support digital curation and preservation, metadata generation, and information-seeking.

**SLIS 707 - Information Organization and Retrieval (3 Credits)**

Issues and techniques of knowledge representation and information organization, information retrieval systems, and users' information seeking behavior.

**Prerequisite or Corequisite:** SLIS 701.

**SLIS 710 - History of Information Organizations and Technologies (3 Credits)**

A survey, from ancient times to the present, of the evolution and social role of information organizations (libraries, archives, information centers, etc.) and technologies (books, journals, computers, etc.). Emphasis on the U.S. in the 19th and 20th centuries.

**Prerequisites:** SLIS 701.

**SLIS 711 - Introduction to Archival & Records Studies (3 Credits)**

Nature and use of archives and records; functions of archives and records professionals; and legal, ethical, and political issues in archives and records.

**SLIS 715 - Printing (1 Credit)**

Introduction to printing with movable type. This course is designed to give students some experience in designing and printing books and broadsides. Examination of paper, typefaces, composition work, and simple bookbinding are included.

**SLIS 716 - Introduction to Bibliography and Textual Studies (3 Credits)**

Introduction to analytical, descriptive, and textual bibliography, and to the principles and practice of editing.

**SLIS 717 - Special Collections Librarianship (3 Credits)**

Introduction to the missions, professional standards and best practices of special collections librarianships. Topics include access and acquisitions, collection assessment and development, collection management and maintenance, donor relations, public programming and current issues and trends. Restricted to SLIS graduate students.

**SLIS 718 - History of Children's and Young Adult Literature (3 Credits)**

Historical overview of the literary content, illustration, and social values of children's and young adult literature written in English. Examines the influence of movements such as Romanticism, Rationalism, and postmodernism, as well as changing trends over time.

**SLIS 719 - Preservation Planning and Administration (3 Credits)**

The planning and administration of preservation programs in libraries, archives, records centers, and manuscript depositories.

**Prerequisites:** SLIS 701.

**SLIS 720 - School Library Media Program Development (3 Credits)**

Roles, functions, and organization of school library media programs. Systematic planning and evaluation, leadership, advocacy, and integration of program into the curriculum.

**SLIS 721 - Seminar in School Library Programs (3 Credits)**

Problems relating to contemporary school media programs will be identified and analyzed by students, drawing from their own experiences, pertinent literature in the field, and field investigations.

**Prerequisites:** SLIS 701, SLIS 703, SLIS 705, SLIS 707, SLIS 720.

**SLIS 724 - Special Libraries (3 Credits)**

An overview of industrial, business, governmental, and professional libraries and related information organizations. Study of their organizational characteristics, governance, services, distinctive features. Major part of course is simulation of information management problems in these organizations.

**SLIS 725 - Digital Libraries (3 Credits)**

History and current state of digital records, including their storage, organization, and preservation in digital libraries.

**Prerequisites:** SLIS 701, SLIS 707.

**SLIS 726 - Knowledge Management for Library and Information Professionals (3 Credits)**

An introduction to the background, principles, practices, and technologies of knowledge management for library and information professionals.

**SLIS 727 - Health Sciences Library Services (1 Credit)**

A detailed study of traditional and innovative services characteristic of health science libraries. Includes community study design and evaluation of services. For those students committed to careers in health sciences libraries.

**Prerequisites:** SLIS 726.

**SLIS 728 - Public Library Systems (3 Credits)**

Course focuses upon three topics: 1) organizational patterns for various library operations, local and regional; 2) the political environment of the public library; and 3) major problems confronting public library systems.

**Prerequisites:** SLIS 701.

**SLIS 729 - Academic Libraries (3 Credits)**

An analysis of the historical development and current issues in academic libraries.

**Prerequisites:** SLIS 704.

**SLIS 730 - Cataloging Information Materials (3 Credits)**

An in-depth study of AACR2 covering both print and nonprint materials; searching bibliographic materials in a database, editing and updating them; principles of coding, tagging, and entering the results into a database; discussion of administrative problems.

**Prerequisites:** SLIS 702.

**Prerequisite or Corequisite:** SLIS 707.

**SLIS 731 - Subject Analysis and Classification (3 Credits)**

Study of major classification and subject authority systems. Emphasizes the understanding and application of these systems in information agencies.

**Prerequisites:** SLIS 730.

**SLIS 732 - Indexing and Abstracting (3 Credits)**

Introduction to principles and practices in abstracting and indexing.

**Prerequisite or Corequisite:** SLIS 707.

**SLIS 733 - Serials (3 Credits)**

An introductory study of methods and problems in acquiring, organizing, and retrieving serial publications with an emphasis on the special features of serials. Includes an introduction to computer applications.

**Prerequisites:** SLIS 702.

**SLIS 734 - Government Information Sources (3 Credits)**

Creation, acquisition, organization, retrieval, and use of government-produced information. Emphasis is on U.S. government information but includes attention to state, local, and international sources.

**Prerequisites:** SLIS 703, SLIS 707.

**SLIS 735 - Metadata (3 Credits)**

Examination of metadata definition, selection and applications; Role of metadata in information discovery, acquaintance with various metadata schemes and standards for libraries, museums, archives and info centers.

**Prerequisites:** SLIS 707.

**SLIS 738 - Seminar in Technical Services (3 Credits)**

Management, personnel, and materials within technical service departments for all types of libraries. Standardization, centralized and cooperative efforts, automation and evaluation as applied to all functions within technical services departments.

**Prerequisites:** SLIS 702.

**SLIS 740 - Online Information Services (3 Credits)**

Direct experience searching online databases and examination of related administrative issues.

**Prerequisites:** SLIS 707.

**SLIS 741 - Educational Services in Library and Information Organizations (3 Credits)**

Applications of human learning theory and presentation techniques to information literacy programs and curriculum collaboration for library and information professionals.

**Prerequisites:** Completion of 9 semester hours of SLIS graduate-level classes.

**SLIS 742 - Curricular Role of the School Librarian (3 Credits)**

Role of the school library media specialist in integrating the school library media program into a K-12 standards-based curriculum, including best practices, needs assessment, collaboration, instructional design, and resource provision.

**Prerequisites:** SLIS 701, SLIS 706, SLIS 703 preferred and required education courses (for initial certification candidates).

**SLIS 743 - Health Information Retrieval in Electronic Environments (3 Credits)**

Presents a survey of electronic information resources in the health sciences and an introduction to advanced searching techniques and analytical skills to access biomedical literature.

**SLIS 744 - Music Libraries and Information Services (3 Credits)**

Acquisition of and special cataloging requirements for printed music, recordings, and multimedia; collection management; administration of music libraries; preservation/conservation of special materials.

**SLIS 745 - Social Science Information Services (3 Credits)**

Considers how literature and information services in the social sciences are organized for the purpose of interpretation and delivery. Students survey the literature of psychology, sociology, political science, and other disciplines in some detail. Practice in question consultation and database searching will be included.

**Prerequisites:** SLIS 703, SLIS 707.

**SLIS 746 - Humanities and Arts Information Services (3 Credits)**

A survey and evaluation of the nature, history, and bibliography of the literature of the humanities and arts. Emphasizes the distinctive features of materials, research, communication, and information-seeking patterns.

**Prerequisites:** SLIS 703.

**SLIS 747 - Science and Technology Information Services (3 Credits)**

A survey of literature in the basic sciences and applied technical fields. Examines distinctive features of materials, research, and information communication patterns in the various fields. Practice in question consultation and database searching will be included.

**Prerequisites:** SLIS 703, SLIS 707.

**SLIS 748 - Business Information Sources and Services (3 Credits)**

Coverage of the bibliographic and information systems relevant to contemporary managerial information needs, with emphasis on the literature of business and finance, and including statistical materials, literature guides, and investment services. Specialized problems related to the organization and operation of business information systems. Practice in question consultation and database searching will be included.

**Prerequisites:** SLIS 740.

**SLIS 749 - Health Sciences Information Resources (3 Credits)**

Characteristics and use of print and computer-based materials in the health sciences and for general reference librarians.

**SLIS 750 - Information and Records Management (3 Credits)**

An introduction to the role and functions of the information manager in organizations with emphases on use, retention, and management of information and records.

**Prerequisites:** SLIS 701.

**SLIS 751 - Libraries, Literacy, and Literature (3 Credits)**

Ways in which libraries and librarians become more effective providers and partners in the literacy movement.

**Prerequisites:** SLIS 701.

**SLIS 752 - Diversity in Libraries (3 Credits)**

Nontraditional library users in all types of libraries. Literacy programs, disabled and/or institutionalized persons, older adults, and members of selected ethnic groups.

**SLIS 753 - Seminar in Information Services (3 Credits)**

Planning and evaluating information services. Emphasis on policy and decision making regarding current issues.

**SLIS 754 - Library Programming for Children and Young Adults (3 Credits)**

The nature, philosophy, and development of non-curricular programs for children and young adults in the school and public library. Among the types of programs to be discussed are storytelling, film programs, reading programs, programs for parents, and other activities associated with library service to young people. Students will study the principles and problems involved in designing, implementing, and evaluating programs of this nature.

**SLIS 755 - Popular Materials and Programming for Adults (3 Credits)**

Materials popular with adult readers and programs utilizing those materials. Extensive reading and experience in planning and presenting programs.

**SLIS 756 - Children's Materials (3 Credits)**

A study of materials intended for children of elementary school age (6-13) with emphasis on the process of evaluating them to meet the educational, cultural, and recreational needs of children.

**SLIS 757 - Young Adult Materials (3 Credits)**

A study of materials for young adults (13-19) with emphasis on the process of evaluating them to meet the educational, cultural, and recreational needs of young adults.

**SLIS 758 - Consumer Health Resources and Information Services (3 Credits)**

Concepts and current trends in the creation, implementation, and evaluation of adult consumer health resources and services, including consumer health informatics and e-health.

**SLIS 759 - Materials for Early Childhood (3 Credits)**

A study of picture books and audiovisual materials intended for the very young child through age 9 with emphasis on the process of evaluating these materials to meet the educational, cultural, and recreational needs of very young children.

**SLIS 760 - Materials and Services for Latino Youth (3 Credits)**

Introduces a wide range of print and nonprint materials appropriate for Latino youth. Provides resources for librarians and educators serving young Latinos literacy needs.

**SLIS 761 - Information Technologies in the School Library Program (3 Credits)**

Technology management, use of technology and nonprint resources, and their integration into the K-12 curriculum.

**Prerequisites:** SLIS 706.

**SLIS 765 - Planning Library Facilities (3 Credits)**

An introduction to the process of planning new and renovated spaces and facilities. Content covers roles of participants in planning preparation of building program and examines examples of recent buildings.

**Prerequisites:** SLIS 701, SLIS 704.

**SLIS 766 - Collection Development and Acquisitions (3 Credits)**

An examination of information agencies and their purposes, collections, collection policies, and acquisition procedures.

**Prerequisites:** SLIS 701.

**SLIS 767 - Management of Public Library Youth Services (3 Credits)**

Planning, implementation, and evaluation of public library services for children and young adults.

**Prerequisites:** SLIS 701.

**SLIS 768 - Problems in Library and Information Agency Administration (3 Credits)**

Examines in detail frequently occurring problems that require decision activity by library and information agency managers. May be repeated for credit as topics change.

**Prerequisites:** Completion of 9 semester hours of SLIS graduate-level classes.

**SLIS 770 - Design and Management of Databases (3 Credits)**

Databases used in libraries and other information agencies, including operational and functional design. Extensive hands-on evaluation of selected database software packages.

**Prerequisites:** SLIS 701, SLIS 707.

**SLIS 772 - Strategic Intelligence for Information Professionals (3 Credits)**

Principles and practices of information gathering and analysis of open source information, including competitive intelligence, environmental scanning, and issues management; information evaluation and synthesis; role of strategic intelligence in modern organizations.

**Prerequisites:** SLIS 740 or SLIS 748.

**SLIS 775 - Practicum in Organizing and Managing Web Resources (3 Credits)**

Concepts and practices necessary to organize and manage Web resources in libraries and in other information agencies.

**SLIS 776 - Web Technologies for Information Specialists (3 Credits)**

Evaluation and programming of Web technologies and related issues in libraries and in other information agencies.

**Prerequisites:** SLIS 775.

**SLIS 777 - Design and Management of Digital Image Collections (3 Credits)**

This course presents introductory concepts related to the creation, manipulation, and implementation of visual collections in various online environments. It identifies resources, procedures, and skills needed to successfully design, implement, and manage digital image collections in a collaborative environment.

**Prerequisites:** SLIS 706, passing of SLIS Technology Test.

**SLIS 778 - Seminar in Information Science (3 Credits)**

A critical examination of the principles, trends, and issues of modern information systems design and use.

**Prerequisite or Corequisite:** SLIS 707.

**SLIS 780 - Information Networks (3 Credits)**

Identification and evaluation of information networks in libraries and other information agencies. The nature of networks, including hardware and software applications.

**Prerequisites:** SLIS 701, SLIS 707.

**SLIS 787 - Seminar in Applied Information Systems for Information Specialists (3 Credits)**

Application, management and evaluation of information systems for libraries and other information agencies, including emerging technical, administrative and management issues related to these systems.

**Prerequisites:** SLIS 707.

**SLIS 791 - Study Abroad: Great Libraries of the World (3 Credits)**

Discussion and critical examination of selected topics of current international debate regarding information and related technologies. Specific topics to be identified by title. May be repeated three times for a maximum of 9 hours.

**SLIS 794 - Internship in Library and Information Science (3-6 Credits)**

Supervised field experience in library, media center, or other information agency relevant to student's professional goals.

**Prerequisites:** SLIS 701, SLIS 705, SLIS 707.

**SLIS 795 - Special Topics in International Information Issues (1-3 Credits)**

Discussion and critical examination of selected topics of current international debate regarding information and related technologies. Topics vary by title. May be repeated a maximum of 3 times.

**SLIS 796 - Independent Study in Library and Information Science (1-6 Credits)**

Independent study in an area of library and information science relevant to the student's professional goals.

**Prerequisites:** SLIS 701, SLIS 705, SLIS 707.

**SLIS 797 - Selected Topics in Librarianship and Information Services (1-3 Credits)**

Discussion and investigation of selected topics of current concern to the library and information profession. Specific topics to be identified by title.

**SLIS 798 - Specialist Project Preparation (3-6 Credits)**

Prerequisite: Specialist degree students only. Approval of the appropriate application for specialist project must be submitted early in the semester preceding enrollment.

**SLIS 801 - Research Issues in Library and Information Science (3 Credits)**

Seminar examining a range of issues, theories, and research questions that currently shape thinking and discourse in library and information science.

**SLIS 802 - Theory and Research Methods in Library and Information Science (3 Credits)**

Seminar exploring problems and issues in theory formulation and research methods, including quantitative, qualitative, and multi-method approaches. Not auditable.

**SLIS 803 - Information and Society (3 Credits)**

Seminar examining the historical and intellectual foundations of library and information science in relation to the nature and current roles of information organization and information transfer in societies. Not auditable.

**SLIS 804 - Preparation for Academic Careers in Library and Information Science (3 Credits)**

Seminar examining the history, trends, and current status of academic careers in library and information science, emphasizing knowledge and skills needed for successful teaching, scholarship, and service. Not auditable.

**SLIS 805 - Information Policy and Ethics (3 Credits)**

Seminar in the critical and analytical study of information policy and ethical issues at the individual, institutional, and international levels. Not auditable.

**SLIS 806 - Communication Processes and Information-Seeking Behavior (3 Credits)**

Seminar examining the characteristics of communication, human information interaction, and information-seeking behavior, with emphasis on social network models, and the relationship between information-seeking behaviors and the design of communication and information systems and services. Not auditable.

**SLIS 809 - Planning and Evaluating Colloquia In Library and Information Science (1 Credit)**

Involves students in planning, managing, and evaluating colloquia, including recruiting speakers, scheduling venues, attracting audiences, conducting the sessions, and evaluating the results. May be repeated up to three times for credit.

**SLIS 810 - Human Information Interactions and Cultural Institutions (3 Credits)**

Explores libraries and other cultural institutions as lifelong educational environments where complex human interactions take place. Over the past two years, the promising intersection of cultural organizations has been a topic of strong interest to practitioners and scholars associated with these institutions. This course introduces the interdisciplinary framework, social perspectives, and research methods required to development an understanding of this intersection, the changes that will be required as new technologies alter the way that people engage with these institutions, and the challenges that have begun to emerge as their boundaries become less defined. This type of interdisciplinary framework is needed to address these topics and address both the human information needs that impel cultural institutions and the steps and strategies by which these needs may be recognized and resolved in these information rich environments.

**SLIS 811 - Technologies in Cultural Institutions (3 Credits)**

This course provides an opportunity for doctoral students to explore the issues associated with the implementation, evaluation and management of various technologies found in cultural institutions. Students will gain practical experience working with different technologies through class demonstrations and will be exposed to different technical environments via class field trips.

**SLIS 899 - Dissertation Preparation (1-12 Credits)**

CL: 2020.

## Linguistics (LING)

**LING 502 - French Linguistics (3 Credits)**

The structure, morphology, and syntax of modern French.

**Cross-listed course:** FREN 517

**LING 503 - Introduction to German Linguistics (3 Credits)**

Structural and descriptive linguistics applied to the German language.

**Cross-listed course:** GERM 515

**LING 504 - Introduction to Spanish Linguistic (3 Credits)**

Phonology, morphology, and syntax of modern Spanish.

**LING 505 - Interdisciplinary Topics in Linguistics (3 Credits)**

Topics selected by the instructor for specialized study. Course content varies and will be announced in the schedule of classes title. May be repeated with different title.

**LING 512 - French Phonology (3 Credits)**

The sound system and its functioning in the morphological system of French from the point of view of current phonological theory.

**Cross-listed course:** FREN 516

**LING 514 - Contrastive English-Spanish Phonetics and Phonology (3 Credits)**

Introduction to the study of phonetics and phonology and their application to the sounds and sound systems of English and Spanish. Includes transcription practice and discussion of relevance to teaching.

**Cross-listed course:** SPAN 517

**LING 521 - Advanced English Grammar (3 Credits)**

Practical survey of the syntactic structures of English; usage, social and regional variation emphasis on data.

**Prerequisites:** LING 421/ENGL 450 or LING 600/ENGL 680.

**LING 527 - Introduction to Mathematical Methods in Linguistics (3 Credits)**

Introduction to mathematical mechanisms that play a prominent role in the formalization of syntactic and semantic theories, showing how they are applied to an understanding of the working parts of human language. The topics covered include: set theory, logic, English as a formal language, and languages & grammars.

**LING 530 - Language Change (3 Credits)**

Major ways in which phonetics, phonology, syntax, morphology, and semantics change through language history; social factors which promote innovation.

**LING 533 - Introduction to the Germanic Languages (3 Credits)**

Introduction to historical Germanic linguistics including a survey of the Old Germanic languages (Old English, Old Frisian, Old Saxon, Old High German, Old Norse, Gothic); comparative phonology, morphology, and syntax, typology of modern Germanic languages and dialects; and common Germanic in its Indo-European context.

**Cross-listed course:** GERM 517



**LING 540 - Topics in Language and Culture (3 Credits)**

Introduction to sociolinguistic issues, focusing on a single language. Course content varies and will be announced by title. May be repeated twice as topics vary.

**LING 541 - Language and Gender (3 Credits)**

Approaches to gender and language emphasizing the social grounding of both; how language reflects sociocultural values and is a tool for constructing different types of social organization.

**Cross-listed course:** ANTH 555, WGST 555

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy, GLD: Professional and Civic Engagement Leadership Experiences

**LING 542 - Research in Language Conflict and Language Rights (3 Credits)**

Research into the parameters governing linguistic conflicts and language rights issues, involving a close examination of the nexes of language and: individual and ethnic identity, culture, dialects, bilingualism. Examination of regional, national, and international case studies, with particular attention to nationalism, language revitalization, and language planning.

**Cross-listed course:** POLI 542

**LING 543 - Discourse, Gender, and Politics of Emotion (3 Credits)**

Anthropological approach to issues of discourse, gender, and emotion. Issues under consideration include the social control, force, and forms of emotional discourse and the relationship between emotion and culture from gender-oriented perspectives.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

**LING 545 - Anthropological Approaches to Narrative and Performance (3 Credits)**

The ways people from various cultures reflect on, reinforce, and construct their social realities through narrating, which will be considered as both artistic expression and social action.

**Cross-listed course:** ANTH 553

**LING 546 - Japanese Language in Society (3 Credits)**

Japanese language and communication in its socio-cultural context; emphasis on comparison with American English. Taught in English.

**Cross-listed course:** JAPA 500

**LING 548 - German Sociolinguistics (3 Credits)**

Introduction to the study of variation in Modern German. Traditional German dialectology and dialect geography, language and society, multilingualism in the German-speaking countries, German in contact with other languages.

**Cross-listed course:** GERM 518

**LING 554 - The Structure of Modern Spanish (3 Credits)**

Description of the grammatical structures of Modern Spanish. Intensive study of the theory and practice of word formation and sentence structure of Spanish.

**Cross-listed course:** SPAN 516

**LING 556 - Language and Globalization (3 Credits)**

Anthropological approach to issues of language and globalization. Linguistic consequences of globalization under consideration include communicative patterns, linguistic change, and language and political economy.

**Cross-listed course:** ANTH 556

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy, GLD: Global Learning, GLD: Professional and Civic Engagement Leadership Experiences

**LING 565 - Philosophy of Language (3 Credits)**

An examination of concepts and problems such as meaning, reference, analyticity, definition, and the relation between logic and philosophy.

**Prerequisites:** PHIL 202.

**Cross-listed course:** PHIL 517

**LING 567 - Psychology of Language (3 Credits)**

Theories of speech perception, linguistic theories of syntax and semantics, the brain mechanisms underlying language, the development of language in children, and the role of language in thought.

**Cross-listed course:** PSYC 506

**LING 570 - Introduction to Language Development (3 Credits)**

The language acquisition process in normal children, including the development of semantics, morphology, syntax, phonology, and pragmatics; American dialects and bilingualism.

**Prerequisites:** COMD 501 and COMD 507.

**Cross-listed course:** COMD 570

**LING 600 - Survey of Linguistics (3 Credits)**

Survey of core areas of linguistics and extensions to closely related disciplines. Introduction to the linguistic component of human cognition. Formal description and analysis of the general properties of speech and language, the organization of language in the mind/brain, and cross-linguistic typology and universals.

**Cross-listed course:** ANTH 600, ENGL 680

**LING 627 - Introduction to Semantics and Pragmatics (3 Credits)**

An introduction to the study of linguistic meaning, including the following topics: meaning, reference, and truth; the connections among language, thought, and reality; word meaning and sentence meaning; possible worlds and modality; thematic roles; meaning and context; presupposition and implicature; speech acts; formal semantics; and cognitive semantics.

**Prerequisites:** LING 300, LING 301, or LING 600.

**LING 650 - Introduction to Morphology (3 Credits)**

Foundations of generative morphology, focusing on morphological data collection and analysis; the structure of the lexicon; and the interfaces between morphology and phonology, semantics, and syntax.

**Prerequisites:** LING 300, LING 301, or LING 600.

**LING 701 - Quantitative Approaches to Linguistic Analysis (3 Credits)**

Description, visualization, and basic statistical analysis of both discrete and continuous linguistic data from various linguistic subfields using R.

**LING 710 - Introduction to Phonology (3 Credits)**

The phonetic basis of phonology; phonological structure; lexical representation; cross-linguistic survey of major types of phonological processes; emphasis on data analysis.

**Prerequisites:** LING 600.

**LING 711 - Phonological Theory (3 Credits)**

Advanced study of theoretical issues in phonology.

**Prerequisites:** LING 600 and LING 710.

**LING 712 - Articulatory and Acoustic Phonetics (3 Credits)**

Physical and anatomical mechanisms for producing speech, phonetic representations and models of speech perception and prosody, acoustic characteristics of the speech signal, use of international phonetic alphabet symbols (IPA) to describe speech sounds in the world's languages, training in experimental and field methods in phonetic research.

**Prerequisites:** LING 600.

**LING 720 - Introduction to Syntax (3 Credits)**

Foundations of generative grammar, focusing on the syntax of English; universal principles of basic clause structure and derived constructions; emphasis on syntactic argumentation and cross-linguistic generalization.

**Prerequisites:** LING 600.

**LING 721 - Syntactic Theory (3 Credits)**

Advanced exploration of a principled model of the syntactic component of universal grammar and the interface between this module and semantic interpretations and lexical information. Competing hypotheses are compared.

**Prerequisites:** LING 600 and LING 720.

**LING 728 - Semantic Theory (3 Credits)**

The formal study of linguistic meaning, including the following topics: Fregean truth-conditional semantics; lexical decomposition; predication and modification; lambda abstraction; generalized quantification; intentional and extensional contexts; tense, aspect, and modality; propositional attitudes; and indexicality.

**Prerequisites:** LING 600 or LING 627.

**Cross-listed course:** PHIL 719

**LING 729 - Pragmatic Theory (3 Credits)**

Study of formal approaches to pragmatic phenomena such as focus, presupposition, and implicature; examination of deictic, contextual and perspectival expressions; survey of pragmatic frameworks such as Relevance Theory and Discourse Representation Theory; study of information structural properties of natural languages, including topic-comment structure, given-new contrasts, definiteness versus indefiniteness.

**Prerequisites:** LING 600 or LING 627.

**Cross-listed course:** PHIL 717

**LING 730 - Historical Linguistics (3 Credits)**

Innovation in phonology, morphology, syntax, and semantics; evidence from texts, social and regional dialects; emphasis on theories of language change.

**Prerequisites:** LING 600 and LING 610.

**LING 731 - History of English Language (3 Credits)**

The historical background of Modern English with attention to the major linguistic and cultural developments which distinguish English from other related languages. No prior knowledge of Old English or Middle English is required.

**Cross-listed course:** ENGL 781

**LING 732 - History of the French Language (3 Credits)**

Development of the French language from its origins to 1600.

**Cross-listed course:** FREN 715

**LING 733 - History of the German Language (3 Credits)**

Development of German in the Germanic, Old High German, Middle High German, and New High German periods. Phonology, morphology, syntax, semantics, and the relationship between dialects and the standard language.

**Cross-listed course:** GERM 516

**LING 734 - History of the Spanish Language (3 Credits)**

Development of the language from its origins to the present day.

**Cross-listed course:** SPAN 715

**LING 739 - The Evolution of Linguistic Theory, Practice, and Methods (3 Credits)**

Introduces basic resources of discipline and focuses on the development of linguistics in terms of dominant issues and analytical methodology with emphasis on paradigm shifts.

**Prerequisites:** LING 600, LING 610, LING 620.

**LING 740 - Introduction to Sociolinguistics (3 Credits)**

An examination of choices speakers in the same community make between styles, dialects, and languages; their association with social group memberships; speakers' perceptions of interpersonal relationships.

**Prerequisite or Corequisite:** LING 600.

**LING 741 - African American English (3 Credits)**

Linguistic approaches to the history, structure, and use of African American English.

**LING 742 - Language and Race (3 Credits)**

Sociolinguistic examination of the relationship between language and race, including ethnolects, identity construction, linguistic appropriation, linguistic racism, and antiracism in everyday and institutional contexts.

**LING 743 - Analysis of Conversation (3 Credits)**

Types of interactive organization found within conversation and the methods and procedures used by participants to achieve order.

**Cross-listed course:** ANTH 756

**LING 744 - Language Contact Phenomena (3 Credits)**

The structural effects of contact between speakers of more than one language on the language involved. Borrowing, code-switching, convergence, language death, development of pidgins and creoles.

**Prerequisites:** LING 600.

**LING 745 - Varieties of American English (3 Credits)**

Social and regional variation in American English since the colonial period.

**Cross-listed course:** ENGL 782

**LING 746 - Sociophonetics (3 Credits)**

The intersection between variation in phonetic/phonological form and social factors (such as a speaker's region, age, group identity, ethnic background, sexual orientation, level of education, etc.), acoustic production of variation, effects of sociophonetic variation on speech perception, on language change, and on language acquisition.

**LING 747 - Language as Social Action (3 Credits)**

Examines language as a social, cultural, and political matrix. Topics include ideology, gender, race, power, agency, and resistance. Students will apply linguistic theories in their own analyses of everyday speech.

**Cross-listed course:** ANTH 747

**LING 748 - Introduction to Linguistic Anthropology (3 Credits)**

A comprehensive introduction to linguistic anthropology, its relationship(s) to sociolinguistics, discourse analysis, and conversation analysis. Contributions made to social theory and theories of language and discourse will be understood.

**Prerequisites:** LING 600.

**Cross-listed course:** ANTH 748

**LING 765 - Studies in Philosophy of Language (3 Credits)**

Examination of concepts such as meaning, reference, analyticity, and translational indeterminacy; evaluation of accounts of speech acts, the semantics of propositional attitudes, and metaphor and other pragmatic phenomena.

**Cross-listed course:** PHIL 718

**LING 772 - Technology in Foreign Language Education (3 Credits)**

Introduction to technology in language teaching and the connection between language acquisition and the implementation of Internet and multimedia technology.

**Cross-listed course:** EDTE 772, FORL 772

**LING 780 - Discourse Analysis (3 Credits)**

Underlying principles of how phonological, syntactic, and lexical features are organized above the sentence level; alternative choices of these features and how they contribute to the speaker's/writer's goals.

**Prerequisites:** LING 600.

**LING 782 - Language Ideology: The Political Economy of Language Beliefs and Practices (3 Credits)**

Linguistic anthropological approaches that examine how ideological systems mediate social structures and linguistic /discursive forms and functions. Topics range from language and political economy, identity and identifications, institutions, and nation-building/nationalism.

**Cross-listed course:** ANTH 782

**LING 790 - Second Language Acquisition (3 Credits)**

Study of current theory and research in second language acquisition and exploration of relationships between such work and classroom second language learning and teaching. Examination of research techniques used in applied linguistics.

**Prerequisite or Corequisite:** LING 600.

**LING 791 - Theory and Methodology in Second Language Acquisition (3 Credits)**

Current issues and research in adult second language acquisition, with special attention to developments in theory and to methodological issues and considerations.

**Prerequisites:** LING 600, LING 790.

**LING 792 - Principles of Instructed Second Language Acquisition and Foreign Language Teaching (3 Credits)**

An analysis of instructed second language acquisition (SLA). This course explores the historical development and up-to-date findings in foreign/second language research and applies that knowledge to classroom teaching methods. Students will be expected to conduct empirical investigation.

**Prerequisites:** FORL 511 or LING 790.

**Cross-listed course:** FORL 730

**LING 795 - Principles and Strategies for Teaching ESOL (3 Credits)**

Survey of teaching ESOL, including theoretical principles and practical strategies for approaches, methods, techniques, and materials as they concern elementary, secondary, and postsecondary learners.

**LING 796 - Teaching Reading and Writing to ESOL Learners: Theory and Practice (3 Credits)**

This course surveys research on the mental processes and linguistic contexts involved in reading and writing in a second language. Pedagogical implications for elementary, secondary, and postsecondary learners are discussed.

**Cross-listed course:** EDRD 796

**LING 798 - Practicum in Teaching ESOL (3 Credits)**

Observation and supervised teaching of English to speakers of other languages in an individually designed classroom setting. Course may be taken up to 3 times.

**Prerequisites:** LING 600, LING 795.

**LING 799 - Thesis Preparation (1-9 Credits)****LING 805 - Topics in Linguistics (3 Credits)**

Topics selected by the instructor for specialized study. May be repeated as topics vary.

**LING 806 - Directed Reading and Research (1-3 Credits)****LING 820 - Seminar in Syntax (3 Credits)**

Advanced exploration in syntactic theory, involving either cross-theoretical examination of specific linguistic phenomena or in-depth study of a particular theoretical model.

**LING 830 - Seminar in Historical Linguistics (3 Credits)**

Special topics in historical and comparative linguistics, such as historical phonology or syntax, Indo-European linguistics, and comparative Germanic or Romance linguistics.

**LING 840 - Seminar in Language Variation (3 Credits)**

Current theories relevant to specialized consideration of the social functions of linguistic choices at any level of analysis; variation as a reflection of region and social group membership or interpersonal relationships.

**LING 890 - Seminar in Language Acquisition (3 Credits)**

Special topics in the acquisition of language such as first language acquisition of English or other languages, cross-linguistic effects on acquisition, or issues in acquisition theory.

**LING 891 - Seminar in English for Speakers of Other Languages (ESOL) (3 Credits)**

Special topics in teaching English to speakers of other languages (ESOL), such as materials design, program design and evaluation, or teaching a particular language skill.

**LING 899 - Dissertation Preparation (1-12 Credits)**

## Management (MGMT)

**MGMT 590 - Special Topics in Management (3 Credits)**

Current topics, issues and practices in various areas of Management. Course may be repeated up to four (4) times as content varies by title.

**MGMT 701 - Human Resources and the Global Firm (3 Credits)**

An analysis of human resources practices viewed from a comparative, cross-national perspective and the perspective of a multinational enterprise.

**MGMT 718 - Management of Human Resources (3 Credits)**

The processes inherent in effective management of the organization's human resources. Topics include: employee selection, training, and development; design of compensation and reward systems; applied motivation models; and current issues in the management of human resources.

**MGMT 719 - Management of Compensation (3 Credits)**

Examines the techniques, policies, processes, strategies, and practices used by companies, managers, and individuals to effectively and efficiently motivate behavior via rewards.

**Prerequisites:** MGMT 701.

**MGMT 720 - Staffing (3 Credits)**

Topics in staffing on a rotating basis among job analysis, recruitment, test validation, selection systems, and other subjects.

**Prerequisites:** MGMT 701.

**MGMT 721 - Employment Relations Law (3 Credits)**

The law of employment relations. Policy and practice in areas such as equal employment, wages and hours, employee health and safety, pensions, and labor relations.

**MGMT 722 - Labor Relations (3 Credits)**

An analysis of some of the major problems faced by managers in their dealings with organizations representing employees. Primary emphasis is on the negotiation of labor agreements and the handling of problems arising under them. The public policy aspect of these problems is also considered.

**MGMT 723 - Employee Responsibilities and Rights (3 Credits)**

Rights of employees in relation to their employers that arise from individual and collective agreements. Employee discipline and justice. Grievance procedures and their administration, including labor arbitration.

**MGMT 724 - American Labor Unions (3 Credits)**

The nature, structure, and development of the labor union in the United States. Topics covered include labor history, structure of the labor movement, union governance, the law of unions, and problems of the labor movement.

**MGMT 725 - Human Resource Metrics and Research (3 Credits)**

Applied data analysis and research methods in human resources. Emphasis on research design, analytic strategies, measurement of human resource variables and outcomes, and presentation of written and oral information.

**MGMT 726 - Human Resource and Business Strategy (3 Credits)**

Capstone course for master's students in human resources. Integration of course work through analysis of current management issues and the use of case analysis and business simulations.

**Prerequisites:** MGMT 701.

**MGMT 727 - Internship or Practicum in Human Resources (6 Credits)**

Field experience in human resources. Includes a report analyzing the experience.

**MGMT 728 - Teams and Teamwork Management (3 Credits)**

When to use teams; how to design and implement team structures and motivate and lead team members; team decision making, conflict resolution, and other team processes.

**MGMT 729 - Managing Cross-border Teams (3 Credits)**

How the presence of members from multiple national cultures and multiple national locations affect the functioning of teams within the multinational corporation.

**Prerequisites:** DMSB 714 or IBUS 700 or MGMT 770 or MGMT 799.

**Cross-listed course:** IBUS 717

**MGMT 730 - Consulting and Organizational Development in MNCs (3 Credits)**

Restructuring and transformation initiatives within multinational organizations as internal consultants and/or change agents.

**Prerequisites:** DMSB 711 or IBUS 700 or MGMT 701.

**Cross-listed course:** IBUS 718

**MGMT 731 - Negotiations (3 Credits)**

Negotiations analysis, thinking, and communication; alignment between negotiation objectives and strategies; negotiation skills.

**MGMT 732 - Learning with Leaders (3 Credits)**

Experiential learning with successful business leaders; diagnosis of specific contexts and issues of leadership within these contexts; integration and comparison of leadership across contexts.

**MGMT 733 - Strategic Management of Technology and Innovation (3 Credits)**

Understanding and managing innovation, both sustaining and disruptive; creating new capabilities in new entrepreneurial firms or large corporations.

**MGMT 735 - Mergers and Acquisitions (3 Credits)**

Mergers and acquisitions in international and domestic settings: effects of strategic, financial, legal, accounting, and human resource factors.

**MGMT 737 - Human Resources Experiential Project (3 Credits)**

Provides an applied Human Resources experiential project where students work under close faculty supervision to solve real-world business challenges using applied research and analytical skills.

**Prerequisites:** MGMT 725.

**MGMT 750 - Finance for Human Resource Professionals (3 Credits)**

Fundamentals of analysis and decision-making in financial management for human resource professionals.

**MGMT 770 - Competing Through People (3 Credits)**

Development of an understanding of behavioral concepts necessary for effective production management of organizations. Current literature, case studies, and other simulations to demonstrate applicability of concepts. Concepts studies include perception, motivation, leadership, and intergroup conflict.

**MGMT 771 - Organization Theory and Design (3 Credits)**

A study of the nature of organizations, their design, their structure, their processes, as well as problems inherent in organizations (e.g., coordination, conflict, communications, power usage, politics).

**MGMT 772 - Employee and Leadership Development (3 Credits)**

Examination of methods of employee development and leadership development with an emphasis given to program design, management, and evaluation.

**MGMT 773 - Business Policy (3 Credits)**

Policy formulation and decision-making in organizations. The interrelationships of functional areas within the organization, the application of management skills and processes to integrate these areas, and the impact of factors external to the organization are examined with a view toward the attainment of organizational goals.

**Prerequisites:** MKTG 751, FINA 760, MGMT 770, and MGSC 791.

**MGMT 774 - The Firm and Its Environment (3 Credits)**

The forces which influence and constrain decision and actions within the individual firm. Consideration of these forces as features of the existing legal, social, and ethical environments. Specific topics include the legal system and public policy, social organization, moral and ethical standards, public opinion, the social responsibility of the firm, and conception within the firm of its role in society, and the interaction of these forces with economic forces.

**Prerequisites:** ECON 720.

**MGMT 775 - Competitive Strategy Analysis (3 Credits)**

A study of the techniques used in industry analysis and in the strategic posturing of a firm within its competitive environment.

**Prerequisites:** MKTG 751 and FINA 760.

**MGMT 776 - Strategic Planning (3 Credits)**

An evaluation of the conceptual and analytical foundations associated with the management function of planning.

**MGMT 777 - Innovation and New Venture Analysis (3 Credits)**

Examines the principles, tools, and techniques necessary to conceptualize and initiate a new business entity.

**Prerequisites:** MKTG 751.

**Prerequisite or Corequisite:** FINA 760.

**MGMT 778 - Small Business Management (3 Credits)**

An examination of problems involved in the organization and management of a small business, including an analysis of legal forms, location, product market determination, production, and other operating conditions.

**MGMT 779 - Personnel and Employment Relations (3 Credits)**

Orientation to the field of personnel and employment relations. Also provides training in communications and computer skills needed in managing human resources.

**MGMT 780 - Entrepreneurial Finance and the Dynamics of Emerging Ventures (3 Credits)**

Exploration of the funding and financial management of emerging ventures, including sources and structure of capital, financial levers to drive performance and metrics to monitor performance, and the study of how to impact, capture, quantify and realize value.

**Cross-listed course:** FINA 780

**MGMT 782 - Managing Careers in Organizations (3 Credits)**

Chronological view of career development issues, from initial vocational and job choice decisions through retirement. Short-run and long-term consequences of individual and organizational career development strategies.

**MGMT 790 - Business Research and Reports (3 Credits)**

Research tools, techniques, and sources are utilized in the development of both analytical ability and facility in communication.

**MGMT 820 - Foundations of Management Theory (3 Credits)**

Emphasis on development of understanding the history of management theory and examination of current interpretations of these concepts.

**MGMT 821 - Doctoral Seminar in the Behavioral Sciences I (3 Credits)**

Study of major theoretical and methodological issues in organizational behavior with emphasis on developing conceptual models and implementing research designs.

**MGMT 822 - Doctoral Seminar in the Behavioral Sciences II (3 Credits)**

Exploration of current specialized topics in organizational behavior with emphasis on synthesizing research, developing conceptual models, and implementing research designs.

**MGMT 823 - Current Topics in the Organization Sciences (3 Credits)**

An advanced seminar focusing upon reading, synthesis, and critical evaluation of current research in business and management.

**Prerequisites:** MGMT 821 or MGMT 822.

**MGMT 824 - Doctoral Seminar in Human Resource Management I (3 Credits)**

Theories and research in human resource management.

**MGMT 825 - Doctoral Seminar in Human Resource Management II (3 Credits)**

Advanced theories and research in human resource management.

**MGMT 828 - Seminar in Entrepreneurship (3 Credits)**

Theories and research in entrepreneurship, emphasizing strategic management framework in integrating diverse treatments of the entrepreneur, new ventures, and corporate innovation.

**Prerequisites:** MGMT 878.

**MGMT 871 - Organization Theory (3 Credits)**

An evaluation of theories of organization, with particular emphasis on business applications. Approaches to a conceptual framework include decision theory, sociological and behavioral theories. Various models are evaluated in an attempt to build a framework for analysis of organizations.

**MGMT 872 - Seminar in Management Research Methodology (3 Credits)**

Research methods and techniques for translation of management theory and practical problems into testable propositions.

**Prerequisites:** MGSC 882.

**MGMT 878 - Seminar in Strategy Formulation (3 Credits)**

Investigates the theoretical and empirical evidence regarding strategies aimed at creating and sustaining competitive superiority in business firms and the strategy formation process.

**MGMT 879 - Seminar in Strategy Implementation (3 Credits)**

Continuation of MGMT 878, with emphasis on strategy implementation.

**Prerequisites:** MGMT 878.

**MGMT 882 - Advanced Statistics for Business I (3 Credits)**

The development and application of advanced statistical methods to problems in business. Topics include application of estimation and hypothesis testing in both univariate and multivariate cases.

**Cross-listed course:** MGSC 882

**MGMT 892 - Advanced Statistics for Business II (3 Credits)**

The structure and analysis of experimental and research designs with applications to business problems.

**Prerequisites:** MGMT 882 or equivalent.

## Management Science (MGSC)

**MGSC 520 - Forecasting and Time Series (3 Credits)**

Time series analysis and forecasting using the multiple regression and Box-Jenkins approaches.

**Prerequisites:** MGSC 292 or STAT 516.

**Cross-listed course:** STAT 520

**MGSC 525 - Statistical Quality Control (3 Credits)**

Statistical procedures for process control including CUSUM and Shewhart Control Charts, and lot acceptance sampling.

**Prerequisites:** MGSC 292 or STAT 509 or STAT 515.

**Cross-listed course:** STAT 525

**MGSC 590 - E-Commerce Concepts and Research Topics (3 Credits)**

Social, technological, commercial, marketing, and political implications of current and impending trends in E-Commerce.

**Prerequisites:** MGSC 390.

**MGSC 591 - Simulation of Business Systems (3 Credits)**

Theory and design of business simulation experiments, development and use of computer simulation models, and analysis of data generated by computer simulation experiments.

**Prerequisites:** MGSC 291.

**MGSC 592 - Analysis of Decisions Under Uncertainty (3 Credits)**

Theory and practice of making decisions in an environment of uncertainty; development of skill in the assessment of preferences and probability distributions.

**Prerequisites:** MGSC 291.

**MGSC 594 - Strategic Management of Information Systems (3 Credits)**

Strategic management and use of information systems in organizations.

**Cross-listed course:** CSCE 594

**MGSC 596 - Database Management for Business (3 Credits)**

Technology overview and principles of database design for business applications. Enterprise database administration and planning. Design exercises and projects using the latest database management systems software.

**MGSC 690 - Quantitative Foundations for Business and Economics I (3 Credits)**

Calculus and classical optimization methods applied to problems in business and economic analysis; matrices, derivatives, and integrals in the analysis of both univariate and multivariate business and economic models.

**MGSC 691 - Quantitative Foundations for Business and Economics II (3 Credits)**

Statistics and probability theory applied to problems of business and economic analysis.

**Prerequisites:** MGSC 690 or ECON 690.

**MGSC 692 - Quantitative Methods I (3 Credits)**

Probability and statistics necessary for graduate study in economics and business administration; estimation, hypothesis testing, regression, analysis of variance, and nonparametric methods.

**MGSC 694 - Quantitative Methods II (3 Credits)**

Decision models useful in business and economics; linear programming, sensitivity analysis and duality, network models, integer programming, dynamic programming, inventory and queuing, and simulation.

**Prerequisites:** MGSC 692 or equivalent.

**MGSC 703 - Computers in Business Administration and Economics (1-3 Credits)**

Introduction to data processing concepts suitable for research interests in business and economics. Topics include research databases, statistical packages, and communication networks.

**MGSC 711 - Quantitative Methods in Business (3 Credits)**

Quantitative procedures used to make informed business decisions. The course focuses on the application of descriptive statistics, probability, interval estimates, hypothesis testing, and regression to management problems. Restricted to business students.

**MGSC 771 - Global Sourcing: Strategies and Applications (3 Credits)**

This course covers skills necessary to pursue sourcing and related careers in manufacturing, services, retailing, and government agencies, including discussion of cutting-edge negotiation and sourcing strategies pursued by exemplar firms.

**Prerequisites:** DMSB 718 or MGSC 791.

**MGSC 772 - Project Management (3 Credits)**

Management of projects including justification, planning, scheduling, monitoring, controlling, and auditing. Makes extensive use of project management information systems.

**MGSC 776 - Supply Chain Modeling (3 Credits)**

Study of the issues, principles, tools and decision processes involved in designing and effectively managing a supply chain. The course entails analyzing and developing models on various topics such as inventory management, transportation, network design and planning, and supply chain coordination.

**Prerequisites:** DMSB 718 or MGSC 791.

**MGSC 777 - Advanced Quantitative Methods in Business (3 Credits)**

Practical applications of statistical, optimization, heuristic, simulation, and other quantitative techniques for analyzing problems of contemporary business interest in the areas of manufacturing, services, and supply chain management.

**Prerequisites:** DMSB 718 or MGSC 791.

**MGSC 778 - Revenue Management (3 Credits)**

Concepts of forecasting demand, segmenting customers and allocating capacity or customizing products to distinct customer segments to maximize profits.

**MGSC 779 - Innovation and Design (3 Credits)**

Creation and launch of viable businesses using innovation tournaments. Development of problem solving and design skills. Application to real innovation and entrepreneurial hurdles.

**MGSC 789 - Business Process Analysis, Design, and Implementation (3 Credits)**

Study of the concepts, tools and issues associated with analyzing and improving modern business processes including quality management, process control, systems and technologies for process support, and case studies.

**MGSC 790 - Data Resource Management (3 Credits)**

Overview of data resource management, including database technology and design, information architecture planning, and database administration. A design project is required.

**MGSC 791 - Operations Management (3 Credits)**

Survey of production or operations functions of organizations. Development of concepts and decision processes relevant to major problem areas. Emphasizes relevance of operations management in both manufacturing and service organizations.

**Prerequisites:** MGSC 694, ACCT 729, and ECON 720.

**MGSC 793 - Simulation Methods in Business Systems (3 Credits)**

Advanced theory and design of business simulation programs and validation and statistical analysis of model output.

**Prerequisites:** MGSC 692, MGSC 694.

**MGSC 794 - Programming Methods (3 Credits)**

Mathematical programming techniques which are useful in business and economics. Topics include: solution techniques and applications of linear programming, duality theory, parametric programming, the decomposition problem, integer programming, dynamic programming, Lagrange multipliers, Kuhn-Tucker theory, and an introduction to control theory.

**Prerequisites:** MGSC 694.

**MGSC 795 - Econometrics and Regression I (3 Credits)**

A treatment of single equation estimating techniques for the simple linear model, various nonlinear models, and the general linear model.

**Prerequisites:** MGSC 882.

**MGSC 796 - Information Systems (3 Credits)**

The study of the integration of functional area and company-wide information components considering both internal and external information flows.

**MGSC 797 - Sampling Techniques (3 Credits)**

Statistical designs and techniques for survey investigations. Mathematical development of sampling systems; sampling units; sample size; estimation; costs; non-sampling problems. Methods of obtaining and reporting information.

**Prerequisites:** MGSC 692 or equivalent.

**MGSC 798 - Strategic Information Management (3 Credits)**

Impacts of information and the information processing industry on the management of organizations; methods for managing information resources in support of competitive strategies.

**Prerequisites:** MGSC 796.

**MGSC 873 - Service Operations Management (3 Credits)**

Analysis of service operations, integrated about strategy, design, and delivery issues. Comparison of manufacturing and service operations, emphasizing consumer participation in the service process.

**Prerequisites:** MGSC 791.

**MGSC 874 - Operations Strategy and Productive Systems Design (3 Credits)**

Development and implementation of productive operations strategy and its relation to the overall organizational strategy; particular attention is given to the interface between product and process technology.

**Prerequisites:** MGSC 791.

**MGSC 875 - Supply Chain Coordination and Control (3 Credits)**

Design and management of systems that coordinate information and material flows within and between firms in a supply chain. Addresses planning basics, system alternatives, and advanced value stream synchronization.

**Prerequisites:** DMSB 718 or MGSC 791.

**MGSC 882 - Advanced Statistics for Business I (3 Credits)**

The development and application of advanced statistical methods to problems in business and economics. Topics include application of estimation and hypothesis testing in both univariate and multivariate cases.

**Cross-listed course:** MGMT 882

**MGSC 889 - Design of Advanced Business Information Structures (3 Credits)**

A study of data structures and file management with specific attention to applied business problems. Special emphasis is placed on the structure and management of information for management decision-making systems.

**Prerequisites:** CSCE 205 and CSCE 500.

**MGSC 890 - Telecommunications (3 Credits)**

Technological concepts and techniques applied in video, data, and voice communications. Topics include local area networks, wide area networks, standards, management, and cost issues involved in telecommunications.

**Prerequisites:** MGSC 796.

**MGSC 892 - Advanced Statistics for Business II (3 Credits)**

The structure and analysis of experimental and research designs with applications to business and economic problems.

**Prerequisites:** MGSC 882/MGMT 882 or equivalent.

**MGSC 894 - Advanced Topics in Management Science (3 Credits)**

Topics will be selected from: nonlinear programming, stochastic programming, integer programming, spectral analysis, decision theory, Markov processes, Box-Jenkins methods, management information systems.

**Prerequisites:** MGSC 694.

**MGSC 895 - Econometrics and Regression II (3 Credits)**

Topics in generalized least squares, autocorrelation, distributed lag models, principle components, identification, and simultaneous estimating techniques.

**Prerequisites:** MGSC 795.

**MGSC 896 - Intelligent Information Systems Design for Business Decision Making (3 Credits)**

Selection, design, and application of a wide range of decision support systems and knowledge-based information technologies for supporting effective managerial decision making.

**MGSC 897 - Global Supply Chain Operations Management: Graduate Capstone Consulting Project (4 Credits)**

This course entails a live project under faculty supervision in which student teams apply GSCOM concepts and techniques to solve practical significant problems and opportunities in real-world service and manufacturing firms.

**MGSC 898 - Management of Technology and Innovation (3 Credits)**

The role of product and process innovation in competitiveness, intellectual property rights, organizing the technical effort, and techniques to enhance and pace technology development.

**Prerequisites:** MKTG 751 and MGSC 791.

## Marine Science (MSCI)

**MSCI 501 - Principles of Geomorphology (3 Credits)**

The process of earth denudation with emphasis on chemistry of weathering, stream and erosion hydraulics, quantitative analysis of land form evolution.

**Prerequisites:** GEOL 101 and GEOL 102.

**Cross-listed course:** GEOL 501

**MSCI 502 - Principles of Coastal Geomorphology (4 Credits)**

Geological and physical controls on the morphology, development, and stability of coastlines. Analysis of waves and erosional processes, and coastal zone morphodynamics. Several required field trips.

**Prerequisite or Corequisite:** MATH 122 or MATH 141.

**Cross-listed course:** GEOL 502

**MSCI 503 - Environmental Microbiology (3 Credits)**

An overview of the microbial world including a survey of the distribution, functioning, and diversity of microorganisms in natural systems.

Discusses the crucial roles that microorganisms play in ecosystem function, biogeochemical cycles, and environmental quality.

**Prerequisites:** MSCI 102 or BIOL 102, CHEM 112.

**Cross-listed course:** BIOL 502

**MSCI 505 - Senior Seminar (1 Credit)**

CL: 2020.

**MSCI 509 - MATLAB-Based Data Analysis in Ocean Sciences (3 Credits)**

MATLAB-based course in processing, analysis, and visualization of large oceanographic data sets. Includes scalar and vector time series measured at fixed locations as well as shipboard surveys of oceanographic characteristics varying both in 3-D and in time. Methods and techniques are relevant to other geoscience disciplines.

**Prerequisites:** MATH 141.

**MSCI 510 - Invertebrate Zoology (4 Credits)**

Phylogenetic and comparative aspects of anatomy, physiology, reproduction, and embryology of the invertebrates. Three lecture and one three-hour laboratory period per week.

**Prerequisites:** BIOL 301 or MSCI 311.

**Cross-listed course:** BIOL 510

**Graduation with Leadership Distinction:** GLD: Research

**MSCI 511 - Advanced Paleontology (3 Credits)**

Systematic, ecologic, biogeographic, and evolutionary aspects of paleontology. Lectures, practical exercises, occasional field trips.

**Prerequisites:** GEOL 311.

**Cross-listed course:** GEOL 511

**MSCI 515 - Marine Micropaleontology (4 Credits)**

Marine microfossils; distribution, ecology, paleoecology, and biostratigraphy; use of microfossils in marine sediments to study oceanographic history. Three lectures and two laboratory hours per week.

**Cross-listed course:** GEOL 515

**MSCI 521 - Introduction to Geochemistry (3 Credits)**

Investigation of low temperature chemical reactions controlling the geochemistry of the earth's surface. Emphasis on CO<sub>2</sub>, carbonates, oxidation reduction, thermodynamics, isotopes, biogeochemistry.

**Cross-listed course:** GEOL 521

**MSCI 524 - Environmental Radioisotope Geochemistry (3 Credits)**

Introduction to radioactivity and the use of radionuclides to study environmental processes, including age-dating and biogeochemical cycling in aquatic systems. Two lectures per week.

**Prerequisites:** CHEM 111, CHEM 112, MATH 141.

**MSCI 525 - Marine Plants (4 Credits)**

Diversity, distribution, physiology, ecology, evolution, and economic importance of marine algal, seagrass, and mangrove communities. Three lecture and three laboratory hours per week. Scheduled field trips are required.

**Prerequisites:** BIOL 301 or MSCI 311.

**Cross-listed course:** BIOL 525

**MSCI 535 - Fishery Management (3 Credits)**

Management and conservation of aquatic and marine resources, with emphasis on fisheries. Data procurement and analysis; commercial and recreational fisheries; sociological, political, legal, and environmental factors that affect fishery management; and fish biodiversity.

**Prerequisites:** BIOL 301.

**Cross-listed course:** BIOL 535

**MSCI 536 - Ichthyology (4 Credits)**

Phylogeny, morphology, behavior, and ecology of fishes. Three lecture and 3 laboratory hours plus three field trips to be arranged.

**Prerequisites:** BIOL 301 or MSCI 311.

**Cross-listed course:** BIOL 536

**Graduation with Leadership Distinction:** GLD: Research

**MSCI 537 - Aquaculture (3 Credits)**

Introduction to the practical and scientific aspects of the commercial culture of freshwater and marine organisms. Three lecture hours per week. One all-day field trip required.

**Prerequisites:** BIOL 301 or MSCI 311.

**MSCI 538 - Behavior of Marine Organisms (4 Credits)**

The identification of behavioral adaptations of estuarine and marine organisms: their ecology, physiology, development, and evolutionary history; field observations.

**Prerequisites:** BIOL 101 and BIOL 102 or MSCI 311.

**Cross-listed course:** BIOL 538

**Graduation with Leadership Distinction:** GLD: Research

**MSCI 545 - Geological Oceanography (3 Credits)**

A comprehensive study of the origin and development of the major structural features of the ocean basins and the continental margins. Discussion of the techniques used in obtaining geologic data and the interpretation of sedimentary processes, vulcanism, and the stratigraphy of the ocean basins.

**Cross-listed course:** GEOL 545

**MSCI 550 - Sedimentary Simulations and Sequence Stratigraphy (4 Credits)**

Problems of sequence stratigraphy resolved with graphic computer simulations. Sedimentary fill of basins by carbonates and/or clastics tracked as a function of rate of sediment accumulation, tectonic behavior and sea level. Includes laboratory.

**Prerequisites:** GEOL 301.

**Cross-listed course:** GEOL 550

**MSCI 552 - Population Genetics (3 Credits)**

An introduction to the principles of population genetics, with emphasis on the origin, maintenance, and significance of genetic variation in natural populations.

**Prerequisites:** BIOL 301, MSCI 311, and BIOL 303.

**Cross-listed course:** BIOL 552

**Graduation with Leadership Distinction:** GLD: Research

**MSCI 553 - Marine Sediments (3 Credits)**

Marine sedimentary environments; physical/biological factors which control the formation and distribution of modern marine sediments.

**Prerequisites:** GEOL 516.

**Cross-listed course:** GEOL 553

**MSCI 555 - Conservation and Health in Marine Systems (3 Credits)**

Introduces the field of conservation and explores the intersection between conservation and environmental health with a particular focus on coastal and marine case studies.

**MSCI 557 - Coastal Processes (3 Credits)**

Physical and geological processes controlling the formation and evolution of beach, barrier, and nearshore environments, including discussion of coastal management issues.

**Cross-listed course:** GEOL 557

**MSCI 566 - Ecosystem Analysis (3 Credits)**

The formulation and simulation of compartment models of marine and terrestrial ecosystems with complex nutrient cycling, food chains, and energy flow. Analog and digital simulation techniques. Ecosystem stability and sensitivity. Organization, structure, and diversity of an ecosystem.



**MSCI 568 - Introduction to Micrometeorology (3 Credits)**

Small-scale processes in the atmospheric boundary layers, including energy budget, radiation, soil heat transfer, humidity, viscous flows, turbulence, momentum and heat exchanges, evaporation, and marine atmospheric boundary layer.

**Prerequisites:** PHYS 201 and MATH 141.

**Cross-listed course:** GEOL 568

**MSCI 574 - Marine Conservation Biology (3 Credits)**

Exploration of how human activities affect marine natural populations, species, communities and ecosystems, including threats to biodiversity; approaches to marine conservation; and ecological and evolutionary responses to anthropogenic disturbance.

**Prerequisites:** BIOL 301.

**Cross-listed course:** BIOL 574

**MSCI 575 - Marine Ecology (3 Credits)**

Structure, dynamics, and interactions between populations and communities in marine ecosystems. Attendance at designated departmental seminars is required. Three lecture hours per week.

**Prerequisites:** CHEM 111 and BIOL 301 or MSCI 311.

**Cross-listed course:** BIOL 575

**MSCI 575L - Marine Ecology Laboratory (1 Credit)**

Laboratory and field exercises in coastal environments. Three hours per week plus field trips.

**Prerequisite or Corequisite:** MSCI 575.

**Cross-listed course:** BIOL 575L

**MSCI 576 - Marine Fisheries Ecology (3 Credits)**

Interdisciplinary examination of the distribution, reproduction, survival, and historical variation of the principal commercial marine fisheries.

**Prerequisites:** BIOL 301.

**Cross-listed course:** BIOL 576

**MSCI 577 - Ecology of Coral Reefs (4 Credits)**

Structure, productivity, and biodiversity of coral reefs, emphasizing their sensitivity, stability, and sustainability. Taught as an extended field experience with daily lectures and guided research activities.

**Prerequisites:** BIOL 301 or MSCI 311.

**Cross-listed course:** BIOL 577

**MSCI 578 - Physiological and Pollution Ecology of Marine Organisms (3 Credits)**

Functional adaptation of marine plants and animals to ecological stresses including pollution. Three lecture hours per week.

**Prerequisites:** MSCI 311 or equivalent.

**MSCI 579 - Air-Sea Interaction (3 Credits)**

The physical mechanism responsible for interaction between the ocean and the atmosphere and the influence of air-sea interaction on atmospheric and oceanic dynamics and thermodynamics on a wide variety of spatial/temporal scales.

**Cross-listed course:** GEOL 579

**MSCI 580 - Satellite Oceanography (3 Credits)**

This course provides knowledge of various techniques used in satellite remote sensing of the oceans. Key skills will be developed in satellite data processing, image analysis, and hands-on research.

**Cross-listed course:** GEOL 580

**MSCI 581 - Estuarine Oceanography (3 Credits)**

Estuarine kinematics and dynamics; classification of estuaries; estuarine circulation and mixing. Scheduled field trips are required.

**Prerequisites:** MSCI 314.

**Cross-listed course:** GEOL 581

**MSCI 582 - Marine Hydrodynamics (3 Credits)**

Basic principles of fluid statics and dynamics. Conservation of mass, momentum, and energy; viscosity, vorticity, and boundary layers with examples from the marine environment. Applications to and analysis of ocean currents and waves.

**Prerequisites:** differential equations, PHYS 201 or PHYS 211.

**Cross-listed course:** GEOL 582

**MSCI 583 - Geology and Geochemistry of Salt Marshes (3 Credits)**

Geological and geochemical processes in salt marshes. Methods of geological research in marshes including instrumental techniques, sampling design, and data analysis. Two lectures per week plus four weekends of project oriented fieldwork and/or equivalent lab work. Scheduled field trips are required.

**Cross-listed course:** GEOL 583

**MSCI 585 - Coastal Tropical Oceanography (4 Credits)**

Descriptive oceanography of mangrove and coral reef coasts with emphasis on physical processes. Taught as an extended field experience with daily lectures and guided research activities.

**Prerequisites:** MSCI 312.

**MSCI 590 - Beach-Dune Interactions (3 Credits)**

Influence of wind on coastal systems, with emphasis on nearshore currents, sediment transport and bedforms, aeolian transport, and dunes. Minimum Junior standing required.

**Cross-listed course:** GEOG 590

**MSCI 599 - Topics in Marine Science (1-3 Credits)**

Current developments in marine science selected to meet faculty and student interests. Course content varies and will be announced by title in schedule of courses.

**MSCI 624 - Aquatic Chemistry (3 Credits)**

Study of the chemical reactions and processes affecting the distribution of chemical species in natural systems. Three lecture hours per week.

**Prerequisite or Corequisite:** CHEM 321, MATH 142.

**Cross-listed course:** CHEM 624

**MSCI 627 - Marine Phytoplankton (3 Credits)**

Examines the physiology and ecology of phytoplankton, including environmental controls on community composition, primary productivity, and detection and characterization of water quality (eutrophication) and harmful algal blooms.

**Prerequisites:** MSCI 102 or MSCI 450 or BIOL 450.

**Cross-listed course:** BIOL 627

**MSCI 711 - Paleoclimatology (3 Credits)**

An overview of Earth's climate history during Cenozoic. Emphasis will be placed on Pleistocene glacial-interglacial climate variability and understanding the proxies used to reconstruct past climate changes.

**Cross-listed course:** GEOL 711

**MSCI 716 - Eustasy and Global Variations in Sequence Stratigraphy (3 Credits)**

Relationship of sequence stratigraphy to sea level variations, tectonics and sedimentation. Construction and analyses of paleogeographic maps, regional cross-sections, and chronostratigraphic charts.

**Cross-listed course:** GEOL 716

**MSCI 717 - Organic Geochemistry (3 Credits)**

Sources, transport, and fate of organic matter in natural environments including soils, riverine, estuarine, coastal and open ocean sediments and waters.

**Prerequisites:** GEOL 521/MSCI 521.

**Cross-listed course:** GEOL 717

**MSCI 750 - Advanced Biological Oceanograph (3 Credits)**

Three lecture hours per week.

**Prerequisites:** BIOL 450/MSCI 450.

**MSCI 752 - Marine Biogeochemistry (3 Credits)**

Biological, geological, and physical processes that influence the cycling of major bioactive elements (C, O, N, P, S) in marine waters and sediments.

**Cross-listed course:** BIOL 752

**MSCI 754 - Oceanographic Techniques (1 Credit)****MSCI 755 - Marine Conservation and Environmental Health (3 Credits)**

Explores the intersection between conservation and environmental health with a particular focus on coastal and marine case studies.

**MSCI 758 - Special Topics in Marine Sciences (1-3 Credits)**

CL: 2020.

**MSCI 767 - Ecological Modeling and Environmental Planning (4 Credits)**

Concepts in systems of models and computer simulations in examining environmental interactions, predicting environmental impact, and facilitating the process of environmental planning. Lab practice in analog and digital simulation and data interpretation.

**Prerequisites:** MATH 121 or equivalent, ecology, ENHS 660.

**Cross-listed course:** BIOL 768, ENHS 767

**MSCI 769 - Reproductive Ecology (3 Credits)**

Theoretical aspects and examples of the variety of reproductive and life history patterns found in animals and plants as adaptations to various environmental constraints. Three lecture hours per week.

**Prerequisites:** BIOL 570.

**Cross-listed course:** BIOL 769

**MSCI 777 - Current Topics in Marine Ecology for Teachers (3 Credits)**

Primarily for teachers. Marine science materials with emphasis on coastal environments. Field exercises.

**MSCI 778 - Current Topics in Marine Ecology for Teachers (3 Credits)**

Primarily for teachers. Marine science materials with emphasis on coastal environments. Field exercises.

**MSCI 781 - Physical Oceanography (3 Credits)**

Geographic and hydrodynamic aspects of oceanography, with emphasis on estuaries. Physical properties of sea water and theories and methods involved in ocean currents, air-sea interaction, waves, and tides.

**Cross-listed course:** GEOL 781

**MSCI 782 - Chemical Oceanography (3 Credits)**

Chemical characteristics of sea water, distribution of properties, and chemical processes in the oceans, with emphasis on estuaries.

**Cross-listed course:** GEOL 782

**MSCI 783 - Oceanographic Time Series Analysis (3 Credits)**

Techniques in the analysis of oceanographic data sequences, including filtering techniques, fast Fourier transformers, and empirical orthogonal functions.

**Cross-listed course:** GEOL 783

**MSCI 784 - Geophysical Fluid Dynamics (3 Credits)**

Equations governing the large-scale dynamics of the atmosphere and ocean, rotational influence, shallow water equations, vorticity, quasi-geostrophic dynamics, Rossby waves, energy and enstrophy, and geostrophic turbulence.

**Prerequisites:** MATH 241 or ECIV 360 or GEOL 582/MSCI 582 or GEOL 781/MSCI 781.

**Cross-listed course:** GEOL 784

**MSCI 785 - Atmospheric Dynamics (3 Credits)**

Elementary applications of the basic equations, scale analysis, planetary boundary layer, atmospheric oscillations, synoptic and mesoscale systems, hydrodynamic instability, cyclogenesis, frontogenesis, energy cycle, momentum budget, and tropical motion systems.

**Cross-listed course:** GEOL 785

**MSCI 790 - Directed Individual Studies in Marine Sciences (1-6 Credits)**

Directed research topics to be individually assigned and supervised by graduate faculty.

**MSCI 795 - Issues in Coastal Environmental Health (3 Credits)**

Problems associated with coastal population growth and development. Emphasis is on the working group approach to ameliorating impacts on ecosystem and human health.

**MSCI 798 - Research in Marine Science (1-9 Credits)**

In depth research methods and techniques in preparation of thesis or dissertation.

**MSCI 799 - Thesis Preparation (1-9 Credits)****MSCI 800 - Marine Science Seminar (0 Credits)**

Advanced topics in Marine Science research presented in Seminar format. Class meets weekly, every semester, during the Marine Science Program seminar.

**MSCI 899 - Dissertation Preparation (1-12 Credits)**

## Marketing (MKTG)

**MKTG 701 - Marketing Management (3 Credits)**

Marketing function with emphasis on the procedures and techniques for analyzing, planning, and implementing marketing strategies and tactics related to product, pricing, communication, and distribution decisions.

**MKTG 702 - Marketing Research (3 Credits)**

Research methodology as applied to marketing problems; includes research problem definition, sample design, data collection procedures, valid and reliable measurement, data analysis techniques, and sales forecasting fundamentals.

**Prerequisites:** MKTG 701 or DMSB 716.

**MKTG 703 - Marketing Planning (3 Credits)**

Tools and techniques for creating marketing plans.

**Prerequisites:** MKTG 701 or DMSB 716.

**MKTG 704 - Consumer Behavior (3 Credits)**

Concepts, theories, and techniques applicable to obtaining a sophisticated understanding of consumer motives, attitudes, decision-making processes, and satisfaction determinants.

**Prerequisites:** MKTG 701 or DMSB 716.

**MKTG 705 - Marketing Communications (3 Credits)**

Advertising, sales promotions, marketing-oriented public relations, event and sponsorship marketing, point-of-purchase communications, and other aspects of integrated marketing communications.

**Prerequisites:** MKTG 701 or DMSB 716.

**MKTG 706 - Sales and Sales Management (3 Credits)**

The role and activities of sales in marketing, including concepts, practices, and procedures of sales force management.

**Prerequisites:** MKTG 701 or DMSB 716.

**MKTG 707 - Product and Branding Policies (3 Credits)**

Product line and portfolio planning, stage-gate approach to new product development, product launch and product life cycle management, and branding strategies and procedures.

**Prerequisites:** MKTG 701 or DMSB 716.

**MKTG 708 - Customer Relationship Management and Data Mining (3 Credits)**

Techniques, procedures, and software applications for database marketing, managing customer relations, and mining large databases.

**Prerequisites:** MKTG 701 or DMSB 716.

**MKTG 709 - Internet Marketing (3 Credits)**

The Internet as both a marketing channel and communication medium, including E-commerce from a marketing perspective.

**Prerequisites:** MKTG 701 or DMSB 716.

**MKTG 710 - Strategic Marketing (3 Credits)**

An integrative treatment of the role of marketing in strategic problem solving.

**Prerequisites:** MKTG 701 or DMSB 716.

**MKTG 712 - Topics in Marketing Thought and Practice (3 Credits)**

Readings and research on selected topics in marketing. Course content varies and will be announced in the schedule of classes by title.

**Prerequisites:** MKTG 701 or DMSB 716.

**MKTG 713 - Managing Customer Satisfaction (3 Credits)**

This course explores the importance of customer satisfaction in today's marketplace and the challenges of designing and implementing an actual customer satisfaction measurement process.

**Prerequisites:** MKTG 710 or DMSB 716.

**MKTG 715 - Pricing Strategy and Analysis (3 Credits)**

Economics and behavioral foundations of pricing strategy formulation and implementation.

**Prerequisites:** MKTG 701 or DMSB 701 or equivalent.

**MKTG 716 - Listening to the Voice of the Market (3 Credits)**

Building competencies that help managers acquire knowledge from clients and apply it in ways that enhance openness in building strategic responses.

**Prerequisites:** DMSB 716 or MKTG 701.

**MKTG 717 - Fundamentals of Marketing Analytics (3 Credits)**

The critical thinking, statistical tools, and marketing application of business analytics.

**Prerequisites:** DMSB 716 or MKTG 701 and DMSB 712 or MGSC 711.

**MKTG 718 - Social and Digital Media Strategies for Businesses (3 Credits)**

Develop a social and digital media plan/solution to present to a client. Business enterprises and even non-business organizations are demanding new marketing hires and their marketing agencies have an acute understanding of how to develop and utilize online and social media as part of their integrated marketing plans. Both business-to-consumer and business-to-business enterprises are migrating to social media as a primary form of communication with customers and partners.

**Prerequisites:** DMSB 716 and MKTG 701.

**MKTG 719 - Business to Business Marketing (3 Credits)**

Identifying, developing, communicating and commercializing a value proposition between businesses in the form of a product or service.

**Prerequisites:** DMSB 716 or MKTG 701.

**MKTG 720 - Sales: Process, People and Performance (3 Credits)**

Examines and explores the Sales function within the modern organization. In addition to addressing the practical and classic sales issues of alignment, structure, performance and development, the course will also review the technologies and trends that are changing the commercial landscape and causing the fast evolution of the sales function.

**Prerequisites:** DMSB 716 or MKTG 701.

**MKTG 750 - Marketing Consulting Project (3 Credits)**

Develop successful marketing strategies using data, research, and analysis to create impactful strategies for real business clients. Businesses and recruiters are increasingly demanding experience handling practical problems faced by a marketing manager from our MBA students. In this elective course, the students get that experience.

**Prerequisites:** MKTG 701.

**MKTG 850 - Research Methods and Philosophies in Marketing (3 Credits)**

Doctoral seminar covering research methods and philosophies that underpin knowledge generation in marketing.

**MKTG 851 - Concepts and Theories in Consumer Research (3 Credits)**

Doctoral seminar exploring concepts, theories, and research methods relevant to understanding consumer behavior.

**MKTG 852 - Current Topics in Consumer Research (3 Credits)**

Doctoral seminar involving intensive study and criticism of the current consumer research literature.

**Prerequisites:** MKTG 851.

**MKTG 853 - Analytic Techniques for Marketing Decision Making (3 Credits)**

Doctoral seminar investigating contemporary analytic techniques for testing marketing theories.

**MKTG 854 - Latent Variable Estimation Techniques (3 Credits)**

Doctoral seminar examining covariance structure methods for developing measures of unobservable constructs and testing structural models.

**MKTG 855 - Conceptualization in Marketing (3 Credits)**

A directed project for marketing Ph.D. students requiring literature synthesis of a selected topical area and formulation of original concepts and theoretical propositions.

**MKTG 856 - Empirical Testing of Theoretical Propositions in Marketing (3 Credits)**

A directed project for marketing Ph.D. students requiring an empirical investigation and testing of theoretical propositions.

**MKTG 857 - Marketing Models (3 Credits)**

Doctoral seminar covering advances in marketing science models, including brand choice, product development, media choice, and other models.

**Prerequisites:** MGSC 882.

**MKTG 858 - Seminar in Marketing Strategy I (3 Credits)**

Doctoral seminar investigating emerging paradigms and theory regarding the role of marketing within the firm and the effects of marketing mix variables on consumer behavior and firm performance.

**MKTG 859 - Seminar in Marketing Strategy II (3 Credits)**

Theoretical foundations of marketing strategy.

## Mathematics (MATH)

**MATH 511 - Probability (3 Credits)**

Probability and independence; discrete and continuous random variables; joint, marginal, and conditional densities, moment generating functions; laws of large numbers; binomial, Poisson, gamma, univariate, and bivariate normal distributions.

**Prerequisites:** C or better in MATH 241.

**Corequisite:** MATH 241.

**Cross-listed course:** STAT 511

**MATH 514 - Financial Mathematics I (3 Credits)**

Probability spaces. Random variables. Mean and variance. Geometric Brownian Motion and stock price dynamics. Interest rates and present value analysis. Pricing via arbitrage arguments. Options pricing and the Black-Scholes formula.

**Prerequisites:** C or better in MATH 241.

**Cross-listed course:** STAT 522

**MATH 515 - Financial Mathematics II (3 Credits)**

Convex sets. Separating Hyperplane Theorem. Fundamental Theorem of Asset Pricing. Risk and expected return. Minimum variance portfolios. Capital Asset Pricing Model. Martingales and options pricing. Optimization models and dynamic programming.

**Prerequisites:** C or better in MATH 514 or STAT 522.

**Cross-listed course:** STAT 523

**MATH 520 - Ordinary Differential Equations (3 Credits)**

Differential equations of the first order, linear systems of ordinary differential equations, elementary qualitative properties of nonlinear systems.

**Prerequisites:** C or better in MATH 344 or MATH 544.

**MATH 521 - Boundary Value Problems and Partial Differential Equations (3 Credits)**

Laplace transforms, two-point boundary value problems and Green's functions, boundary value problems in partial differential equations, eigenfunction expansions and separation of variables, transform methods for solving PDE's, Green's functions for PDE's, and the method of characteristics.

**Prerequisites:** C or better in MATH 520 or in both MATH 241 and MATH 242.

**MATH 522 - Wavelets (3 Credits)**

Basic principles and methods of Fourier transforms, wavelets, and multiresolution analysis; applications to differential equations, data compression, and signal and image processing; development of numerical algorithms. Computer implementation.

**Prerequisites:** C or better in MATH 344 or MATH 544.

**MATH 523 - Mathematical Modeling of Population Biology (3 Credits)**

Applications of differential and difference equations and linear algebra modeling the dynamics of populations, with emphasis on stability and oscillation. Critical analysis of current publications with computer simulation of models.

**Prerequisites:** C or better in MATH 142, BIOL 301, or MSCI 311 recommended.

**MATH 524 - Nonlinear Optimization (3 Credits)**

Descent methods, conjugate direction methods, and Quasi-Newton algorithms for unconstrained optimization; globally convergent hybrid algorithm; primal, penalty, and barrier methods for constrained optimization. Computer implementation of algorithms.

**Prerequisites:** C or better in MATH 241 and one of MATH 344 or MATH 544.

**MATH 525 - Mathematical Game Theory (3 Credits)**

Two-person zero-sum games, minimax theorem, utility theory, n-person games, market games, stability.

**Prerequisites:** C or better in MATH 544 or in both MATH 300 and MATH 344.

**MATH 526 - Numerical Linear Algebra (4 Credits)**

Matrix algebra, Gauss elimination, iterative methods; overdetermined systems and least squares; eigenvalues, eigenvectors; numerical software. Computer implementation. Credit may not be received for both MATH 526 and MATH 544. Three lectures and one laboratory hour per week.

**Prerequisites:** C or better in MATH 142.

**MATH 527 - Numerical Analysis (3 Credits)**

Interpolation and approximation of functions; solution of algebraic equations; numerical differentiation and integration; numerical solutions of ordinary differential equations and boundary value problems; computer implementation of algorithms.

**Prerequisites:** C or better in MATH 520 or in both MATH 242 and MATH 344.

**Cross-listed course:** CSCE 561

**MATH 528 - Mathematical Foundation of Data Science and Machine Learning (3 Credits)**

Unconstrained and constrained optimization, gradient descent methods for numerical optimization, supervised and unsupervised learning, various reduced order methods, sampling and inference, Monte Carlo methods, deep neural networks.

**Prerequisites:** C or better in MATH 344 or MATH 544.

**MATH 531 - Foundations of Geometry (3 Credits)**

The study of geometry as a logical system based upon postulates and undefined terms. The fundamental concepts and relations of Euclidean geometry developed rigorously on the basis of a set of postulates. Some topics from non-Euclidean geometry.

**Prerequisites:** C or better in MATH 300.

**MATH 532 - Modern Geometry (3 Credits)**

Projective geometry, theorem of Desargues, conics, transformation theory, affine geometry, Euclidean geometry, non-Euclidean geometries, and topology.

**Prerequisites:** C or better in MATH 300.

**MATH 533 - Elementary Geometric Topology (3 Credits)**

Topology of the line, plane, and space, Jordan curve theorem, Brouwer fixed point theorem, Euler characteristic of polyhedra, orientable and non-orientable surfaces, classification of surfaces, network topology.

**Prerequisites:** C or better in MATH 241 and MATH 300.

**MATH 534 - Elements of General Topology (3 Credits)**

Elementary properties of sets, functions, spaces, maps, separation axioms, compactness, completeness, convergence, connectedness, path connectedness, embedding and extension theorems, metric spaces, and compactification.

**Prerequisites:** C or better in MATH 241 and MATH 300.

**MATH 540 - Modern Applied Algebra (3 Credits)**

Finite structures useful in applied areas. Binary relations, Boolean algebras, applications to optimization, and realization of finite state machines.

**Prerequisites:** MATH 300.

**MATH 541 - Algebraic Coding Theory (3 Credits)**

Error-correcting codes, polynomial rings, cyclic codes, finite fields, BCH codes.

**Prerequisites:** C or better in MATH 544 or in both MATH 300 and MATH 344.

**MATH 544 - Linear Algebra (3 Credits)**

Vectors, vector spaces, and subspaces; geometry of finite dimensional Euclidean space; linear transformations; eigenvalues and eigenvectors; diagonalization. Throughout there will be an emphasis on theoretical concepts, logic, and methods. MATH 544L is an optional laboratory course where additional applications will be discussed.

**Prerequisites:** C or better in MATH 241 and MATH 300.

**MATH 544L - Linear Algebra Lab (1 Credit)**

Computer-based applications of linear algebra for mathematics students. Topics include numerical analysis of matrices, direct and indirect methods for solving linear systems, and least squares method (regression). Typical applications include theoretical and practical issues related to discrete Markov processes, image compression, and linear programming. Credit not allowed for both MATH 344L and 544L.

**Prerequisite or Corequisite:** C or better or concurrent enrollment in MATH 544.

**MATH 546 - Algebraic Structures I (3 Credits)**

Permutation groups; abstract groups; introduction to algebraic structures through study of subgroups, quotient groups, homomorphisms, isomorphisms, direct product; decompositions; introduction to rings and fields.

**Prerequisites:** C or better in MATH 544.

**MATH 547 - Algebraic Structures II (3 Credits)**

Rings, ideals, polynomial rings, unique factorization domains; structure of finite groups; topics from: fields, field extensions, Euclidean constructions, modules over principal ideal domains (canonical forms).

**Prerequisites:** C or better in MATH 546.

**MATH 548 - Geometry, Algebra, and Algorithms (3 Credits)**

Polynomials and affine space, Grobner bases, elimination theory, varieties, and computer algebra systems.

**Prerequisites:** C or better in MATH 300 and in one of MATH 344 or MATH 544.

**MATH 550 - Vector Analysis (3 Credits)**

Vector fields, line and path integrals, orientation and parametrization of lines and surfaces, change of variables and Jacobians, oriented surface integrals, theorems of Green, Gauss, and Stokes; introduction to tensor analysis.

**Prerequisites:** C or better in MATH 241.

**MATH 551 - Introduction to Differential Geometry (3 Credits)**

Parametrized curves, regular curves and surfaces, change of parameters, tangent planes, the differential of a map, the Gauss map, first and second fundamental forms, vector fields, geodesics, and the exponential map.

**Prerequisites:** C or better in MATH 241 and MATH 300.

**MATH 552 - Applied Complex Variables (3 Credits)**

Complex integration, calculus of residues, conformal mapping, Taylor and Laurent Series expansions, applications.

**Prerequisites:** C or better in MATH 241.

**MATH 554 - Analysis I (3 Credits)**

Least upper bound axiom, the real numbers, compactness, sequences, continuity, uniform continuity, differentiation, Riemann integral and fundamental theorem of calculus.

**Prerequisites:** C or better in MATH 300 and either at least one of MATH 511, MATH 520, MATH 534, MATH 550, or MATH 552.

**MATH 555 - Analysis II (3 Credits)**

Riemann-Stieltjes integral, infinite series, sequences and series of functions, uniform convergence, Weierstrass approximation theorem, selected topics from Fourier series or Lebesgue integration.

**Prerequisites:** C or better in MATH 554.

**MATH 561 - Introduction to Mathematical Logic (3 Credits)**

Syntax and semantics of formal languages; sentential logic, proofs in first order logic; Godel's completeness theorem; compactness theorem and applications; cardinals and ordinals; the Lowenheim-Skolem-Tarski theorem; Beth's definability theorem; effectively computable functions; Godel's incompleteness theorem; undecidable theories.

**Prerequisites:** C or better in MATH 300.

**MATH 562 - Theory of Computation (3 Credits)**

Basic theoretical principles of computing as modeled by formal languages and automata; computability and computational complexity.

**Prerequisites:** C or better in CSCE 350 or MATH 300.

**Cross-listed course:** CSCE 551

**MATH 570 - Discrete Optimization (3 Credits)**

Discrete mathematical models. Applications to such problems as resource allocation and transportation. Topics include linear programming, integer programming, network analysis, and dynamic programming.

**Prerequisites:** C or better in MATH 300 and in one of MATH 544 or MATH 344.

**MATH 574 - Discrete Mathematics I (3 Credits)**

Mathematical models; mathematical reasoning; enumeration; induction and recursion; tree structures; networks and graphs; analysis of algorithms.

**Prerequisites:** C or better in MATH 300.

**MATH 575 - Discrete Mathematics II (3 Credits)**

A continuation of MATH 574. Inversion formulas; Polya counting; combinatorial designs; minimax theorems; probabilistic methods; Ramsey theory; other topics.

**Prerequisites:** C or better in MATH 574.

**MATH 576 - Combinatorial Game Theory (3 Credits)**

Winning in certain combinatorial games such as Nim, Hackenbush, and Domineering. Equalities and inequalities among games, Sprague-Grundy theory of impartial games, games which are numbers.

**Prerequisites:** C or better in MATH 300 or MATH 374.

**MATH 580 - Elementary Number Theory (3 Credits)**

Divisibility, primes, congruences, quadratic residues, numerical functions. Diophantine equations.

**Prerequisites:** C or better in MATH 300.

**MATH 587 - Introduction to Cryptography (3 Credits)**

Design of secret codes for secure communication, including encryption and integrity verification: ciphers, cryptographic hashing, and public key cryptosystems such as RSA. Mathematical principles underlying encryption. Code-breaking techniques. Cryptographic protocols.

**Prerequisites:** C or better in CSCE 145 or MATH 241, and at least one of CSCE 355, MATH 300, or MATH 374.

**Cross-listed course:** CSCE 557

**MATH 599 - Topics in Mathematics (1-3 Credits)**

Recent developments in pure and applied mathematics selected to meet current faculty and student interest.

**MATH 602 - An Inductive Approach to Geometry (3 Credits)**

This course is designed for middle-level pre-service mathematics teachers. This course covers geometric reasoning, Euclidean geometry, congruence, area, volume, similarity, symmetry, vectors, and transformations. Dynamic software will be utilized to explore geometry concepts. This course cannot be used for credit toward a major in mathematics.

**Prerequisites:** C or better in MATH 122 or MATH 141 or equivalent.

**MATH 603 - Inquiry Approach to Algebra (3 Credits)**

This course introduces basic concepts in number theory and modern algebra that provide the foundation for middle level arithmetic and algebra. Topics include: algebraic reasoning, patterns, inductive reasoning, deductive reasoning, arithmetic and algebra of integers, algebraic systems, algebraic modeling, and axiomatic mathematics. This course cannot be used for credit towards a major in mathematics.

**Prerequisites:** C or higher in MATH 122 or MATH 141 or equivalent.

**MATH 650 - AP Calculus for Teachers (3 Credits)**

A thorough study of the topics to be presented in AP calculus, including limits of functions, differentiation, integration, infinite series, and applications. Not intended for degree programs in mathematics.

**Prerequisites:** current secondary high school teacher certification in mathematics and a C or better in at least 6 hours of calculus.

**MATH 700 - Linear Algebra (3 Credits)**

Vector spaces, linear transformations, dual spaces, decompositions of spaces, and canonical forms. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 701 - Algebra I (3 Credits)**

Algebraic structures, sub-structures, products, homomorphisms, and quotient structures of groups, rings, and modules. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 701I - Foundations of Algebra I (3 Credits)**

An introduction to algebraic structures; group theory including subgroups, quotient groups, homomorphisms, isomorphisms, decomposition; introduction to rings and fields. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 241 or equivalent.

**MATH 702 - Algebra II (3 Credits)**

Fields and field extensions. Galois theory, topics from, transcendental field extensions, algebraically closed fields, finite fields. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 701.

**MATH 702I - Foundations of Algebra II (3 Credits)**

Theory of rings including ideals, polynomial rings, and unique factorization domains; structure of finite groups; fields; modules. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 701I or equivalent.

**MATH 703 - Analysis I (3 Credits)**

Compactness, completeness, continuous functions. Outer measures, measurable sets, extension theorem and Lebesgue-Stieltjes measure. Integration and convergence theorems. Product measures and Fubini's theorem. Differentiation theory. Theorems of Egorov and Lusin.  $L_p$ -spaces. Analytic functions: Cauchy-Riemann equations, elementary special functions. Conformal mappings. Cauchy's integral theorem and formula. Classification of singularities, Laurent series, the Argument Principle. Residue theorem, evaluation of integrals and series. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 703I - Foundations of Analysis I (3 Credits)**

The real numbers and least upper bound axiom; sequences and limits of sequences; infinite series; continuity; differentiation; the Riemann integral. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 241 or equivalent.

**MATH 704 - Analysis II (3 Credits)**

Compactness, completeness, continuous functions. Outer measures, measurable sets, extension theorem and Lebesgue-Stieltjes measure. Integration and convergence theorems. Product measures and Fubini's theorem. Differentiation theory. Theorems of Egorov and Lusin.  $L_p$ -spaces. Analytic functions: Cauchy-Riemann equations, elementary special functions. Conformal mappings. Cauchy's integral theorem and formula. Classification of singularities, Laurent series, the Argument Principle. Residue theorem, evaluation of integrals and series. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 704I - Foundations of Analysis II (3 Credits)**

Sequences and series of functions; power series, uniform convergence; interchange of limits; limits and continuity in several variables. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 703I or equivalent.

**MATH 705 - Analysis III (3 Credits)**

Signed and complex measures, Radon-Nikodym theorem, decomposition theorems. Metric spaces and topology, Baire category, Stone-Weierstrass theorem, Arzela-Ascoli theorem. Introduction to Banach and Hilbert spaces, Riesz representation theorems. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 703, MATH 704.

**MATH 708 - Foundations of Computational Mathematics I (3 Credits)**

Approximation of functions by algebraic polynomials, splines, and trigonometric polynomials; numerical differentiation; numerical integration; orthogonal polynomials and Gaussian quadrature; numerical solution of nonlinear systems, unconstrained optimization. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 554 or equivalent upper level undergraduate course in Real Analysis.

**MATH 709 - Foundations of Computational Mathematics II (3 Credits)**

Vectors and matrices; QR factorization; conditioning and stability; solving systems of equations; eigenvalue/eigenvector problems; Krylov subspace iterative methods; singular value decomposition. Includes theoretical development of concepts and practical algorithm implementation. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 544 or MATH 526, or equivalent upper level undergraduate courses in Linear Algebra.

**MATH 710 - Probability Theory I (3 Credits)**

Probability spaces, random variables and distributions, expectations, characteristic functions, laws of large numbers, and the central limit theorem. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** STAT 511, STAT 512, or MATH 703.

**Cross-listed course:** STAT 810

**MATH 711 - Probability Theory II (3 Credits)**

More about distributions, limit theorems, Poisson approximations, conditioning, martingales, and random walks. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Cross-listed course:** STAT 811

**MATH 712I - Probability and Statistics (3 Credits)**

This course will include a study of permutations and combinations; probability and its application to statistical inferences; elementary descriptive statistics of a sample of measurements; the binomial, Poisson, and normal distributions; correlation and regression. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 720 - Applied Mathematics I (3 Credits)**

Modeling and solution techniques for differential and integral equations from sciences and engineering, including a study of boundary and initial value problems, integral equations, and eigenvalue problems using transform techniques, Green's functions, and variational principles. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 555 and MATH 520 or equivalent.

**MATH 721 - Applied Mathematics II (3 Credits)**

Foundations of approximation of functions by Fourier series in Hilbert space; fundamental PDEs in mathematical physics; fundamental equations for continua; integral and differential operators in Hilbert spaces. Basic modeling theory and solution techniques for stochastic differential equations. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 720.

**MATH 722 - Numerical Optimization (3 Credits)**

Topics in optimization; includes linear programming, integer programming, gradient methods, least squares techniques, and discussion of existing mathematical software. Graduate standing or consent of the department. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 723 - Differential Equations (3 Credits)**

Elliptic equations: fundamental solutions, maximum principles, Green's function, energy method and Dirichlet principle; Sobolev spaces: weak derivatives, extension and trace theorems; weak solutions and Fredholm alternative, regularity, eigenvalues and eigenfunctions. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 703/MATH 704.

**MATH 724 - Differential Equations II (3 Credits)**

Detailed study of the following topics: method of characteristics; Hamilton-Jacobi equations; conservation laws; heat equation; wave equation; linear parabolic equations; linear hyperbolic equations. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 723.

**MATH 725 - Approximation Theory (3 Credits)**

Approximation of functions; existence, uniqueness and characterization of best approximants; Chebyshev's theorem; Chebyshev polynomials; degree of approximation; Jackson and Bernstein theorems; B-splines; approximation by splines; quasi-interpolants; spline interpolation. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisite or Corequisite:** MATH 703.

**MATH 726 - Numerical Differential Equations I (3 Credits)**

Elliptic equations: fundamental solutions, maximum principles, Green's function, energy method and Dirichlet principle; Sobolev spaces: weak derivatives, extension and trace theorems; weak solutions and Fredholm alternative, regularity, eigenvalues and eigenfunctions. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 708/MATH 709.

**MATH 727 - Numerical Differential Equations II (3 Credits)**

Ritz and Galerkin weak formulation. Finite element, mixed finite element, collocation methods for elliptic, parabolic, and hyperbolic PDEs, including development, implementation, stability, consistency, convergence analysis, and error estimates.

**Prerequisites:** MATH 726.

**MATH 728 - Selected Topics in Applied Mathematics (3 Credits)**

All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 729 - Nonlinear Approximation (3 Credits)**

Nonlinear approximation from piecewise polynomial (spline) functions in the univariate and multivariate case, characterization of the approximation spaces via Besov spaces and interpolation, Newman's and Popov's theorems for rational approximation, characterization of the approximation spaces of rational approximation, nonlinear  $n$ -term approximation from bases in Hilbert spaces and from unconditional bases in  $L_p$  ( $p > 1$ ), greedy algorithms, application of nonlinear approximation to image compression.

**Prerequisites:** MATH 703.

**MATH 730 - General Topology I (3 Credits)**

Topological spaces, filters, compact spaces, connected spaces, uniform spaces, complete spaces, topological groups, function spaces. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 731 - General Topology II (3 Credits)**

Topological spaces, filters, compact spaces, connected spaces, uniform spaces, complete spaces, topological groups, function spaces. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 732 - Algebraic Topology I (3 Credits)**

The fundamental group, homological algebra, simplicial complexes, homology and cohomology groups, cup-product, triangulable spaces. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 730 or MATH 705, and MATH 701.

**MATH 733 - Algebraic Topology II (3 Credits)**

The fundamental group, homological algebra, simplicial complexes, homology and cohomology groups, cup-product, triangulable spaces. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 730 or MATH 705, and MATH 701.

**MATH 734 - Differential Geometry (3 Credits)**

Differentiable manifolds; classical theory of surfaces and hypersurfaces in Euclidean space; tensors, forms and integration of forms; connections and covariant differentiation; Riemannian manifolds; geodesics and the exponential map; curvature; Jacobi fields and comparison theorems, generalized Gauss-Bonnet theorem. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 550.

**MATH 735 - Lie Groups (3 Credits)**

Manifolds; topological groups, coverings and covering groups; Lie groups and their Lie algebras; closed subgroups of Lie groups; automorphism groups and representations; elementary theory of Lie algebras; simply connected Lie groups; semisimple Lie groups and their Lie algebras. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 705 or MATH 730.

**MATH 736I - Modern Geometry (3 Credits)**

Synthetic and analytic projective geometry, homothetic transformations, Euclidean geometry, non-Euclidean geometries, and topology. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 241 or equivalent.

**MATH 737 - Introduction to Complex Geometry (3 Credits)**

Algebraic geometry over the complex numbers, using ideas from topology, complex variable theory, and differential geometry.

**Prerequisite or Corequisite:** MATH 701.

**MATH 738 - Selected Topics in Geometry and Topology (3 Credits)**

Course content varies and will be announced in the schedule of classes by title. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 739 - Introduction to Complex Geometry II (3 Credits)**

Algebraic geometry over the complex numbers, using ideas from topology, complex variable theory, and differential geometry.

**Prerequisites:** MATH 737.

**MATH 741 - Algebra III (3 Credits)**

Theory of groups, rings, modules, fields and division rings, bilinear forms, advanced topics in matrix theory, and homological techniques.

**Prerequisites:** MATH 702.

**MATH 742 - Representation Theory (3 Credits)**

Representation and character theory of finite groups (especially the symmetric group) and/or the general linear group, Young tableaux, the Littlewood Richardson rule, and Schur functors.

**Prerequisites:** MATH 702.

**MATH 743 - Lattice Theory (3 Credits)**

Sublattices, homomorphisms and direct products of lattices; freely generated lattices; modular lattices and projective geometries; the Priestley and Stone dualities for distributive and Boolean lattices; congruence relations on lattices. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 740.

**MATH 744 - Matrix Theory (3 Credits)**

Extremal properties of positive definite and hermitian matrices, doubly stochastic matrices, totally non-negative matrices, eigenvalue monotonicity, Hadamard-Fisher determinantal inequalities. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 700.



**MATH 746 - Commutative Algebra (3 Credits)**

Prime spectrum and Zariski topology; finite, integral, and flat extensions; dimension; depth; homological techniques, normal and regular rings.

All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 701.

**MATH 747 - Algebraic Geometry (3 Credits)**

Properties of affine and projective varieties defined over algebraically closed fields, rational mappings, birational geometry and divisors especially on curves and surfaces, Bezout's theorem, Riemann-Roch theorem for curves. All Non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 701.

**MATH 748 - Selected Topics in Algebra (3 Credits)**

Course content varies and will be announced in the schedule of classes by title. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 750 - Fourier Analysis (3 Credits)**

The Fourier transform on the circle and line, convergence of Fejer means; Parseval's relation and the square summable theory, convergence and divergence at a point; conjugate Fourier series, the conjugate function and the Hilbert transform, the Hardy-Littlewood maximal operator and Hardy spaces. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 703 and MATH 704.

**MATH 751 - The Mathematical Theory of Wavelets (3 Credits)**

The  $L_1$  and  $L_2$  theory of the Fourier transform on the line, bandlimited functions and the Paley-Weiner theorem, Shannon-Whittaker Sampling Theorem, Riesz systems, Mallat-Meyer multiresolution analysis in Lebesgue spaces, scaling functions, wavelet constructions, wavelet representation and unconditional bases, nonlinear approximation, Riesz's factorization lemma, and Daubechies' compactly supported wavelets.

**Prerequisites:** MATH 703.

**MATH 752 - Complex Analysis (3 Credits)**

Normal families, meromorphic functions, Weierstrass product theorem, conformal maps and the Riemann mapping theorem, analytic continuation and Riemann surfaces, harmonic and subharmonic functions. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 703, MATH 704.

**MATH 752I - Complex Variables (3 Credits)**

Properties of analytic functions, complex integration, calculus of residues, Taylor and Laurent series expansions, conformal mappings. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 241 or equivalent.

**MATH 754 - Several Complex Variables (3 Credits)**

Properties of holomorphic functions of several variables, holomorphic mappings, plurisubharmonic functions, domains of convergence of power series, domains of holomorphy and pseudoconvex domains, harmonic analysis in several variables. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 703 and MATH 704.

**MATH 755 - Applied Functional Analysis (3 Credits)**

Banach spaces, Hilbert spaces, spectral theory of bounded linear operators, Fredholm alternatives, integral equations, fixed point theorems with applications, least square approximation. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 703.

**MATH 756 - Functional Analysis I (3 Credits)**

Linear topological spaces; Hahn-Banach theorem; closed graph theorem; uniform boundedness principle; operator theory; spectral theory; topics from linear differential operators or Banach algebras. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 704.

**MATH 757 - Functional Analysis II (3 Credits)**

Linear topological spaces; Hahn-Banach theorem; closed graph theorem; uniform boundedness principle; operator theory; spectral theory; topics from linear differential operators or Banach algebras. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 704.

**MATH 758 - Selected Topics in Analysis (3 Credits)**

Course content varies and will be announced in the schedule of classes by title. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 760 - Set Theory (3 Credits)**

An axiomatic development of set theory: sets and classes; recursive definitions and inductive proofs; the axiom of choice and its consequences; ordinals; infinite cardinal arithmetic; combinatorial set theory. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 761 - The Theory of Computable Functions (3 Credits)**

Models of computation; recursive functions, random access machines, Turing machines, and Markov algorithms; Church's Thesis; universal machines and recursively unsolvable problems; recursively enumerable sets; the recursion theorem; the undecidability of elementary arithmetic. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 762 - Model Theory (3 Credits)**

First order predicate calculus; elementary theories; models, satisfaction, and truth; the completeness, compactness, and omitting types theorems; countable models of complete theories; elementary extensions; interpolation and definability; preservation theorems; ultraproducts. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 768 - Selected Topics in Foundations of Mathematics (3 Credits)**

Course content varies and will be announced in the schedule of classes by title. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 770 - Discrete Optimization (3 Credits)**

The application and analysis of algorithms for linear programming problems, including the simplex algorithm, algorithms and complexity, network flows, and shortest path algorithms. No computer programming experience required. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 774 - Discrete Mathematics I (3 Credits)**

An introduction to the theory and applications of discrete mathematics. Topics include enumeration techniques, combinatorial identities, matching theory, basic graph theory, and combinatorial designs. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 775 - Discrete Mathematics II (3 Credits)**

A continuation of MATH 774. Additional topics will be selected from: the structure and extremal properties of partially ordered sets, matroids, combinatorial algorithms, matrices of zeros and ones, and coding theory. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 774.

**MATH 776 - Graph Theory I (3 Credits)**

The study of the structure and extremal properties of graphs, including Eulerian and Hamiltonian paths, connectivity, trees, Ramsey theory, graph coloring, and graph algorithms. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 777 - Graph Theory II (3 Credits)**

Continuation of MATH 776. Additional topics will be selected from: reconstruction problems, independence, genus, hypergraphs, perfect graphs, interval representations, and graph-theoretical models. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 776.

**MATH 778 - Selected Topics in Discrete Mathematics (3 Credits)**

Course content varies and will be announced in the schedule of classes by title. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 780 - Elementary Number Theory (3 Credits)**

Diophantine equations, distribution of primes, factoring algorithms, higher power reciprocity, Schnirelmann density, and sieve methods. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 780I - Theory of Numbers (3 Credits)**

Elementary properties of integers, Diophantine equations, prime numbers, arithmetic functions, congruences, and the quadratic reciprocity law. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 241 or equivalent.

**MATH 782 - Analytic Number Theory I (3 Credits)**

The prime number theorem, Dirichlet's theorem, the Riemann zeta function, Dirichlet's L-functions, exponential sums, Dirichlet series, Hardy-Littlewood method partitions, and Waring's problem. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 580 and MATH 552.

**MATH 783 - Analytic Number Theory II (3 Credits)**

The prime number theorem, Dirichlet's theorem, the Riemann zeta function, Dirichlet's L-functions, exponential sums, Dirichlet series, Hardy-Littlewood method partitions, and Waring's problem. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 580 and MATH 552.

**MATH 784 - Algebraic Number Theory (3 Credits)**

Algebraic integers, unique factorization of ideals, the ideal class group, Dirichlet's unit theorem, application to Diophantine equations. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 546 and MATH 580.

**MATH 785 - Transcendental Number Theory (3 Credits)**

Thue-Siegel-Roth theorem, Hilbert's seventh problem, diophantine approximation. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**Prerequisites:** MATH 580.

**MATH 788 - Selected Topics in Number Theory (3 Credits)**

Course content varies and will be announced in the schedule of classes by title. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 790 - Graduate Seminar (1 Credit)**

Although this course is required of all candidates for the master's degree it is not included in the total credit hours in the master's program. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 791 - Mathematics Pedagogy I (0-1 Credits)**

First of two required math pedagogy courses for graduate assistants in the department. Pedagogical topics include assessment theory, discourse, theory, lesson planning, and classroom management. Applications assist graduate students with syllabus/lesson/assessment creation, teacher questioning, midcourse evaluations, and student learning and engagement. This course will replace the University's requirement for GRAD 701. Restricted to Mathematics graduate students teaching at some capacity.

**MATH 792 - Mathematics Pedagogy II (0-1 Credits)**

Second of two required math pedagogy courses for graduate assistants in the department. Pedagogical topics include student-learning and reflection theories, sociomathematical norms, and constructivism. Applications assist graduates with lesson/revision/reflection, student-centered investigations, curriculum problem solving and metacognition. This course will replace the University's requirement for GRAD 701.

Restricted to Mathematics graduate students teaching at some capacity.  
**Prerequisites:** Satisfactory grade in MATH 791.

**MATH 797 - Mathematics into Print (3 Credits)**

The exposition of advanced mathematics emphasizing the organization of proofs and the formulation of concepts; computer typesetting systems for producing mathematical theses, books, and articles.

**MATH 798 - Directed Readings and Research (1-6 Credits)**

Full admission to graduate study in mathematics. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 799 - Thesis Preparation (1-9 Credits)**

For master's candidates. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 890 - Graduate Seminar (1-3 Credits)**

A review of current literature in specified subject areas involving student presentations. Content varies and will be announced in the schedule of classes by title. Minimum of 3 credit hours required of all doctoral students. All non-degree students should request permission to register from the Graduate Director in the Mathematics Department.

**MATH 899 - Dissertation Preparation (1-12 Credits)**

For doctoral candidates.

**MBAD - Master Busn Admin Prog (MBAD)****MBAD 701 - Business Simulation and Case Competition (3 Credits)**

Intensive preparation for computer simulation and case competition. Designed to integrate the major functional activities of an organization through case analysis. Teamwork, oral and written communications are emphasized. May be repeated once.

**MBAD 702 - Strategic Management (3 Credits)**

A course designed to integrate the student's knowledge of accounting, economics, finance, marketing, production, and international environment for the analysis of management problems. Oral and written communications are emphasized using the case method. For final year M.B.A. students.

**MBIM - Microblgy & Immunology (MBIM)****MBIM 700 - Topics in Advanced Immunology (2 Credits)**

Cutting-edge topics in immunology. Pass-Fail grading.

**Prerequisites:** cell biology or immunology course.

**MBIM 710 - Basic and Clinical Immunobiology (3 Credits)**

Immune system components, their functions and interactions. Immune system dysregulation and consequences as related to health and disease. Consideration of current topics of interest in immunology. Four lecture hours per week.

**Prerequisites:** cell/ molecular biology or 1 semester of Biochemistry.

**MBIM 710L - Laboratory in Advanced Immunobiology (2 Credits)**

Exercises and experiments on isolation, purification, and characterization of antibodies, lymphocytes, and macrophages and their involvement in immunologic reactions and interactions. Two three-hour laboratories per week.

**Prerequisite or Corequisite:** MBIM 710.

**MBIM 711 - Advances in Biologically-based Complementary and Alternative Medicine (2 Credits)**

Introduction of topics and discussion of cutting-edge research in the area of biologically-based Complementary and Alternative Medicine with special emphasis on immunological aspects of treatment and prevention of disease.

**MBIM 720 - Comprehensive Microbiology (6 Credits)**

Fundamental and clinical principles of microbiology and immunology as they relate to bacteria, viruses, fungi, and parasites. Major areas include immune system (organismic, cellular, and molecular levels), host-parasite interactions and infectious diseases (morphology, biology, and epidemiology). Lectures, conferences, and laboratories. Equivalent to MBIM 650 except there are no labs. Conferences devoted to literature reviews in basic microbiology and immunology.

**MBIM 730 - Frontiers in Biomedical Sciences (3 Credits)**

Concepts and molecular mechanisms of programmed cell death (PCD) or apoptosis, gene therapy, stem cells, and cell signaling.

**Prerequisites:** BS or MS degree.

**MBIM 739 - Medical Bacteriology (3 Credits)**

Description of bacterial structure and metabolism. How infectious agents cause disease, are identified and treated with chemotherapeutic agents. Comparison of diversity of host-pathogen interactions.

**MBIM 740 - Virology (3 Credits)**

Description of viral structure, chemical composition, and replication; new concepts of the role of viruses in genetics, immunity, and cancer, as well as in acute and chronic infections. Three lecture hours per week.

**Prerequisites:** minimum of one semester of biochemistry.

**MBIM 757 - Special Topics in Microbiology and Immunology (2 Credits)**

An intensive consideration of topics of current interest in microbiology and immunology. Course content varies by subject and title, but may not be repeated.

**MBIM 780 - Research in Microbiology and Immunology (1-6 Credits)**

A non-thesis course to provide training in laboratory techniques in specific areas of microbiology and immunology.

**MBIM 790 - Independent Study (1-3 Credits)**

Provides graduate students with an opportunity to develop their own course work in conjunction with the instruction. Contract approved by Instructor, Advisor and Department Chair or Graduate Director.

**MBIM 801 - Seminar in Microbiology and Immunology (1-2 Credits)****MBIM 899 - Dissertation Preparation (1-12 Credits)****MCBA - Cell Biol & Anatomy (MCBA)****MCBA 700 - Principles of Electron Microscopy (4 Credits)**

The overall objectives of this course are to demonstrate to students (1) the use of electron microscopy and related histochemical techniques in studying the disease process at the cellular level and (2) the use of electron microscopy as ancillary instrumentation in interdisciplinary medical research. Lectures (two hours per week) would cover current methods of sample preparations and examinations of tissue by transmission electron microscopy, scanning electron microscopy, electron diffraction, and freeze-fracture. Laboratory (6 hours per week) would involve individual sessions with the course director in relation to the individual's specific research problem.

**MCBA 701 - Human Embryology and Gross Anatomy (8 Credits)**

Gross morphology of the human body; names, relationships, and basic functions of body structures through original cadaver dissection observation supplemented by the use of texts, lectures, clinical correlations, radiographs, and informal discussion in groups.

**MCBA 702 - Human Microscopic Anatomy (5 Credits)**

Lecture and laboratory devoted to light microscopic and ultrastructural features of human cells, tissues, and organs. The correlations between structure and function are emphasized as well as the intimate relation of microscopic anatomy to biochemistry, physiology, and pathology.

**MCBA 710 - Special Topics in Gross Anatomy (3 Credits)**

Advanced study of one region of the body with special emphasis on detailed anatomy, normal variation, surgical procedures, original research, embryology, and teaching methods. Content varies by title and may be repeated a maximum of two times.

**Prerequisites:** ANAT 701.

**MCBA 715 - Cardiovascular Embryology (1-3 Credits)**

Advanced study of the essential features of human development, clarifying the gross anatomical features and giving emphasis to recent advances in human embryology. The clinical importance of embryology and the etiology of congenital defects are noted.

**Prerequisites:** ANAT 701.

**MCBA 720 - Special Topics in Microscopic Anatomy (1-3 Credits)**

Advanced study of selected topics in microscopic anatomy. Content varies by title and may be repeated a maximum of two times.

**MCBA 740 - Biological Microscopic Imaging (3 Credits)**

Sample preparation and equipment use for electron, light and confocal, and live-cell microscopy. Cell sorting and image analysis will be covered.

**MCBA 741 - Molecular Imaging Methods of Biomedical Research (3 Credits)**

Imaging technologies used in the analysis of cells, tissues, organs, and animals through a variety of molecular biology techniques.

**MCBA 742 - Biological Micro Imaging II (3 Credits)**

Advanced scanning and transmission electron microscopy techniques, electron tomography, digital imaging, 2 dimensional and 3 dimensional image analysis, 3 dimensional ultrastructure data set reconstruction. Enrollment restricted to 15 students.

**MCBA 743 - Molecular Imaging Methods in Biomedical Research II (3 Credits)**

Cell culture techniques, RNA and DNA isolation, PCR reactions, Gene Sequencing, Micro-array Technology. Enrollment restricted to 15 students.

**MCBA 750 - Mammalian Reproductive Biology (4 Credits)**

Mammalian reproductive systems at organismic, cellular, and molecular levels. Emphases on the structural, functional, and developmental aspects of the hypothalamus, pituitary gland, testis, and ovaries.

**Prerequisites:** BIOL 717, BMSC 702.

**MCBA 761 - Advanced Reproductive Neuroendocrinology (3 Credits)**

An intensive consideration of topics of current interest in the neuroendocrine control of reproduction. Student presentation and small group discussion formats.

**Prerequisites:** MCBA 750.

**MCBA 762 - Advanced Male Reproductive Biology (3 Credits)**

An intensive consideration of topics of current interest in male reproduction. Student presentation and small group discussion formats.

**Prerequisites:** MCBA 750.

**MCBA 763 - Advanced Female Reproductive Biology (3 Credits)**

An intensive consideration of topics of current interest in female reproduction. Student presentation and small group discussion formats.

**Prerequisites:** MCBA 750.

**MCBA 764 - Research in Reproductive Biology (1-12 Credits)**

Mentored independent laboratory research.

**MCBA 780 - Research in Anatomy (1-10 Credits)****MCBA 899 - Dissertation Preparation (1-12 Credits)**

## Mechanical Engineering (EMCH)

**EMCH 501 - Engineering Analysis I (3 Credits)**

Engineering applications of solution techniques for ordinary and partial differential equations, including Sturm-Liouville theory, special functions, transform techniques, and numerical methods.

**Prerequisites:** MATH 242.

**EMCH 502 - Engineering Analysis II (3 Credits)**

Engineering applications of optimization methods, calculus of variations including approximate methods, and probability concepts.

**Prerequisites:** MATH 242.

**EMCH 507 - Computer-Aided Design (3 Credits)**

Solid modeling using commercial computer-aided design (CAD) applications package to reverse engineer-manufactured parts. Analytical curves and surfaces, transformation matrices, assembly modeling, and computer tools for analyzing parts and mechanisms.

**Prerequisites:** EMCH 201, EMCH 327.

**EMCH 508 - Finite Element Analysis in Mechanical Engineering (3 Credits)**

Development of the fundamental concepts of finite element modeling. Matrix equation assembly and reduction. Mechanical engineering applications in structures, stress analysis, ideal flow, and heat transfer problems.

**Prerequisites:** EMCH 201, EMCH 327.

**EMCH 509 - Computer-Aided Manufacturing (3 Credits)**

Optimizing computer-controlled machining processes, programmable logic controllers (PLCs), motion control of servomechanisms, CNC machining practices and programming, and robotics.

**Prerequisites:** D or better in MATH 241.

**EMCH 516 - Control Theory in Mechanical Engineering (3 Credits)**

An introduction to closed-loop control systems; development of concepts, including transfer function, feedback, frequency response, and system stability by examples taken from mechanical engineering practice; control system design methods.

**Prerequisites:** MATH 242, EMCH 330.

**EMCH 520 - Technology Planning (3 Credits)**

Assessment of technological needs in the organization; coupling research and development to production; selection and evaluation of the technical project/program; technical planning, resource allocation, direction, and control; effective use and development of the engineering staff; the process of and barriers to technological change; technology, values, and policy. Senior or graduate standing.

**EMCH 521 - Concurrent Engineering (3 Credits)**

A systematic approach to the mechanical design of products, requiring the concurrent design of all related processes.

**Prerequisites:** EMCH 327.

**EMCH 522 - Design for Manufacture and Assembly (3 Credits)**

Product design principles for early consideration of issues to shorten product development time and to ensure smooth transition to manufacturing, thus accelerating time-to-market.

**Prerequisites:** EMCH 327 and EMCH 377.

**EMCH 527 - Design of Mechanical Systems (3 Credits)**

Summary of mechanical design, project management, product liability and the law, intellectual property ethics and professionalism.

**Prerequisites:** EMCH 327.

**EMCH 528 - Product Safety Engineering (3 Credits)**

Design considerations and methodologies for products to ensure adequate safeguards for the prevention of accidents, failures, and injuries. Senior standing.

**EMCH 529 - Sustainable Design and Development (3 Credits)**

System design and development accomplished with consideration of environmental/ecological, economic, and social constraints. Students will be introduced to sustainable design and accomplish a design project. Senior standing.

**EMCH 530 - Introduction to Engineering Optimization (3 Credits)**

Mathematical formulation of an optimum design problem, introduction to optimum design concepts and multidisciplinary design optimization. Use of mathematical programming methods for unconstrained and constrained minimization for engineering design optimization.

**Prerequisites:** C or better in MATH 142, Graduate standing.

**EMCH 532 - Intermediate Dynamics (3 Credits)**

Kinematics and dynamics of particles and rigid bodies using Newtonian mechanics. Work/energy, impulse/momentum, 3-D motion.

**Prerequisites:** EMCH 332.

**EMCH 535 - Robotics in Mechanical Engineering (3 Credits)**

Overview of robotics in practice and research: forward and inverse kinematics, statics and dynamics, trajectory generation, control, vision, and motion planning.

**Prerequisites:** EMCH 332.

**EMCH 544 - Compressible Fluid Flow (3 Credits)**

Application of the conservation laws of a compressible fluid to isentropic flows, flow with friction, and flows with heating or cooling. Shock and expansion waves. Nozzle and diffuser design.

**Prerequisites:** EMCH 354.

**EMCH 550 - Introduction to Nuclear Safeguards (3 Credits)**

International nuclear non-proliferation programs and activities, proliferation risk assessment, and nuclear materials management and safeguards, including physical protection systems, material accounting and control, monitoring, and regulatory issues.

**Prerequisites:** CHEM 112, CHEM 112L, PHYS 212, PHYS 212L, MATH 241, MATH 242.

**EMCH 551 - Nuclear Energy in the Hydrogen Economy (3 Credits)**

The current role of nuclear energy in the US and global energy mix will be described and the potential for future growth will be surveyed, particularly in the development of the hydrogen economy.

**Prerequisites:** EMCH 354.

**EMCH 552 - Introduction to Nuclear Engineering (3 Credits)**

Radioactivity and nuclear reactions; steady state and transient nuclear reactor theory.

**EMCH 553 - Nuclear Fuel Cycles (3 Credits)**

Processing of nuclear fuel including fabrication, irradiation, and waste disposal or storage. In-core and out-of-core fuel management. Fuel cycle economics.

**Prerequisites:** EMCH 552.

**EMCH 554 - Intermediate Heat Transfer (3 Credits)**

Radiant heat exchange, combined modes of heat transfer, computer techniques in heat transfer analysis and design, environmental heat transfer.

**Prerequisites:** EMCH 354.

**EMCH 555 - Instrumentation for Nuclear Engineering (3 Credits)**

Basic operational principles of radiation detection and nuclear instrumentation systems. Selection of the proper detector to measure radiation. Statistical analysis of results.

**Prerequisite or Corequisite:** EMCH 552 or PHYS 511.

**EMCH 555L - Nuclear Instrumentation Laboratory (1 Credit)**

Use of nuclear radiation detection and instrumentation systems and computers. Data acquisition and analysis.

**Corequisite:** EMCH 555.

**EMCH 556 - Introduction to Risk Analysis and Reactor Safety (3 Credits)**

An introduction to probabilistic risk assessment (PRA) methods as applied to nuclear power plants but also examples from the chemical industry, aerospace, transportation, and other sectors. Addresses failure and reliability analysis, fault trees, event trees, reactor safety, regulatory practice.

**Prerequisites:** STAT 509.

**EMCH 557 - Introduction to Radiation Shielding and Sources (3 Credits)**

Radiation interactions and transport, design of radiation shields, point kernel, and Monte Carlo methods. Dosimetry, buildup factors, radiation sources, and shield materials.

**EMCH 558 - Introduction to Nuclear Reactor Systems (3 Credits)**

PWR and BWR reactors, reactor system designs for accident prevention and mitigation, protection systems, containment design, emergency cooling requirements, code of federal regulations, and design criteria.

**Corequisite:** EMCH 552.

**EMCH 560 - Intermediate Fluid Mechanics (3 Credits)**

Integral and differential analysis of fluids. Potential flow. Boundary layer analysis. Flow in closed and open channels. Flow dynamics of turbomachinery. Steady and unsteady flows.

**Prerequisites:** EMCH 310, EMCH 360.

**EMCH 561 - Current Topics in Mechanical Engineering (1-3 Credits)**

Special topics related to current issues in mechanical engineering. Course content varies and will be announced in the schedule of classes by title.

**EMCH 562 - Micro/nanofluidics and Lab-on-a-Chip (3 Credits)**

Basic fluid mechanics, capillary, drop and micro/nanoparticle, electrokinetics; Micropump, mixer, preconcentrator, electrophoresis, microactuator and particle manipulator; Sensors for pressure, velocity, concentration, temperature in environmental monitoring/biodefence, clinical diagnostics, drug discovery/delivery. Restricted to: Upper division.

**Prerequisites:** CHEM 112, CHEM 112L, PHYS 212.

**EMCH 567 - Bio Nano/Micro Electro-Mechanical Systems (3 Credits)**

Nano/microfabrication for nano/microstructures, photolithography, self-assembly, etching techniques, physical and chemical vapor deposition, surface and bulk micromachining, MEMS integration and packaging; applications in Biomedical Engineering; microactuators, biomicrosensors, and biomedical devices.

**Prerequisites:** CHEM 112, CHEM 112L, PHYS 212.

**EMCH 571 - Mechanical Behavior of Materials (3 Credits)**

Micromechanisms of the deformation and fracture of structural materials; brittle versus ductile behavior; fatigue and creep; strengthening mechanisms; mechanical testing techniques; methods in analysis of mechanical failures.

**Prerequisites:** EMCH 260, EMCH 371.

**EMCH 572 - Physical Metallurgy (3 Credits)**

Equilibrium and phase relations in metallic systems; kinetics of phase transformations; annealing and precipitation phenomena.

**Prerequisites:** EMCH 371.

**EMCH 573 - Introduction to Nuclear Materials (3 Credits)**

Materials for nuclear applications; materials degradation processes occurring in the nuclear reactor environment. Restricted to Engineering Upper Division and Graduate Students.

**EMCH 575 - Adaptive Materials and Smart Structures (3 Credits)**

A multidisciplinary introductory course addressing the engineering field of adaptive materials and smart structures.

**Prerequisites:** EMCH 260, EMCH 310.

**EMCH 576 - Fundamentals and Applications of Fuel Cells (3 Credits)**

Study of fuel cell principles, fuel cell characterization, characteristics of the major types of fuel cells, fuel cell and stack components, fuel cell stack and system design, fuel cell applications in portable, transportation, and stationary areas, as well as the current status and future research focus of fuel cells. Restricted to: Upper division.

**Prerequisites:** EMCH 290 or ECHE 310 or ENCP 290.

**EMCH 577 - Aerospace Structures I (3 Credits)**

Static analysis of aerospace structural elements such as bars, beams, columns, plates, and shells. Topics include, but not limited to elasticity theory, simple beam theory, boundary value problems, and structural stability. Upper division or graduate status.

**EMCH 578 - Introduction to Aerodynamics (3 Credits)**

Fundamentals of aerodynamics, elements of compressible flow, thin airfoil theory, finite wing theory, flow through nozzles diffusers and wind tunnels, normal and oblique shock waves, elements of the methods of characteristics of finite difference solutions for compressible flows, aspects of hypersonic flow.

**EMCH 580 - Mechanics of Solid Biomaterials (3 Credits)**

Introduction to the mechanical behavior of solid biomaterials. Structure and mechanical properties of tissue including skin, myocardium, and tendon. Mathematical treatment of anisotropic elasticity, nonlinear elasticity, linear and quasi-linear viscoelasticity, muscle activity.

**Prerequisites:** MATH 242.

**EMCH 584 - Advanced Mechanics of Materials (3 Credits)**

Topics in stress analysis, including unsymmetrical bending, three-dimensional stress-strain; torsion; rotational stress; thick-walled pressure vessels; beams on elastic foundations; and stress concentration.

**Prerequisites:** EMCH 260.

**EMCH 585 - Introduction to Composite Materials (3 Credits)**

Introduction to fiber reinforced polymer (FRP) composite materials, manufacturing methods and processes. Micro-Mechanics and properties of orthotropic laminated and woven composites. Analysis of composite structures (Mechanics and Synergistic environmental effects). Structure/property relationships. Characterization of modern composite materials. Design considerations.

**Prerequisites:** EMCH 327, EMCH 371, MATH 242.

**EMCH 586 - Experimental Stress Analysis (3 Credits)**

Stress analysis utilizing experimental techniques including transmission and scattered light photoelasticity, strain gauges, and brittle coatings. Introduction to modern concepts of coherent optics in stress analysis with emphasis on engineering applications.

**Prerequisites:** EMCH 260.

**EMCH 592 - Introduction to Combustion (3 Credits)**

Chemical thermodynamics, reaction kinetics, and combustion phenomena in energy production. Application to the modeling of coal combustion, incineration, and combustion engines.

**Prerequisites:** EMCH 354, EMCH 394.

**EMCH 594 - Solar Heating (3 Credits)**

Solar radiation; review of heat transfer and radiation characteristics of relevant materials; flat plate and focusing collectors; energy storage models for design of solar heating systems; system design by computer simulation; direct conversion by solar cells.

**Prerequisites:** EMCH 290, EMCH 354, or ECHE 321.

**EMCH 597 - Thermal Environmental Engineering (3 Credits)**

Vapor compression and absorption refrigeration systems. Heat pumps. Properties of refrigerants. Cryogenic refrigeration. Heating and cooling of buildings. Solar heating and cooling systems.

**Prerequisites:** EMCH 354, EMCH 394.

**EMCH 701 - Methods of Engineering Analysis (3 Credits)**

Variational methods of approximation are used with the finite element method to simulate the reliability predictions in design of mechanical systems. The functional relationship between geometry, materials, and physical laws of motion and energy are applied to solid, thermal, and fluid systems.

**Prerequisites:** EMCH 201.

**EMCH 708 - Computer-Aided Product Design and Analysis (3 Credits)**

Integration of computer-aided design and computer-aided engineering for shorter design cycles. Application of solid modeling and computer simulation tools to the design process.

**EMCH 717 - Advanced Finite Element Methods (3 Credits)**

Advanced finite element topics, including dynamic and nonlinear analyses. Computer projects will be assigned.

**Prerequisites:** EMCH 508.

**EMCH 721 - Aeroelasticity (3 Credits)**

Study the principles and applications of aircraft aeroelasticity with emphasis on aircraft structural dynamics, vibrations, unsteady aerodynamics, and interaction thereof.

**EMCH 722 - Plasticity (3 Credits)**

Basic experiments and observations of elastic-plastic material behavior; yield criteria; deformation and flow theories; slip line fields; numerical techniques; one and two dimensional applications.

**Prerequisites:** ENCP 707.

**EMCH 727 - Advanced Mechanical Design (3 Credits)**

Analysis of stresses involved in mechanical loading under various environmental conditions including failure criteria, impact and fatigue loading, residual stress, contact stress, and experimental stress analysis.

**Prerequisites:** EMCH 260.

**EMCH 732 - Advanced Dynamics of Machinery (3 Credits)**

Rigid body dynamics of mechanical systems. Dynamics of linkages, gears, and cams. Balancing. Synthesis of mechanisms. Digital computer and computer graphics methods in dynamics.

**Prerequisites:** EMCH 532

**EMCH 741 - Viscous and Turbulent Flow (3 Credits)**

Viscosity. The Navier-Stokes equation, its formulation and its properties. Exact solutions of the flow at low Reynolds number. Flow at high Reynolds number. The momentum theory of boundary layer. Turbulent flows.

**EMCH 742 - Advanced Gas Dynamics (3 Credits)**

Development of the general equations of frictionless flow. Small perturbation theory. Subsonic and supersonic similarity rules. Applications of the method of characteristics to unsteady flow. Low density flow fundamentals.

**EMCH 743 - Aircraft and Rocket Propulsion (3 Credits)**

Introduction to aircraft and rocket engines with emphasis on the performance and characteristics of various types of propulsion systems, including turbojet, turbofan, turboprop, ramjet, scramjet, and liquid and solid propellant rockets.

**Prerequisite or Corequisite:** EMCH 544.

**EMCH 744 - Aerodynamics & Flight Mechanics (3 Credits)**

Aerodynamics of wings and bodies in aircraft and the static and dynamic analysis of airplane flight mechanics. Topics include fundamentals of potential flows, thin airfoil theory, finite wing theory, laminar and turbulent boundary layers, trajectory analysis, and stability and control of an airplane.

**EMCH 751 - Advanced Heat Transfer (3 Credits)**

Development of the energy equation for convection and some exact solutions. Approximate analysis of the boundary layer by integral methods. Analogy between heat and momentum transfer. Experimental results.

**EMCH 752 - Thermal Radiation Heat Transfer (3 Credits)**

Radiation heat transfer between surfaces of enclosures; diffuse-gray and nondiffuse-gray surfaces. Radiative properties of real materials; metals, opaque nonmetals, transmitting solids. Gas radiation in enclosures.

**Prerequisites:** EMCH 751.

**EMCH 753 - Chemical Thermodynamic Calculations and Modeling with Applications (3 Credits)**

Principles of chemical thermodynamics; reactions, transformations, phase equilibria, and applications to engineering processes.

**EMCH 754 - Thermal Hydraulic Design of Nuclear Reactors (3 Credits)**

Power plant thermodynamics, reactor heat generation and removal (single-phase as well as two-phase coolant flow and heat transfer), and engineering considerations in reactor design.

**Prerequisites:** EMCH 552.

**EMCH 755 - Advanced Nuclear Engineering (3 Credits)**

Reactor physics including heterogeneous effects, multi-group calculations, reactor kinetics, stability and control, fuel depletion, and burnable poisons.

**Prerequisites:** EMCH 552.

**EMCH 756 - Safety Analysis for Energy Systems (3 Credits)**

Analysis of the safety of nuclear energy facilities focusing on reliability and probabilistic risk analysis.

**Prerequisites:** EMCH 552.

**EMCH 757 - Radiation Shielding (3 Credits)**

Radiation interactions and transport, design of radiation shields, point kernel, removal-diffusion, discrete ordinates, and Monte Carlo methods. Dosimetry, buildup factors, radiation sources, and shield materials.

**Prerequisites:** EMCH 552.

**EMCH 758 - Nuclear Reactor Systems (3 Credits)**

PWR and BWR reactors, reactor system designs for accident prevention and mitigation, protection systems, containment design, emergency cooling requirements, and atmospheric dispersion of radioactive material.

**Prerequisites:** EMCH 552.

**EMCH 759 - Waste Management in the Nuclear Industry (3 Credits)**

Management of low- and high-level radioactive, hazardous, and mixed waste; transportation, treatment, storage, and disposal techniques.

Political and social issues involved with nuclear waste.

**Prerequisites:** EMCH 552.

**EMCH 764 - Mechanical Engineering Projects (3 Credits)**

Guided independent work on current research or design projects, culminating either in a written report or in the construction of a prototype device.

**EMCH 767 - Microelectromechanical Systems (MEMS) (3 Credits)**

Fundamentals of micromachining and microfabrication technologies, microsystem design, MEMS integration and packaging issues, design and analysis of microsensors and microactuators, microfluidics and bioMEMS, and CAD for MEMS. Design project required.

**EMCH 770 - Predictive Modeling: Combining Experiments with Computations (3 Credits)**

Experimental and computational uncertainties; combining experiments with computations to obtain "best - estimate" results with reduced uncertainties; predictive modeling.

**EMCH 771 - Design Properties of Plastics (3 Credits)**

Physical properties of various commercial thermoset and thermoplastic resins. Linear viscoelastic theory and its relationship to measurable mechanical properties of plastics.

**EMCH 772 - Nuclear Materials (3 Credits)**

This course focuses on behavior and performance of materials in nuclear irradiation fields. Materials used in the core for reactivity control and materials used for structural support will be studied.

**EMCH 774 - Radiation Damage (3 Credits)**

Structural materials for nuclear application; Radiation interaction with matter; Microstructure evolution under irradiation; Material properties degradation under irradiation.

**Prerequisites:** EMCH 573.

**EMCH 777 - Aerospace Structures II (3 Credits)**

Principles and applications of aerospace structures with emphasis on the construction and analysis of thin-wall monocoque and semi-monocoque wings and fuselages.

**Prerequisite or Corequisite:** EMCH 577.

**EMCH 778 - Nanomaterials: Synthesis, Characterization, and Applications (3 Credits)**

Advances in nanomaterials; synthesis of nanomaterials; nanoparticles, nanotubes/wires, nanometer thick thin films, nanostructured bulk materials; assembly of nanostructures; biologically inspired structures; structure-property-correlations in nanomaterials and nanostructures; advanced characterization techniques; applications, especially those related to nanotechnology, information technology, MEMS/NEMS, and biotechnology.

**Prerequisites:** EMCH 371.

**EMCH 780 - Energy Storage (3 Credits)**

This course is aimed to provide graduate students with a comprehensive introduction to the various energy storage mechanisms and technologies that are currently being utilized. The content of the course includes methods and mechanisms of common energy storage (thermal, mechanical, chemical and electrochemical).

**EMCH 785 - Design of Composite Materials for Aerospace Structures (3 Credits)**

Property and performance requirements for aerospace structures. Design for stiffness, strength, durability, damage tolerance, and life at the lamina, laminate, and structural level (materials and analysis).

**EMCH 790 - Mechanical Engineering for Teachers I (3 Credits)**

Introduction to concepts of modeling, dimensional analysis, lift, and drag. For preservice teachers enrolled in a professional program (M.A.T. and M.T. students) and in-service teachers (M.Ed. and Ed.S. students) only.

**EMCH 791 - Selected Topics in Thermal Systems (1-3 Credits)**

Special topics related to current research in thermal systems.

**EMCH 792 - Selected Topics in Mechanical Systems (1-3 Credits)**

Special topics related to current research in mechanical systems.

**EMCH 793 - Combustion Processes in Industry (3 Credits)**

Development of the physics of turbulent flow, turbulent combustion, atomization, and vaporization of liquid sprays. Design and analysis of industrial combustion processes including incinerators and furnaces.

**Prerequisites:** EMCH 592.

**EMCH 794 - Thermodynamics (3 Credits)**

An advanced treatment of thermodynamics stressing fundamentals. Application of first and second laws; study of properties and criteria for reactive, non-reactive, and coupled systems.

**Prerequisites:** EMCH 354 and EMCH 394.

**EMCH 797 - Research (1-12 Credits)**

CL: 2020.

**EMCH 799 - Thesis Preparation (1-12 Credits)****EMCH 847 - Fluid Systems Design (3 Credits)**

Hydrodynamics of one and two-phase flow in ducts. Pressure surges and flow stability. Flow induced vibrations. Numerical techniques. Fluid power systems design.

**Prerequisites:** EMCH 741.

**EMCH 857 - Advanced Heat Transfer II (3 Credits)**

Solution of radiation problems through non-absorbing, non-emitting media. Heat exchanger design.

**EMCH 881 - Fatigue of Materials (3 Credits)**

Fatigue of materials presented from mechanics and microstructural points of view. Stress-life, strain life, and Linear Elastic Fracture Mechanics (LEFM) approaches will be covered.

**EMCH 882 - Fracture Mechanics (3 Credits)**

Linear elastic and elastoplastic description of stress fields around cracks. Discussion of stress intensity factor, strain energy density. Dynamic crack propagation and arrest. Fatigue crack propagation. Fracture toughness testing. Applications of concepts.

**Prerequisites:** EMCH 584.

**EMCH 883 - Wave Propagation in Solids (3 Credits)**

Formulation and solution of the wave propagation problem in an unbounded isotropic medium. Study of the reflection-refraction problem at a plane interface. Discussion of Rayleigh, Love, and general surface waves. Wave propagation in a bounded isotropic medium.

**Prerequisites:** ENCP 707.

**EMCH 899 - Dissertation Preparation (1-12 Credits)**

## MEDI - Medicine Clinical (MEDI)

**MEDI 700 - Health Aspects of Aging (3 Credits)**

## Media Arts (MART)

**MART 521A - Media Writing Advanced: Screenwriting (3 Credits)**

Advanced study of screenwriting. Content varies by course title: 521A Screenwriting; 521B Feature Film; 521C Manga and Anime; 521D Television Writing. May be repeated as content varies by title up to 3 times.

**Prerequisites:** MART 321.

**MART 521B - Media Writing Advanced: Feature Film (3 Credits)**

Advanced study of feature film writing. Content varies by course title: 521A Screenwriting; 521B Feature Film; 521C Manga and Anime; 521D Television Writing. May be repeated as content varies by title up to 3 times.

**Prerequisites:** MART 321.

**MART 521C - Media Writing Advanced: Manga and Anime (3 Credits)**

Advanced study of Manga and Anime. Content varies by course title: 521A Screenwriting; 521B Feature Film; 521C Manga and Anime; 521D Television Writing. May be repeated as content varies by title up to 3 times.

**Prerequisites:** MART 321.

**MART 521D - Media Writing Advanced: Television Writing (3 Credits)**

Advanced study of television writing. Content varies by course title: 521A Screenwriting; 521B Feature Film; 521C Manga and Anime; 521D Television Writing. May be repeated as content varies by title up to 3 times.

**Prerequisites:** MART 321.

**MART 571A - Moving Image Advanced: Narrative (3 Credits)**

Narrative for motion picture.

**Prerequisites:** MART 371.

**MART 571B - Moving Image Advanced: Documentary (3 Credits)**

Documentary production.

**Prerequisites:** MART 371.

**MART 571C - Moving Image Advanced: Animation (3 Credits)**

Animation production.

**Prerequisites:** MART 371.



**MART 571D - Moving Image Advanced: Experimental (3 Credits)**

Experimental motion picture production.

**Prerequisites:** MART 371.

**MART 571E - Moving Image Advanced: Cinematography (3 Credits)**

Motion picture cinematography.

**Prerequisites:** MART 371.

**MART 571F - Moving Image Advanced: Sound for Motion Picture (3 Credits)**

Sound production for motion picture.

**Prerequisites:** MART 371.

**MART 581A - New Media Advanced: Site-based and Installation Art (3 Credits)**

Art and practice of site-based and installation art. Content varies by course title: 581A, Site-based and Installation Art; 581B, Mobile Platforms; 581C, Media Performance; 581D, Video Game Design; 581E, Sound Art. May be repeated as content varies by title up to 3 times.

**Prerequisites:** MART 380.

**MART 581B - New Media Advanced: Mobile Platforms (3 Credits)**

Art and practice of mobile platforms. Content varies by course title: 581A, Site-based and Installation Art; 581B, Mobile Platforms; 581C, Media Performance; 581D, Video Game Design; 581E, Sound Art. May be repeated as content varies by title up to 3 times.

**Prerequisites:** MART 380.

**MART 581C - New Media Advanced: Media Performance (3 Credits)**

Art and practice of media performance. Content varies by course title: 581A, Site-based and Installation Art; 581B, Mobile Platforms; 581C, Media Performance; 581D, Video Game Design; 581E, Sound Art. May be repeated as content varies by title up to 3 times.

**Prerequisites:** MART 380.

**MART 581D - New Media Advanced: Video Game Design (3 Credits)**

Art and practice of video game design. Content varies by course title: 581A, Site-based and Installation Art; 581B, Mobile Platforms; 581C, Media Performance; 581D, Video Game Design; 581E, Sound Art. May be repeated as content varies by title up to 3 times.

**Prerequisites:** MART 380.

**MART 581E - New Media Advanced: Sound Art (3 Credits)**

Art and practice of sound art. Content varies by course title: 581A, Site-based and Installation Art; 581B, Mobile Platforms; 581C, Media Performance; 581D, Video Game Design; 581E, Sound Art. May be repeated as content varies by title up to 3 times.

**Prerequisites:** MART 380.

**MART 590 - Special Topics in Media Arts (3 Credits)**

Selected topics in media arts. Course content varies and will be announced in the schedule of classes by title.

**MART 591 - Special Topics in Film and Media Studies (3 Credits)**

Intensive study of a specific topic in film and media studies. May be repeated as content varies by title.

**Prerequisites:** FAMS 240.

**Cross-listed course:** ARTH 551, FAMS 511

**MART 592 - Special Topics in Film and Media Histories (3 Credits)**

Intensive study of a specific topic in film and media history. May be repeated as content varies by title.

**Prerequisites:** FAMS 300.

**MART 593 - Special Topics in U.S. Film and Media (3 Credits)**

Intensive study of a specific topic in U.S. film and media studies. May be repeated as content varies by title.

**Prerequisites:** FAMS 240.

**MART 594 - Special Topics in Global Film and Media (3 Credits)**

Intensive study of a specific topic concerning films produced in a country other than the United States. May be repeated as content varies by title.

**Prerequisites:** FAMS 240.

**Cross-listed course:** FAMS 598, FORL 598

**MART 598 - Media Management and Distribution (3 Credits)**

Research in media management and distribution.

**Prerequisites:** MART 110 and MART 210.

**MART 701 - The Role of Research in Media Arts Practice (3 Credits)**

Approaches to research methods as these inform media arts and practice. Emphasis on the development of critical (e.g., theoretical, historical, social, cultural, etc.) engagement.

**MART 702 - Principles of Media Arts Practice (3 Credits)**

Application of theoretical concepts to media arts practice.

**Prerequisites:** MART 701.

**MART 721A - Research and Practice in Media Writing: Screenwriting (3 Credits)**

Advanced study of media storytelling in one or more of the following topics: 721A Screenwriting; 721B Feature Film; 721C Manga and Anime; 721D Television Writing.

**MART 721B - Research and Practice in Media Writing: Feature Film (3 Credits)**

Advanced study of media storytelling in one or more of the following topics: 721A Screenwriting; 721B Feature Film; 721C Manga and Anime; 721D Television Writing.

**MART 721C - Research and Practice in Media Writing: Manga and Anime (3 Credits)**

Advanced study of media storytelling in one or more of the following topics: 721A Screenwriting; 721B Feature Film; 721C Manga and Anime; 721D Television Writing.

**MART 721D - Research and Practice in Media Writing: Television Writing (3 Credits)**

Advanced study of media storytelling in one or more of the following topics: 721A Screenwriting; 721B Feature Film; 721C Manga and Anime; 721D Television Writing.

**MART 771A - Research and Practice in Media Arts Production: Narrative (3 Credits)**

Advanced study of moving image production in one or more of the following topics: 771A Narrative; 771B Documentary; 771C Animation; 771D Experimental; 771E Cinematography; 771F Sound for Motion Picture. Course may be taken 2 times.

**MART 771B - Research and Practice in Media Arts Production: Documentary (3 Credits)**

Advanced study of moving image production in one or more of the following topics: 771A Narrative; 771B Documentary; 771C Animation; 771D Experimental; 771E Cinematography; 771F Sound for Motion Picture. Course may be taken 2 times.

**MART 771C - Research and Practice in Media Arts Production: Animation (3 Credits)**

Advanced study of moving image production in one or more of the following topics: 771A Narrative; 771B Documentary; 771C Animation; 771D Experimental; 771E Cinematography; 771F Sound for Motion Picture. Course may be taken 2 times.

**MART 771D - Research and Practice in Media Arts Production: Experimental (3 Credits)**

Advanced study of moving image production in one or more of the following topics: 771A Narrative; 771B Documentary; 771C Animation; 771D Experimental; 771E Cinematography; 771F Sound for Motion Picture. Course may be taken 2 times.

**MART 771E - Research and Practice in Media Arts Production: Cinematography (3 Credits)**

Advanced study of moving image production in one or more of the following topics: 771A Narrative; 771B Documentary; 771C Animation; 771D Experimental; 771E Cinematography; 771F Sound for Motion Picture. Course may be taken 2 times.

**MART 771F - Research and Practice in Media Arts Production: Sound for Motion Picture (3 Credits)**

Advanced study of moving image production in one or more of the following topics: 771A Narrative; 771B Documentary; 771C Animation; 771D Experimental; 771E Cinematography; 771F Sound for Motion Picture. Course may be taken 2 times.

**MART 781A - Research and Practice in New Media Art: Site-based and Installation Art (3 Credits)**

Advanced study of new media art in one or more of the following topics: 781A Site-based and Installation Art; 781B Mobile Platforms; 781C Media Performance; 781D Video Game Design; 781E Sound Art. Course may be taken 2 times.

**MART 781B - Research and Practice in New Media Art: Mobile Platforms (3 Credits)**

Advanced study of new media art in one or more of the following topics: 781A Site-based and Installation Art; 781B Mobile Platforms; 781C Media Performance; 781D Video Game Design; 781E Sound Art. Course may be taken 2 times.

**MART 781C - Research and Practice in New Media Art: Media Performance (3 Credits)**

Advanced study of new media art in one or more of the following topics: 781A Site-based and Installation Art; 781B Mobile Platforms; 781C Media Performance; 781D Video Game Design; 781E Sound Art. Course may be taken 2 times.

**MART 781D - Research and Practice in New Media Art: Video Game Design (3 Credits)**

Advanced study of new media art in one or more of the following topics: 781A Site-based and Installation Art; 781B Mobile Platforms; 781C Media Performance; 781D Video Game Design; 781E Sound Art. Course may be taken 2 times.

**MART 781E - Research and Practice in New Media Art: Sound Art (3 Credits)**

Advanced study of new media art in one or more of the following topics: 781A Site-based and Installation Art; 781B Mobile Platforms; 781C Media Performance; 781D Video Game Design; 781E Sound Art. Course may be taken 2 times.

**MART 790 - Independent Study (3 Credits)**

Specialized research in media arts theory and/or practice.

**MART 795A - Media Arts Research: Media Theory (3 Credits)**

Advanced study in one or more of the following topics in the media arts: 795A Media Theory; 795B Media History; 795C Media Aesthetics; 795D Global Media Culture; 795E Media Management and Distribution. Course can be taken 2 times.

**MART 795B - Media Arts Research: Media History (3 Credits)**

Advanced study in one or more of the following topics in the media arts: 795A Media Theory; 795B Media History; 795C Media Aesthetics; 795D Global Media Culture; 795E Media Management and Distribution. Course can be taken 2 times.

**MART 795C - Media Arts Research: Media Aesthetics (3 Credits)**

Advanced study in one or more of the following topics in the media arts: 795A Media Theory; 795B Media History; 795C Media Aesthetics; 795D Global Media Culture; 795E Media Management and Distribution. Course can be taken 2 times.

**MART 795D - Media Arts Research: Global Media Culture (3 Credits)**

Advanced study in one or more of the following topics in the media arts: 795A Media Theory; 795B Media History; 795C Media Aesthetics; 795D Global Media Culture; 795E Media Management and Distribution. Course can be taken 2 times.

**MART 795E - Media Arts Research: Media Management and Distribution (3 Credits)**

Advanced study in one or more of the following topics in the media arts: 795A Media Theory; 795B Media History; 795C Media Aesthetics; 795D Global Media Culture; 795E Media Management and Distribution. Course can be taken 2 times.

**MART 797 - Practicum in Media Arts (3 Credits)**

Field experience in the media arts combined with directed research.

**MART 798 - Project Research and Preparation (1-6 Credits)**

Development and completion of a creative media arts project grounded in theory and research. May be repeated twice for up to 6 hours.

**MART 799 - Thesis Research and Preparation (1-6 Credits)**

## Middle Level Education (EDML)

**EDML 553 - Methods and Materials for Teaching Science in the Middle Grades (3 Credits)**

A study of methods, techniques, and materials of instruction appropriate to science teaching in the middle school.

**EDML 563 - Methods and Materials for Teaching Social Studies in the Middle School (3 Credits)**

A study of goals, content, methods, and materials of instruction in middle school social studies.

**EDML 572 - Middle Level Literacy Assessment (3 Credits)**

Introduces literacy assessment for individual and small groups or middle level students.

**EDML 573 - Methods and Materials for Teaching English/Language Arts in the Middle Grades (3 Credits)**

Introduces goals, content, and methods of teaching language arts at the middle level.

**EDML 583 - Methods and Materials for Teaching Mathematics in the Middle Grades (3 Credits)**

A study of methods, techniques, and materials of instruction appropriate to mathematics teaching in the middle school.

**EDML 584 - Middle School Internship Seminar (3 Credits)**

Inquiry into the issues that arise during internship B experiences including classroom management, adolescent development, legal/professional responsibilities, multicultural perspectives, and needs of exceptional children.

**Corequisite:** EDML 599.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Internships

**EDML 598 - Internship A in the Middle School (3 Credits)**

Application of effective teaching techniques and organization of instructional settings for middle school students.

**Prerequisites:** admission to internship in middle level program.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Internships

**EDML 599 - Internship B in the Middle School (12 Credits)**

Application of effective teaching techniques and organization of instructional settings for middle school students.

**Prerequisites:** B or better in EDML 598.

**Corequisite:** EDSE 584.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Internships

**Experiential Learning:** Experiential Learning Opportunity

## Music (MUSC)

**MUSC 500 - Topics in Performance and Literature (1-3 Credits)**

Course content varies and will be announced in the schedule of course title.

**MUSC 501 - Secondary Applied Music (1-2 Credits)**

Courses consist of individual instruction including individualized assignments and regular private instruction and review. Instruments are designated by suffix: 501A-flute/piccolo; 501B-oboe/English horn; 501C-clarinet; 501D-bassoon; 501E-saxophone; 501F-French horn; 501G-trumpet; 501H-trombone; 501I-euphonium; 501J-tuba; 501K-percussion; 501L-harpsichord; 501N-classical guitar; 501O-organ; 501P-piano; 501R-violin; 501S-violola; 501T-violoncello; 501U-double bass; 501V-voice; 501W-service playing; 501Y-conducting; 501Z-jazz. Repeatable for credit. Not auditable.

**MUSC 501A - Secondary Applied Music/ Flute/ Piccolo (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 501B - Secondary Applied Music/ Oboe/ English Horn (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 501C - Secondary Applied Music/ Clarinet (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 501D - Secondary Applied Music/ Bassoon (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 501E - Secondary Applied Music/ Saxophone (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 501F - Secondary Applied Music/ French Horn (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 501G - Secondary Applied Music/ Trumpet (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 501H - Secondary Applied Music/ Trombone (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 501I - Secondary Applied Music/ Euphonium (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 501J - Secondary Applied Music/ Tuba (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 501K - Secondary Applied Music/ Percussion (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 501L - Secondary Applied Music/ Harpsichord (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 501N - Secondary Applied Music/ Classical Guitar (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 501O - Secondary Applied Music/ Organ (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 501P - Secondary Applied Music/ Piano (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 501Q - Secondary Applied Music/ Harp (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 501R - Secondary Applied Music/ Violin (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 501S - Secondary Applied Music/Viola (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 501T - Secondary Applied Music/ Violoncello (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 501U - Secondary Applied Music/ Double Bass (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 501V - Secondary Applied Music/ Voice (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 501W - Secondary Applied Music/ Service Playing (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 501Y - Secondary Applied Music/ Conducting (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 501Z - Secondary Applied Music/ Jazz (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 505 - Violin Scales and Technique (2 Credits)**

Improving and refining left hand and right hand technique on the violin through the use of scales.

**MUSC 511A - Applied Music/ Flute/ Piccolo (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 511B - Applied Music/ Oboe/ English Horn (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 511C - Applied Music/ Clarinet (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 511D - Applied Music/ Bassoon (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 511E - Applied Music/ Saxophone (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 511F - Applied Music/ French Horn (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 511G - Applied Music/ Trumpet (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 511H - Applied Music/ Trombone (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 511I - Applied Music/ Euphonium (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 511J - Applied Music/ Tuba (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 511K - Applied Music/ Percussion (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 511L - Applied Music/ Harpsichord (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 511N - Applied Music/ Classical Guitar (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 511O - Applied Music/ Organ (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 511P - Applied Music/ Piano (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 511Q - Applied Music/ Harp (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 511R - Applied Music/ Violin (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 511S - Applied Music/ Viola (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 511T - Applied Music/ Violoncello (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 511U - Applied Music/ Double Bass (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 511V - Applied Music/ Voice (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 511W - Applied Music/ Service Playing (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 511Y - Applied Music/ Conducting (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 511Z - Applied Music/ Jazz (1-2 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 515 - Orchestration (3 Credits)**

Instrumentation and orchestration; possibilities and limitations idiomatic to specific orchestral instruments and ensemble combinations. Not auditable.

**MUSC 516 - Composition (3 Credits)**

Private study in music composition; may be repeated. Not auditable.  
**Prerequisites:** MUSC 417 or equivalent experience.

**MUSC 518 - Form and Analysis (3 Credits)**

Examination of fundamental principles of musical forms; analysis of representative tonal works. Not auditable.

**MUSC 520 - Studio Arranging and Composition (3 Credits)**

Instruction and practice in arranging and composing in various jazz and commercial music styles and genres. May be repeated for credit. Not auditable.

**MUSC 523 - Techniques and Materials of Tonal Music (3 Credits)**

Study of the techniques and materials of tonal harmony and voice leading with integrated ear-training component. Not auditable.

**MUSC 525 - Post-Tonal Music Theory (3 Credits)**

Studies in post-tonal theoretical techniques and analysis. Not auditable.  
**Prerequisites:** MUSC 216.

**MUSC 526 - Analytical Studies (3 Credits)**

Analytical techniques applied to music of a particular style, period, or genre. May be repeated for a total of 9 credits. Topic for any semester to be announced by title in the schedule of classes. Not auditable.

**MUSC 528 - Seminar in Music Theory (3 Credits)**

Advanced studies in music theory. Individual projects. Three meetings per week. Not auditable.

**MUSC 529 - Eighteenth-Century Counterpoint (3 Credits)**

Analysis and writing in contrapuntal forms with emphasis on the style of Bach. Not auditable.

**MUSC 530 - Sixteenth-Century Counterpoint (3 Credits)**

Analysis and writing in contrapuntal forms with emphasis on the style of Palestrina. Not auditable.

**MUSC 540 - Projects in Computer Music (1-3 Credits)**

Directed study in computer-music composition or research. Not auditable.

**Prerequisites:** MUSC 336.

**MUSC 543 - Song Literature (3 Credits)**

A study of the development of the solo art song, illustrated by major works of the song writers of all major nationalities. Not auditable.

**MUSC 544 - Topics in Music History (3 Credits)**

Topic for any semester to be announced by title in the schedule of classes. May be repeated for a total of nine credits. Not auditable.

**MUSC 545 - Survey of the Opera (3 Credits)**

A survey of the literature of Classic, Romantic, and modern opera, with special attention given to the recognition of the best-known works in each school. Recordings. Open to all students as an elective. Not auditable.

**MUSC 548 - Orchestra Literature (3 Credits)**

Symphony, concerto, tone poem, and other symphonic works from the Classic, Romantic, and modern repertory. Changing concepts of orchestration. Not auditable.

**MUSC 549 - Survey of Chamber Music (3 Credits)**

The literature for small instrumental ensembles from the Baroque era to the present. The string quartet, divertimento, keyboard-accompanied sonata, etc. Not auditable.

**MUSC 555 - World Music (3 Credits)**

Rhythms, scales, forms, and instrument types basic to all music. European and American folk song, African and Native American tribal music, Asian music. Not auditable.

**Prerequisites:** MUSC 110 or equivalent.

**Graduation with Leadership Distinction:** GLD: Global Learning

**MUSC 557 - American Music (3 Credits)**

Survey of the music composed in the United States from the colonial period to the present. The influences of European, African, Indian, and South American musical styles. Not auditable.

**MUSC 558 - Piano Literature I (3 Credits)**

Standard piano literature including major masterpieces from 1700 to 1850. Emphasis on instrumental and stylistic developments, and historical and theoretical background for interpreting the literature of the piano. Not auditable.

**MUSC 559 - Piano Literature II (3 Credits)**

Standard piano literature including major masterpieces from 1850 to present. Emphasis on instrumental and stylistic developments, and historical and theoretical background for interpreting the literature of the piano. Not auditable.

**MUSC 560 - Renaissance Music (3 Credits)**

Western music from ca. 1300 to the early Baroque; vocal and instrumental forms, national schools, and performance practices. Not auditable.

**Prerequisites:** MUSC 353, MUSC 354.

**MUSC 561 - Music of the Baroque (3 Credits)**

Music from 1600 to 1750, including Monteverdi and Schutz through Handel and Bach. Not auditable.

**Prerequisites:** MUSC 353, MUSC 354.

**MUSC 562 - Music of the Classical Period (3 Credits)**

The works of Haydn, Mozart, and Beethoven; the music of their predecessors and contemporaries; the characteristics of the Viennese classical style. Not auditable.

**Prerequisites:** MUSC 353, MUSC 354.

**MUSC 563 - Romantic Music (3 Credits)**

The music of the 19th and early 20th centuries; the relationship of music to other arts in works such as Schubert's songs, Wagner's drama, and Berlioz' program symphony. Not auditable.

**Prerequisites:** MUSC 353, MUSC 354.

**MUSC 564 - Music of the 20th Century (3 Credits)**

Music from 1900 to the present; major trends in contemporary music. Not auditable.

**Prerequisites:** MUSC 353, MUSC 354.

**MUSC 565 - Advanced Audio Recording Techniques (3 Credits)**

Multi-microphone and ambisonic stereo recording techniques; multi-track recording, signal processing and audio production; digital audio. Studio and field experience. Not auditable.

**Prerequisites:** MUSC 365.

**MUSC 566 - Fundamentals of Sound Use for Media (3 Credits)**

Music for use in media; midi applications and synchronization methods using time code; direct-to-hard-disc tapeless audio recording software. Not auditable.

**Prerequisites:** MUSC 565.

**MUSC 567 - Recording Studio Techniques (3 Credits)**

Technology and techniques in the recording studio including use of equalizers, limiters, reverberators, compressors, the mixing console, multi-track recording, microphone techniques, and basic acoustics related to the instrumental and vocal recording process. Not auditable.

**Prerequisites:** MUSC 564, MUSC 565.

**MUSC 569 - Intermediate Piano Accompanying (3 Credits)**

Approaches to specific problems in vocal and instrumental accompanying; supervised accompanying in class. Advanced work for experienced students. Not auditable.

**MUSC 570 - Italian and Latin Diction (2 Credits)**

Techniques of pronunciation, phonetics, and international phonetic alphabet as applied to standard vocal repertory, with emphasis on Italian and Latin languages. Not auditable.

**MUSC 571 - Digital Audio Technology (3 Credits)**

A study of the theory and practice of digital audio technology including analog to digital conversion, digital storage, error correction, transmission, basic digital signal processing, and synchronization.

**Prerequisites:** MUSC 365.

**MUSC 572 - Advanced Audio Topics (3 Credits)**

A study of the theory and practice of audio topics such as digital signal processing, psychoacoustics, data compression, sound reinforcement systems, wireless transmission, large scale system integration, and emerging technologies.

**MUSC 573 - Performance Pedagogy I (3 Credits)**

Basic concepts, techniques and materials for teaching a specific instrument. Not auditable.

**MUSC 573L - Pedagogy Laboratory (2 Credits)**

Directed teaching in laboratory and private settings. Not auditable.  
**Corequisite:** MUSC 573 or MUSC 574.

**Experiential Learning:** Experiential Learning Opportunity

**MUSC 574 - Performance Pedagogy II (3 Credits)**

Basic concepts, techniques and materials for teaching a specific instrument intermediate studies. Not auditable.

**MUSC 574L - Pedagogy Laboratory (2 Credits)**

Directed teaching in laboratory and private settings. Not auditable.  
**Corequisite:** MUSC 573 or MUSC 574.

**MUSC 575 - Directed Teaching in Pedagogy I (3 Credits)**

Supervised teaching in a performance area. Not auditable.

**MUSC 575L - Pedagogy Laboratory (2 Credits)**

Directed teaching in laboratory and private settings. Not auditable.  
**Corequisite:** MUSC 575.

**MUSC 576 - Teaching in Pedagogy II (3 Credits)**

Supervised teaching in a performance area. Course may be repeated for credit (6 credits total). Not auditable.

**MUSC 576L - Pedagogy Laboratory (1 Credit)**

Practical experience in preparing lesson plans and teaching theory-performance classes for precollege piano students on electronic and acoustical instruments. May be repeated for credit. Not auditable.

**MUSC 577 - Vocal Pedagogy (2 Credits)**

Anatomy and function of the singing voice with practical application to teaching. Not auditable.

**MUSC 578 - German and English Diction (2 Credits)**

Techniques of pronunciation for singing in German and English. Not auditable.

**Prerequisites:** C or better in MUSC 570.

**MUSC 579 - French Diction (2 Credits)**

Techniques of pronunciation for singing in French. Not auditable.

**Prerequisites:** C or better in MUSC 570.

**MUSC 580 - Music & Arts Entrepreneurship (3 Credits)**

Entrepreneurial skills and context for arts-based careers and business ventures. Students develop arts projects related to their interests.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

**MUSC 581 - The Alexander Technique (2 Credits)**

Theoretical/experimental exploration of major body systems and developmental movements to bring more articulation to the body and more awareness and physical ease in performance. For music and education students. Not auditable.

**MUSC 582 - Music and Money (3 Credits)**

A survey of the for-profit and non-profit music economies and the broader policy that drives these economies. Restricted to Music majors.

**MUSC 583 - Music and Worship (3 Credits)**

The selection and leadership of music in the church service; music for the rural church; selecting and directing anthems and service music for the nonprofessional church choir; the transition from psalmody to hymnody in the 18th century; the Anglican Chant and the Lutheran Chorale. Not auditable.

**MUSC 584 - Workshop in Music (1-3 Credits)**

Selected topics in music. May be repeated as topic varies. Not auditable.

**MUSC 585 - Organ Literature I (3 Credits)**

Organ literature and registration from antiquity to 1750. Not auditable.

**MUSC 586 - Organ Literature II (3 Credits)**

Organ literature and registration 1750 to the present. Not auditable.

**MUSC 587 - Repertories of Lute, Vihuela, and Guitar (3 Credits)**

Solo literature for plucked, fretted instruments from the Renaissance into the 20th century. National styles, traits, and technical innovations included. Not auditable. Admission to upper division guitar study.

**MUSC 588 - Business of Music (3 Credits)**

Seminar on the business of music. Not auditable.

**MUSC 589 - Arts Management (3 Credits)**

Management techniques for organizations with a musical component such as: orchestra, opera, ballet, artist series. Not auditable.

**MUSC 590 - Seminar in Music Entrepreneurship (3 Credits)**

Analyses of music businesses through the use of case studies. Restricted to Music majors.

**Prerequisites:** MUSC 582, MKTG 350.

**MUSC 591 - Music Leadership Practicum (3 Credits)**

A practicum to design and execute an entrepreneurial music leadership project in Columbia, South Carolina. Restricted to Music majors.

**Prerequisites:** MUSC 590.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

**MUSC 592 - 21st Century Musician (3 Credits)**

Issues confronting the professional performing musician. Topics will include performance-based income models and opportunities, program development, and promotional and supporting materials. Restricted to School of Music students.

**MUSC 593 - Arts Marketing (3 Credits)**

Arts marketing program challenges, arts organizations, building the successful private studio, marketing plans, social media and guerilla marketing, and market research.

**MUSC 594 - Independent Music Teaching Business (3 Credits)**

A study of all aspects of the creation and maintenance of a viable independent music teaching business. Restricted to School of Music students.

**MUSC 595 - Community Engagement Through Music (2 Credits)**

Community engagement as it relates to music, with a focus on developing practical skills in creating engaging, interactive performances for various audiences.

**Experiential Learning:** Experiential Learning Opportunity

**MUSC 599 - Music Business Internship (1-3 Credits)**

Supervised work experience as approved by area program director. May be repeated up to 6 credits. Not auditable.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Internships

**MUSC 700 - Independent Study (1-3 Credits)**

This course is designed for graduate students who wish to pursue a study of various areas of music according to their particular needs. Not auditable.

**MUSC 707 - Music Bibliography and Research (2 Credits)**

Reference works, discographies, periodicals, thematic catalogs, and other sources. Research methods and materials. Not auditable.

**MUSC 710 - Vocal Coaching (1-2 Credits)**

Advanced study of stylistic, interpretive, linguistic, and other performance issues in solo operatic, oratorio, and recital repertoire for singers. Repeatable for credit. Not auditable.

**MUSC 711 - Graduate Applied Music (1-4 Credits)**

Courses consist of individual instruction including individualized assignments and regular private instruction and review. Not auditable. 711A-flute/piccolo; 711B-oboe/English horn; 711C-clarinet; 711D-bassoon; 711E-saxophone; 711F-French horn; 711G-trumpet; 711H-trombone; 711I-euphonium; 711J-tuba; 711K-percussion; 711L-harpsichord; 711N-classic guitar; 711O-organ; 711P-piano; 711R-violin; 711S-violoncello; 711T-violoncello; 711U-double bass; 711V-voice; 711W-service playing; 711Y-conducting; 711Z-jazz. Repeatable for credit.

**MUSC 711A - Graduate Applied Music/ Flute/ Piccolo (1-4 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 711B - Graduate Applied Music/ Oboe/ English Horn (1-4 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 711C - Graduate Applied Music/ Clarinet (1-4 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 711D - Graduate Applied Music/ Bassoon (1-4 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 711E - Graduate Applied Music/ Saxophone (1-4 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 711F - Graduate Applied Music/ French Horn (1-4 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 711G - Graduate Applied Music/ Trumpet (1-4 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 711H - Graduate Applied Music/ Trombone (1-4 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 711I - Graduate Applied Music/ Euphonium (1-4 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 711J - Graduate Applied Music/ Tuba (1-4 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 711K - Graduate Applied Music/ Percussion (1-4 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 711L - Graduate Applied Music/ Harpsichord (1-4 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 711N - Graduate Applied Music/ Classical Guitar (1-4 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 711O - Graduate Applied Music/ Organ (1-4 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 711P - Graduate Applied Music/ Piano (1-4 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 711R - Graduate Applied Music/ Violin (1-4 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 711S - Graduate Applied Music/ Viola (1-4 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 711T - Graduate Applied Music/ Violoncello (1-4 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 711U - Graduate Applied/Double Bass (1-4 Credits)**

Note: Courses consist of individual instruction including individualized assignments and regular private instruction and review. A-flute/piccolo; B-oboe/English horn; C-clarinet; D-bassoon; E-saxophone; F-French horn; G-trumpet; H-trombone; I-euphonium; J-tuba; K-percussion; L-harpsichord; N-classic guitar; O-organ; P-piano; R-violin; S-violoncello; U-double bass; V-voice; W-service playing; Y-conducting; Z-jazz. Subdiscipline: Music (Applied Music)

**MUSC 711V - Graduate Applied Music/ Voice (1-4 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 711W - Graduate Applied Music/ Service Playing (1-4 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 711Y - Graduate Applied Music/ Conducting (1-4 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 711Z - Graduate Applied Music/ Jazz (1-4 Credits)**

Course consists of individual instruction including individualized assignments and regular private instruction and review. Not auditable.

**MUSC 713 - Advanced Jazz Theory (3 Credits)**

Harmonic, melodic, rhythmic, and structural concepts related to advanced jazz improvisation and composition. In-depth analysis of selected improvisations of artists and contemporary jazz styles.

**MUSC 714 - Advanced Jazz Arranging (3 Credits)**

Advanced orchestration, compositional development, cross-ensemble writing, extended forms, expanded harmonic and rhythmic vocabulary in the various contemporary jazz styles.

**Prerequisites:** MUSC 520 or equivalent.

**MUSC 715 - Analysis and Performance (3 Credits)**

Performance and interpretive considerations through the study of music on a technical basis. Observations of unity/variety and tension/repose, the interaction of music's materials, and the sources for growth and shape. Not auditable.

**MUSC 716 - Composition (1-3 Credits)**

Original composition. May be repeated for credit. Not auditable.

**MUSC 717 - Advanced Orchestration (3 Credits)**

Advanced orchestral arranging and score study, principles or score identification, and historical survey of orchestration practices and styles.

**MUSC 718 - Band Arranging (3 Credits)**

Characteristics and use of individual instruments; writing for separate choirs, chamber and solo writing; scoring piano, organ, and orchestra music for band. Not auditable.

**MUSC 719 - Choral Arranging (3 Credits)**

Practice in arranging and composing in the choral medium with emphasis on choral groups of the junior and senior high schools. Not auditable.

**MUSC 720 - Pedagogy of Music Theory (3 Credits)**

Concepts, techniques, and materials for teaching music theory. Not auditable.

**MUSC 721 - Tonality in the Twentieth Century (3 Credits)**

Study of the theoretical and analytical writings of Arnold Schoenberg. Students will be able to describe and compare basic elements of music theory, including foundational principles of harmony and voice leading, in a variety of musical styles.

**MUSC 722 - Symphonic Analysis (3 Credits)**

Analysis of orchestral music from the 17th to the 20th centuries with respect to form, tonal language, and orchestration. Not auditable.

**MUSC 723 - Baroque Styles (3 Credits)**

Baroque styles, forms, and performance practices. Not auditable.

**MUSC 724 - Contemporary Styles (3 Credits)**

A study of the techniques of 20th-century composition through writing in individual styles. The first semester (MUSC 724) is concerned with composers such as Bartok, Stravinsky, and Schoenberg. Not auditable.

**MUSC 725 - Contemporary Styles (3 Credits)**

MUSC 725 concentrates on more recent music. Not auditable.

**MUSC 726 - Topics in Music Theory (3 Credits)**

Analytical techniques, advanced orchestration, arranging for the marching band, or other selected topics. May be repeated as topic varies. Not auditable.

**MUSC 727 - Schenkerian Analysis (3 Credits)**

Study of analytical concepts developed by Heinrich Schenker, and their application to analysis of tonal music.

**MUSC 728 - Score Reading (1-3 Credits)**

Practice in reducing full scores at the piano. Repeatable for a maximum of nine credit hours. Not auditable.

**MUSC 729 - Contrapuntal Techniques (3 Credits)**

Contrapuntal procedures from the 16th through the 20th centuries.

**MUSC 730 - Polyphonic Music Before 1600 (3 Credits)**

Notation and theory of pre-tonal polyphonic music. Not auditable.

**MUSC 731 - Contemporary Experimental Music (3 Credits)**

Survey of iconoclastic and visionary contemporary composers whose music and ideas fall mostly outside mainstream classical and popular genres.

**MUSC 733 - Advanced Conducting (3 Credits)**

Study of conducting problems in selected choral or instrumental works. 733A-choral; 733B-instrumental. Not auditable.

**Prerequisites:** One year of study in conducting.

**MUSC 733A - Advanced Conducting/ Choral (3 Credits)**

Study of conducting problems in selected choral or instrumental works. Not auditable.

**Prerequisites:** One year of study in conducting or approval of instructor

**MUSC 733B - Advanced Conducting/ Instrumental (3 Credits)**

Study of conducting problems in selected choral or instrumental works. Not auditable.

**Prerequisites:** One year of study in conducting or approval of instructor

**MUSC 734 - Ensemble (0-1 Credits)**

Experience in a musical ensemble such as orchestra, graduate chorus, or jazz. Repeatable for credit. Not auditable.

**MUSC 734A - Ensemble - Symphonic Band (0-1 Credits)**

Experience in a musical ensemble such as orchestra, graduate chorus, or jazz. Repeatable for credit. Not auditable.

**MUSC 734B - Ensemble - Wind Ensemble (0-1 Credits)**

Experience in a musical ensemble such as orchestra, graduate chorus, or jazz. Repeatable for credit. Not auditable.

**MUSC 734C - Ensemble - Graduate Vocal (0-1 Credits)**

Experience in a musical ensemble such as orchestra, graduate chorus, or jazz. Repeatable for credit. Not auditable.

**MUSC 734D - Ensemble - Percussion (0-1 Credits)**

Experience in a musical ensemble such as orchestra, graduate chorus, or jazz. Repeatable for credit. Not auditable.

**MUSC 734E - Ensemble - Left Bank Jazz (0-1 Credits)**

Experience in a musical ensemble such as orchestra, graduate chorus, or jazz. Repeatable for credit. Not Auditable.

**MUSC 734L - Ensemble - Guitar (0-1 Credits)**

Experience in a musical ensemble such as orchestra, graduate chorus, or jazz. Repeatable for credit. Not auditable.

**MUSC 734O - Ensemble - Opera Chorus (0-1 Credits)**

Experience in a musical ensemble such as orchestra, graduate chorus, or jazz. Repeatable for credit. Not auditable.

**MUSC 734S - Ensemble - Symphony Orchestra (0-1 Credits)**

Experience in a musical ensemble such as orchestra, graduate chorus, or jazz. Repeatable for credit. Not auditable.

**MUSC 734T - Ensemble - Concert Choir (0-1 Credits)**

Experience in a musical ensemble such as orchestra, graduate chorus, or jazz. Repeatable for credit. Not auditable.

**MUSC 734U - Ensemble - Opera Orchestra (0-1 Credits)**

Experience in a musical ensemble such as orchestra, graduate chorus, or jazz. Repeatable for credit. Not auditable.

**MUSC 734V - Ensemble - Chamber Orchestra (0-1 Credits)**

Experience in a musical ensemble such as orchestra, graduate chorus, or jazz. Repeatable for credit. Not auditable.

**MUSC 735A - Chamber Music - Woodwinds (0-1 Credits)**

Experience in a small musical ensemble such as a string quartet or woodwind quintet. Repeatable for credit. Not auditable.

**MUSC 735B - Chamber Music - Brass (0-1 Credits)**

Experience in a small musical ensemble such as a string quartet or woodwind quintet. Repeatable for credit. Not auditable.

**MUSC 735C - Chamber Music - Contemporary (0-1 Credits)**

Experience in a small musical ensemble such as a string quartet or woodwind quintet. Repeatable for credit. Not auditable.

**MUSC 735D - Chamber Music - Percussion (0-1 Credits)**

Experience in a small musical ensemble such as a string quartet or woodwind quintet. Repeatable for credit. Not auditable.

**MUSC 735E - Ensemble - Saxophone (0-1 Credits)**

Experience in a musical ensemble such as orchestra, graduate chorus, or jazz. Repeatable for credit. Not auditable.

**MUSC 735I - Chamber Music - Strings (0-1 Credits)**

Experience in a small musical ensemble such as a string quartet or woodwind quintet. Repeatable for credit. Not auditable.



**MUSC 735J - Chamber Music - Jazz Combo (0-1 Credits)**

Experience in a small musical ensemble such as a string quartet or woodwind quintet. Repeatable for credit. Not auditable.

**MUSC 735L - Ensemble - Guitar (0-1 Credits)**

Experience in a musical ensemble such as orchestra, graduate chorus, or jazz. Repeatable for credit. Not auditable.

**MUSC 735P - Chamber Music - Piano (0-1 Credits)**

Experience in a small musical ensemble such as a string quartet or woodwind quintet. Repeatable for credit. Not auditable.

**MUSC 735R - Chamber Music - Accompanying (0-1 Credits)**

Experience in a small musical ensemble such as a string quartet or woodwind quintet. Repeatable for credit. Not auditable.

**MUSC 736 - Conductors Institute (1-3 Credits)**

Practicum in conducting and literature. Limited to participants in the Conductors Institute.

**MUSC 737 - Advanced Projects in Computer Music (1-4 Credits)**

Advanced computer-music research or computer-generated tape composition.

**MUSC 740 - Music Literature (1-3 Credits)**

Study of the literature of a specific performance area. Repeatable for credit, 6 hrs max. Not auditable.

**MUSC 740A - Music Literature/ Flute/ Piccolo (1-3 Credits)**

Study of the literature of a specific performance area. Repeatable for credit. Not auditable. Note: 6 hrs max

**MUSC 740B - Music Literature/ Oboe/ English Horn (1-3 Credits)**

Study of the literature of a specific performance area. Repeatable for credit. Not auditable. Note: 6 hrs max

**MUSC 740C - Music Literature/ Clarinet (1-3 Credits)**

Study of the literature of a specific performance area. Repeatable for credit. Not auditable. Note: 6 hrs max

**MUSC 740D - Music Literature/ Bassoon (1-3 Credits)**

Study of the literature of a specific performance area. Repeatable for credit. Not auditable. Note: 6 hrs max

**MUSC 740E - Music Literature/ Saxophone (1-3 Credits)**

Study of the literature of a specific performance area. Repeatable for credit. Not auditable. Note: 6 hrs max

**MUSC 740F - Music Literature/ French Horn (1-3 Credits)**

Study of the literature of a specific performance area. Repeatable for credit. Not auditable. Note: 6 hrs max

**MUSC 740G - Music Literature/ Trumpet (1-3 Credits)**

Study of the literature of a specific performance area. Repeatable for credit. Not auditable. Note: 6 hrs max

**MUSC 740H - Music Literature/ Trombone (1-3 Credits)**

Study of the literature of a specific performance area. Repeatable for credit. Not auditable. Note: 6 hrs max

**MUSC 740I - Music Literature/ Euphonium (1-3 Credits)**

Study of the literature of a specific performance area. Repeatable for credit. Not auditable. Note: 6 hrs max

**MUSC 740J - Music Literature/ Tuba (1-3 Credits)**

Study of the literature of a specific performance area. Repeatable for credit. Not auditable. Note: 6 hrs max

**MUSC 740K - Music Literature/ Percussion (1-3 Credits)**

Study of the literature of a specific performance area. Repeatable for credit. Not auditable. Note: 6 hrs max

**MUSC 740L - Music Literature/ Harpsichord (1-3 Credits)**

Study of the literature of a specific performance area. Repeatable for credit. Not auditable. Note: 6 hrs max

**MUSC 740N - Music Literature/ Classical Guitar (1-3 Credits)**

Study of the literature of a specific performance area. Repeatable for credit. Not auditable. Note: 6 hrs max

**MUSC 740O - Music Literature/ Organ (1-3 Credits)**

Study of the literature of a specific performance area. Repeatable for credit. Not auditable. Note: 6 hrs max

**MUSC 740P - Music Literature/ Piano (1-3 Credits)**

Study of the literature of a specific performance area. Repeatable for credit. Not auditable. Note: 6 hrs max

**MUSC 740R - Music Literature/ Violin (1-3 Credits)**

Study of the literature of a specific performance area. Repeatable for credit. Not auditable. Note: 6 hrs max

**MUSC 740S - Music Literature/ Viola (1-3 Credits)**

Study of the literature of a specific performance area. Repeatable for credit. Not auditable. Note: 6 hrs max

**MUSC 740T - Music Literature/ Violoncello (1-3 Credits)**

Study of the literature of a specific performance area. Repeatable for credit. Not auditable. Note: 6 hrs max

**MUSC 740U - Music Literature/ Double Bass (1-3 Credits)**

Study of the literature of a specific performance area. Repeatable for credit. Not auditable. Note: 6 hrs max

**MUSC 740V - Music Literature/ Voice (1-3 Credits)**

Study of the literature of a specific performance area. Repeatable for credit. Not auditable. Note: 6 hrs max

**MUSC 740W - Music Literature/ Service Playing (1-3 Credits)**

Study of the literature of a specific performance area. Repeatable for credit. Not auditable. Note: 6 hrs max

**MUSC 740Y - Music Literature/ Conducting (1-3 Credits)**

Study of the literature of a specific performance area. Repeatable for credit. Not auditable. Note: 6 hrs max

**MUSC 740Z - Music Literature/ Jazz (1-3 Credits)**

Study of the literature of a specific performance area. Repeatable for credit. Not auditable. Note: 6 hrs max

**MUSC 743 - Seminar in Music History (3 Credits)**

For graduate students in music and music education. Methods of historical research, and problems of aesthetics and criticism.

**MUSC 744 - Topics in Music History (3 Credits)**

Selected topics such as French music in the 19th century, Richard Wagner, and mensural notation. May be repeated as the topic varies; 12 hrs max.

**MUSC 746 - Choral Literature (3 Credits)**

Choral literature from the Renaissance to the present. Study of smaller forms in the context of composers' contributions to the literature.

**MUSC 747 - Advanced Music Research (2 Credits)**

Development of advanced music research skills. Preparation for writing graduate research projects.

**Prerequisites:** MUSC 707.

**MUSC 748 - Major Choral Works (3 Credits)**

A survey of major oratorios, cantatas, and masses.

**MUSC 754 - Ancient, Oriental, and Western Medieval Music (3 Credits)**

Practices and theories of music in ancient high civilizations. Oriental, Greek, Roman, Jewish, and early Christian music, up to ca. AD 1300.

**MUSC 755 - Renaissance Music (3 Credits)**

Music from 1400 to 1600, including an introductory study on polyphonic styles of the later Medieval period; evolution of musical styles within the context of Renaissance Western European culture.

**MUSC 756 - Music of the Baroque (3 Credits)**

Music from 1600 to 1750 including representative composers from Monteverdi's generation through Bach and Handel.

**MUSC 757 - Music of the Classical Period (3 Credits)**

The works of Gluck, Haydn, Mozart, Beethoven and their contemporaries; formation of the "Viennese" Classical idiom and its most important forms and genres.

**MUSC 758 - Romantic Music (3 Credits)**

The music of the nineteenth and early twentieth centuries; the relationship of music to other arts; works from Schubert and Rossini to Mahler, Strauss, and Debussy.

**MUSC 759 - Music Since 1900 (3 Credits)**

Music from the early twentieth century to the present; major trends in contemporary music.

**MUSC 764L - Ensemble - Guitar (0-1 Credits)**

Experience in a musical ensemble such as orchestra, graduate chorus, or jazz. Repeatable for credit. Suffixes: B-Wind Ensemble, C-Graduate Vocal Ensemble, D-Percussion, E-Left Bank Jazz, L-Guitar, S-Symphony Orchestra, T-Concert Choir, V-Chamber Orchestra. Subdiscipline: Music (Musical Organizations)

**MUSC 766 - Topics in Church Music (1-3 Credits)**

Selected topics such as hymnology, church-choir literature and techniques, and church-music administration. May be repeated for a maximum of 12 hours as topic varies.

**MUSC 767 - Pedagogy of Group Piano (3 Credits)**

Methodology and survey of materials for beginning through intermediate piano study in groups.

**MUSC 769 - Advanced Piano Accompanying (3 Credits)**

Continuation of MUSC 569. Approaches to specific problems in vocal and instrumental accompanying; supervised accompanying in class.

**MUSC 770 - Suzuki String Pedagogy I (3 Credits)**

An examination of Shin'ichi Suzuki's philosophy and approach to Talent Education, parent education, laying the foundation (pre-twinkle) for studies in literature and techniques in Suzuki Violin books 1 and 2. Congruent with Suzuki Association of the American guidelines. Congruent with guidelines of the Suzuki Association of the Americans.

**MUSC 771 - Suzuki String Pedagogy II (3 Credits)**

An examination of the teaching points in Suzuki Violin books 3 and 4, including scales, arpeggios, etudes, and other supplementary material. Congruent with Suzuki Association of the Americas guidelines.

**MUSC 773 - Seminar in Performance Pedagogy I (3 Credits)**

Problems in piano pedagogy at the advanced level and directed teaching.

**MUSC 774 - Seminar in Performance Pedagogy II (3 Credits)**

Problems in piano pedagogy at the advanced level and directed teaching. Course may be repeated for a total of 9 credit hours.

**MUSC 775 - Topics in Piano Pedagogy and Literature (3 Credits)**

For pianists only. Topics such as Mozart sonatas, Beethoven sonatas, piano music of Debussy. May be repeated for credit as topic varies, 12 hrs max.

**MUSC 776 - Special Topics in Piano Pedagogy (3 Credits)**

Content varies by title. May be repeated as title varies.

**MUSC 777 - Advanced Vocal Pedagogy (3 Credits)**

Advanced study of the anatomy and function of the singing voice with application to the diagnosis and correction of problems in singing.

**Prerequisites:** MUSC 577.

**MUSC 778 - Advanced Diction (2 Credits)**

Pronunciation, placement, and rhythm of Italian, French, and German.

**MUSC 780 - Opera Theater (1 Credit)**

Study of selected operatic characters from a historical, psychological, and physical perspective.

**MUSC 781 - Role Preparation (1 Credit)**

Study of operatic role(s), with attention given to rhythmic accuracy, style, language/diction, translations, and interpretation.

**MUSC 782 - Opera Production (1 Credit)**

Supervised preparation and production of an opera.

**MUSC 783 - College Music Teaching (3 Credits)**

Trends in higher education, responsibilities of college teachers, strategies for effective teaching, the academic job search, and tenure and promotion processes.

**MUSC 784 - Suzuki Practicum I (1 Credit)**

Practical application of the teaching points in Suzuki Violin books 1 and 2. Includes observations of lessons and supervised teaching.

**MUSC 785 - Suzuki Practicum II (1 Credit)**

Practical application of the teaching points in Suzuki Violin books 3 and 4. Includes observations of lessons and supervised teaching.

**MUSC 786 - Advanced Jazz Improvisation (3 Credits)**

Applications of harmonic, melodic, and rhythmic concepts for the advanced jazz improvisation student. Exploration of different jazz improvisation areas such as "free," avant-garde, polytonal, and serial.

**MUSC 787 - Special Topics in Music (1-3 Credits)**

Content varies by title. May be repeated for credit as topics vary for a total of 12 credits.

**MUSC 790 - Composition Recital (1 Credit)**

Presentation of the student composer's work in a suitable professional setting.

**MUSC 793 - Opera Role (1 Credit)**

Public performance of a major opera role.

**MUSC 794 - Concerto Recital (1 Credit)**

Public performance of a major concerto with orchestra or appropriate ensemble.

**MUSC 795 - Chamber Recital (1 Credit)**

Performances of a public recital of chamber music.

**MUSC 796 - Solo Recital (1 Credit)**

Performance of a public recital in the student's performance area.

**MUSC 799 - Thesis Preparation (1-3 Credits)**

CL: 2020.

**MUSC 801 - Advanced Performance Pedagogy (2 Credits)**

Applied music teaching at the college level. Observation in two or more studios. Teaching experience on an individual basis under the direction of applied faculty members. Repeatable for maximum of four credits.



**MUSC 811N - Doctoral Applied Music/Classic Guitar (1-4 Credits)**

Courses consist of individual instruction including individualized assignments and regular private instruction and review. 811A-flute/piccolo; 811B-oboe/English horn; 811C-clarinet; 811D-bassoon; 811E-saxophone; 811F-French horn; 811G-trumpet; 811H-trombone; 811I-euphonium; 811J-tuba; 811K-percussion; 811L-harpsichord; 811N-classic guitar; 811O-organ; 811P-piano; 811R-violin; 811S-violin; 811T-violoncello; 811U-double bass; 811V-voice; 811W-service playing; 811Y-conducting; 811Z-jazz. Repeatable for credit.

**MUSC 811O - Doctoral Applied Music/Organ (1-4 Credits)**

Courses consist of individual instruction including individualized assignments and regular private instruction and review. 811A-flute/piccolo; 811B-oboe/English horn; 811C-clarinet; 811D-bassoon; 811E-saxophone; 811F-French horn; 811G-trumpet; 811H-trombone; 811I-euphonium; 811J-tuba; 811K-percussion; 811L-harpsichord; 811N-classic guitar; 811O-organ; 811P-piano; 811R-violin; 811S-violin; 811T-violoncello; 811U-double bass; 811V-voice; 811W-service playing; 811Y-conducting; 811Z-jazz. Repeatable for credit.

**MUSC 811P - Doctoral Applied Music/Piano (1-4 Credits)**

Courses consist of individual instruction including individualized assignments and regular private instruction and review. 811A-flute/piccolo; 811B-oboe/English horn; 811C-clarinet; 811D-bassoon; 811E-saxophone; 811F-French horn; 811G-trumpet; 811H-trombone; 811I-euphonium; 811J-tuba; 811K-percussion; 811L-harpsichord; 811N-classic guitar; 811O-organ; 811P-piano; 811R-violin; 811S-violin; 811T-violoncello; 811U-double bass; 811V-voice; 811W-service playing; 811Y-conducting; 811Z-jazz. Repeatable for credit.

**MUSC 811R - Doctoral Applied Music/Violin (1-4 Credits)**

Courses consist of individual instruction including individualized assignments and regular private instruction and review. 811A-flute/piccolo; 811B-oboe/English horn; 811C-clarinet; 811D-bassoon; 811E-saxophone; 811F-French horn; 811G-trumpet; 811H-trombone; 811I-euphonium; 811J-tuba; 811K-percussion; 811L-harpsichord; 811N-classic guitar; 811O-organ; 811P-piano; 811R-violin; 811S-violin; 811T-violoncello; 811U-double bass; 811V-voice; 811W-service playing; 811Y-conducting; 811Z-jazz. Repeatable for credit.

**MUSC 811S - Doctoral Applied Music/Viola (1-4 Credits)**

Courses consist of individual instruction including individualized assignments and regular private instruction and review. 811A-flute/piccolo; 811B-oboe/English horn; 811C-clarinet; 811D-bassoon; 811E-saxophone; 811F-French horn; 811G-trumpet; 811H-trombone; 811I-euphonium; 811J-tuba; 811K-percussion; 811L-harpsichord; 811N-classic guitar; 811O-organ; 811P-piano; 811R-violin; 811S-violin; 811T-violoncello; 811U-double bass; 811V-voice; 811W-service playing; 811Y-conducting; 811Z-jazz. Repeatable for credit.

**MUSC 811T - Doctoral Applied Music/Violoncello (1-4 Credits)**

Courses consist of individual instruction including individualized assignments and regular private instruction and review. 811A-flute/piccolo; 811B-oboe/English horn; 811C-clarinet; 811D-bassoon; 811E-saxophone; 811F-French horn; 811G-trumpet; 811H-trombone; 811I-euphonium; 811J-tuba; 811K-percussion; 811L-harpsichord; 811N-classic guitar; 811O-organ; 811P-piano; 811R-violin; 811S-violin; 811T-violoncello; 811U-double bass; 811V-voice; 811W-service playing; 811Y-conducting; 811Z-jazz. Repeatable for credit.

**MUSC 811U - Doctoral Applied Music/Double Bass (1-4 Credits)**

Courses consist of individual instruction including individualized assignments and regular private instruction and review. 811A-flute/piccolo; 811B-oboe/English horn; 811C-clarinet; 811D-bassoon; 811E-saxophone; 811F-French horn; 811G-trumpet; 811H-trombone; 811I-euphonium; 811J-tuba; 811K-percussion; 811L-harpsichord; 811N-classic guitar; 811O-organ; 811P-piano; 811R-violin; 811S-violin; 811T-violoncello; 811U-double bass; 811V-voice; 811W-service playing; 811Y-conducting; 811Z-jazz. Repeatable for credit.

**MUSC 811V - Doctoral Applied Music/Voice (1-4 Credits)**

Courses consist of individual instruction including individualized assignments and regular private instruction and review. 811A-flute/piccolo; 811B-oboe/English horn; 811C-clarinet; 811D-bassoon; 811E-saxophone; 811F-French horn; 811G-trumpet; 811H-trombone; 811I-euphonium; 811J-tuba; 811K-percussion; 811L-harpsichord; 811N-classic guitar; 811O-organ; 811P-piano; 811R-violin; 811S-violin; 811T-violoncello; 811U-double bass; 811V-voice; 811W-service playing; 811Y-conducting; 811Z-jazz. Repeatable for credit.

**MUSC 811W - Doctoral Applied Music/Service Playing (1-4 Credits)**

Courses consist of individual instruction including individualized assignments and regular private instruction and review. 811A-flute/piccolo; 811B-oboe/English horn; 811C-clarinet; 811D-bassoon; 811E-saxophone; 811F-French horn; 811G-trumpet; 811H-trombone; 811I-euphonium; 811J-tuba; 811K-percussion; 811L-harpsichord; 811N-classic guitar; 811O-organ; 811P-piano; 811R-violin; 811S-violin; 811T-violoncello; 811U-double bass; 811V-voice; 811W-service playing; 811Y-conducting; 811Z-jazz. Repeatable for credit.

**MUSC 811Y - Doctoral Applied Music/Conducting (1-4 Credits)**

Courses consist of individual instruction including individualized assignments and regular private instruction and review. 811A-flute/piccolo; 811B-oboe/English horn; 811C-clarinet; 811D-bassoon; 811E-saxophone; 811F-French horn; 811G-trumpet; 811H-trombone; 811I-euphonium; 811J-tuba; 811K-percussion; 811L-harpsichord; 811N-classic guitar; 811O-organ; 811P-piano; 811R-violin; 811S-violin; 811T-violoncello; 811U-double bass; 811V-voice; 811W-service playing; 811Y-conducting; 811Z-jazz. Repeatable for credit.

**MUSC 811Z - Doctoral Applied Music/Jazz (1-4 Credits)**

Courses consist of individual instruction including individualized assignments and regular private instruction and review. 811A-flute/piccolo; 811B-oboe/English horn; 811C-clarinet; 811D-bassoon; 811E-saxophone; 811F-French horn; 811G-trumpet; 811H-trombone; 811I-euphonium; 811J-tuba; 811K-percussion; 811L-harpsichord; 811N-classic guitar; 811O-organ; 811P-piano; 811R-violin; 811S-violin; 811T-violoncello; 811U-double bass; 811V-voice; 811W-service playing; 811Y-conducting; 811Z-jazz. Repeatable for credit.

**MUSC 816 - Composition (1-3 Credits)**

Original composition. May be repeated for credit.

**MUSC 890 - Composition Recital (1 Credit)**

Presentation of predissertation doctoral compositions in a professional setting.

**MUSC 891 - Recital Preparation (1-3 Credits)**

CL: 2020.

**MUSC 892 - Lecture Recital (1 Credit)**

Public presentation of a lecture recital.

**MUSC 893 - Opera/Oratorio Role (1 Credit)**

Public performance of a major opera or oratorio role.

**MUSC 894 - Concerto Recital (1 Credit)**

Public performance of a major concerto with orchestra or appropriate ensemble.

**MUSC 895 - Chamber Recital (1 Credit)**

Performance of a public recital of chamber music.

**MUSC 896 - Solo Recital (1 Credit)**

Performance of a public recital in the student's primary performance area.

**MUSC 897 - Document Preparation (1-2 Credits)**

CL: 2020.

**MUSC 898 - Treatise Preparation (1-6 Credits)**

CL: 2020.

**MUSC 899 - Dissertation Preparation (1-12 Credits)**

CL: 2020.

## Music Education (MUED)

**MUED 533 - Methods for String Instruction I (2 Credits)**

Fundamentals of teaching orchestral stringed instruments in school string and orchestra classes. Emphasis on sequential instruction, materials, and classroom management.

**Prerequisites:** C or better in both MUED 104 and MUED 200.

**Corequisite:** MUED 533P.

**MUED 533P - Practicum in Methods of String Instruction I (1 Credit)**

Practical application of string methods and materials in public and community school settings. Not auditable.

**Corequisite:** MUED 533.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Internships

**MUED 534 - Methods of String Instruction II (2 Credits)**

Continued study of methods, materials, and concepts of teaching orchestral stringed instruments in school string and orchestra classes. Emphasis on rehearsal techniques and curricula.

**Prerequisites:** MUED 533, MUSC 101.

**Corequisite:** MUED 534P.

**MUED 534P - Practicum in Methods of String Instruction II (1 Credit)**

Practical application of string methods and materials in public and community school settings. Not auditable.

**Corequisite:** MUED 534.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Internships

**MUED 551 - The Middle School Band (2 Credits)**

Study of teaching materials, methods, literature, and educational practices used in middle school band settings.

**Prerequisites:** C or better in each of MUED 105, MUED 106, and MUED 200.

**MUED 552 - The High School Band (2 Credits)**

Study of teaching materials, methods, literature, and educational practices used in high school band settings.

**Prerequisites:** MUED 551.

**MUED 554 - Workshop in Music Education (1-3 Credits)**

Selected topics in music education. May be repeated as the topic varies. Credits 1-3 per registration; 12 maximum.

**MUED 555 - Integrating Music into the Elementary Classroom (3 Credits)**

Develop activities and learning plans that integrate music into language arts, math, science, social studies, ELA, and learning for students with special needs. Apply those lessons in practicums with children.

**MUED 557 - Wind Pedagogy II (2 Credits)**

Continued study of the issues in playing and teaching wind instruments in a heterogeneous class. Special study of problems unique to each woodwind and brass instrument regarding fingering and intonation.

**Prerequisites:** MUED 357 or admission to MAT (music) program.

**MUED 558 - Arranging for the Marching Band (2 Credits)**

Instruction and practice in arranging music for the marching band.

**MUED 564 - String Instrument Pedagogy (2 Credits)**

Principles and practices in teaching string instruments, including Suzuki and Rolland. Emphasis on teaching in the private studio.

**MUED 565 - Specialized Elementary Music Methods (2 Credits)**

Advanced study of Orff, Kodaly, Dalcroze, and Gordon music learning theories as applied in elementary schools.

**Prerequisites:** MUED 465.

**MUED 568 - Organization and Administration of Music Programs (2 Credits)**

Topics include materials and techniques of class teaching, equipment purchase, budgeting, recruiting, public relations, and the music library.

**Prerequisites:** C or better in MUED 200.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

**MUED 568P - Practicum in Instrumental Music (1 Credit)**

Practical application of instrumental methods and techniques in school settings. Not auditable.

**Corequisite:** MUED 568.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

**MUED 700 - Independent Study in Music Education (1-3 Credits)**

This course is designed for graduate students who wish to pursue a study of various areas of music education according to their particular needs.

**MUED 731 - Teaching Internship in Music (12 Credits)**

This course is designed to provide a full semester of field experience in the public school for Master of Arts in Teaching (music) degree participants. Not Auditable.

**Prerequisites:** Acceptance into Professional Program in Education.

**MUED 732 - Music Teaching Internship Seminar (3 Credits)**

A series of seminars designed to enhance the student teaching experience. Topics include classroom management, lesson planning, assessment, and curriculum development.

**Prerequisites:** MUED 731 and Acceptance into Professional Program in Education.

**MUED 752 - Psychology of Music (3 Credits)**

Study of the physical factors involved with the production and perception of musical sound; the tests for measuring music aptitude and achievement; the psychology of learning applied to music.

**MUED 753 - Instrumental Development and Related Materials (3 Credits)**

Detailed study and analysis of techniques used for the development of the instrumental program in the public schools; diagnosis of problems relating to strings, woodwinds, brass, and percussion; study and evaluation (including the problems in selection and use) of literature and materials for solos, small ensembles, bands, and orchestras suitable for elementary, junior, and senior high schools.

**MUED 754 - Music Administration and Curriculum (3 Credits)**

Concepts of and trends and practices in supervision; the place of music in the total program of education; consideration of current types of administrative organizations; study of administrative problems including scheduling and budgeting; consideration of effective music programs in city and county school systems; in-service education and workshop techniques; school and community relationships.

**MUED 756 - Choral Development and Related Materials (3 Credits)**

Study of choral problems from the classroom point of view; techniques of voice development in classes; emphasis on style, interpretation, rehearsal techniques, rhythm, tone quality, and diction; study and evaluation of choral compositions from Palestrina to the present day available for use in the public schools at all levels of instruction.

**MUED 757 - Seminar in Elementary School Music (3 Credits)**

A survey and evaluation of music book series for the elementary and middle school; an investigation of contemporary developments in pedagogy and in the application of research findings; and the formulation of a topical bibliography.

**MUED 781 - Advanced Brass Pedagogy (3 Credits)**

Pedagogical methods and techniques of brass instruction, and a survey of music literature appropriate for intermediate through advanced level.

**MUED 782 - Advanced Woodwind Pedagogy (3 Credits)**

An investigation of pedagogical methods and techniques of woodwind instruction through performance, and a survey of music literature appropriate for intermediate through advanced levels.

**MUED 783 - Advanced Wind Pedagogy (3 Credits)**

Pedagogical methods and techniques of wind instruction. Special study of problems unique to each instrument relating to care and repair, embouchure, tone production, articulation, fingering, intonation, and teaching materials.

**MUED 784 - Band Literature (3 Credits)**

History and literature of the wind band/ensemble.

**MUED 785 - Measurement and Evaluation of Music Learning (3 Credits)**

Selection and development of appropriate music learning measurement and evaluation techniques.

**MUED 790 - Principles of Music Education (3 Credits)**

Seminar on selected topics in music education.

**MUED 791 - History and Philosophy of Music Education (3 Credits)**

History of music education in the United States; comparative music education in foreign countries; philosophies that have influenced music education; and socio-cultural effects of music in the United States

**MUED 792 - Music Learning Theory (3 Credits)**

Application of learning theory to music.

**MUED 793 - Topics in Music Education (1-3 Credits)**

May be repeated for up to twelve credits. Topic for any semester to be announced by title in the schedule of classes.

**MUED 794 - New Directions in Music Education (3 Credits)**

Current trends in music education and an examination of how these issues affect music teaching and learning.

**MUED 795 - Research in Music Education and Pedagogy (3 Credits)**

Research methods and procedures.

**Graduation with Leadership Distinction:** GLD: Research

**MUED 796 - Seminar in Music Education Research (3 Credits)**

Survey and critical analysis of research in music education, culminating in the presentation and defense of individual research proposals.

**Prerequisites:** MUED 795.

**MUED 890 - Research Project (1-3 Credits)**

Specialized research in music education. May be repeated for a maximum of 6 credits.

## MUSM - Museum Management (MUSM)

**MUSM 700 - Administration and Management of Museums (3 Credits)**

The history and purpose of museums are examined. The basic management functions of museums and related cultural properties are considered.

**MUSM 701 - Exhibition Development (3 Credits)**

Exhibition planning: research, writing, design, budgeting.

**MUSM 702 - Museum Internship (3-6 Credits)**

This course is an internship in an AAM accredited museum. Students work under supervision in a museum setting.

**Prerequisites:** COLA 700 and COLA 701.

**MUSM 703 - Museum Management: Independent Study (3 Credits)**

Independent study in museum practices.

**Prerequisites:** COLA 700 and COLA 701.

**MUSM 704 - Collecting, Collections Management, and Curatorial Practice (3 Credits)**

Professional practice in collections management and care. Legal requirements and ethics of museum collecting. Curatorial collecting strategies and research.

## NPSY - Neuropsychiatry (NPSY)

**NPSY 755 - Fundamentals of Psychiatric Rehabilitation (3 Credits)**

Overview of current community-centered approaches to rehabilitation of persons with severe long-term mental illness. Emphasis placed on community-living problems, such as housing, social adjustment, supportive services, and employment.

**NPSY 756 - Vocational Implications of Psychiatric Disability (3 Credits)**

Further exploration of methodologies and techniques for reintegrating individuals with severe mental illness into the workplace.

**Prerequisites:** NPSY 755.

**NPSY 757 - Psychopathology for Counselors (3 Credits)**

Theoretical background for understanding causes, symptomatology, and preferred treatment approaches for disorders identified in DSM-IV, the standard reference of the American Psychiatric Association. Prepares students to diagnose and treat mental health conditions.

**NPSY 758 - Classification and Assessment of Mental Disorders (3 Credits)**

Classification of mental disorders using the DSM-IV, standard reference of the American Psychiatric Association, and the interpretation of formalized evaluations and appraisal techniques in achieving differential diagnoses.

**Prerequisites:** NPSY 757.

**NPSY 760 - Addictions Rehabilitation (3 Credits)**

Theory, treatment, and psychological aspects of addictions to alcohol and other drugs.

**NPSY 761 - Dual Diagnosis (3 Credits)**

Current research and models for rehabilitation of individuals with a substance abuse/dependency and other mental illness. Based on analyses of case studies.

**Prerequisites:** NPSY 757 and NPSY 760.

**NPSY 763 - LGBT Issues Counseling and Rehabilitation (3 Credits)**

Contemporary issues related to the provision of effective counseling and rehabilitation services with the lesbian, gay, bisexual, transgendered (LGBT) population. The focus will be on attaining a level of applied knowledge and awareness commensurate with master's level professional practice.

## Nursing (NURS)

**NURS 504 - Emergency Preparedness: Implications for Health Care Professionals (3 Credits)**

Principles of emergency preparedness with implications for health care at the local, regional, national, and global levels.

**NURS 505 - Caring for Limited English Proficient Patients (3 Credits)**

Principles and policies for clinical practice with Limited English Proficient patients.

**NURS 506 - Special Topics in International Nursing (3 Credits)**

Experiential field study to examine international nursing in another country. Course content varies and will be announced in the schedule of courses by title. May be repeated for credit.

**Prerequisites:** NURS 312.

**NURS 534 - The Rural Interdisciplinary Practicum (1-6 Credits)**

Students live and practice in a rural, interdisciplinary environment and participate in an organized community-based health care activity. Contract approved by instructor and department chair is required for undergraduate students.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Internships

**NURS 541 - Issues in Women's Health (3 Credits)**

An exploration of women's health and health care concerns from multiple perspectives.

**Cross-listed course:** WGST 541

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

**NURS 553 - In-Service Education (3 Credits)**

Organizing, developing, implementing, and evaluating the in-service education program.

**NURS 571 - Special Topics (3 Credits)**

Topics vary by title, consent of instructor.

**NURS 700 - Theoretical and Conceptual Foundation for Nursing (3 Credits)**

Concept development, model and theoretical framework interpretation, and theoretical formulations in nursing. Critical analysis of current theories of nursing, related nursing research, and selected theories from natural, behavioral, and applied health sciences.

**NURS 702 - Pharmacologic Mgmt in Pediatric, Adult, & Gerontological Patients Across Hlthcare Delivery Continuum (3 Credits)**

Pharmacologic management of acute and chronic health problems of pediatric, adult and gerontological patients across the healthcare delivery continuum.

**Prerequisites:** NURS 707.

**NURS 703 - Executive Leadership Development Cockcroft (4 Credits)**

Intensive engagement in self-assessment of leadership ability and development of proven successful leadership strategies relevant to practice, academia and policy development in complex interdisciplinary healthcare systems. Restricted to acceptance into the Amy C. Cockcroft Nursing Leadership Development program.

**NURS 704 - Advanced Health Assessment and Diagnostic Reasoning (3 Credits)**

Advanced theory and practice in critical thinking, physical assessment, diagnostic reasoning for clients across the life span to identify pathologic variations and initiate appropriate interventions. Didactic, lab, and field study.

**Prerequisites:** NURS 702 and NURS 707.

**NURS 705 - Acute Problems of Adults/Gerontology and Women's Health in Primary Care (3 Credits)**

Management of primary care to adult and gerontological clients across the delivery continuum who present with lifestyle behaviors, reproductive practices, and acute health problems. Includes didactic and clinical practice. Students who have not had advanced physical assessment within two years prior to taking this course must successfully validate their skills.

**Prerequisites:** NURS 702 and NURS 704.

**NURS 706 - Primary Care Nursing of Children (3 Credits)**

Advanced theory of histories, physical examinations, and diagnostic algorithms in primary care of children with health problems and developmental well care and counseling. Didactic and field study.

**Prerequisites:** NURS 702 and NURS 704.

**NURS 707 - Advanced Pathophysiology for Nurses (3 Credits)**

Advanced concepts of pathophysiological functioning with application to advanced nursing practice in selected specialty areas.

**NURS 708 - Conceptual Basis for Family and Community Health Nursing (3 Credits)**

Key concepts, theories, and issues relevant to practice as a specialist in public health/community health nursing.

**Prerequisite or Corequisite:** NURS 700.

**NURS 709 - Pathophysiological Concepts for Nursing Practice (3 Credits)**

Pathophysiological processes and application for nursing practice.

**Corequisite:** NURS 711.

**NURS 710 - Role of the Nurse Educator (3 Credits)**

Explores the integrated roles of the nurse educator, including teaching, research/scholarship, service and practice.

**NURS 711 - Pharmacotherapies for Nursing Practice (3 Credits)**

Pharmacotherapies treatments and application for nursing practice.

**Corequisite:** NURS 709.

**NURS 712 - Health Assessment for Nursing Practice (3 Credits)**

Health assessment processes and application for nursing practice.

**Corequisite:** NURS 709, NURS 711, NURS 713.

**NURS 713 - Nursing Practice Fundamentals (4 Credits)**

Introduction to cognitive, affective, and psychomotor skills and technology needed for nursing interventions.

**Corequisite:** NURS 709, NURS 711, NURS 712.

**NURS 714 - Maternal/Newborn Nursing Practice (4 Credits)**

Nursing interventions focusing on health promotion, restoration, and support to childbearing families. Field study required.

**Prerequisites:** NURS 712, NURS 713.

**Corequisite:** NURS 723.

**NURS 715 - Pediatric Nursing Practice (4 Credits)**

Nursing care of families with children, focusing on support for child growth and development, health promotion and health restoration. Field study required.

**Prerequisites:** NURS 712, NURS 713.

**Corequisite:** NURS 723.

**NURS 717 - Application of Basic Statistics for Nursing Practice & Service Management (3 Credits)**

Application of basic statistical principles and procedures to address common nursing practice issues and guide nursing practice and management.

**NURS 718 - Diagnostic Interpretation and Therapeutic Modalities (3 Credits)**

Analysis of diagnostic and laboratory findings for clinical decision-making in advanced practice nursing. Course incorporates selected medical and nursing diagnostic and therapeutic modalities.

**Prerequisites:** NURS 702 and NURS 707.

**NURS 720 - Clinical Application of Population Analysis (3 Credits)**

Application of concepts and principles of epidemiology, genetics/genomics, health informatics, and population health assessment to support clinical decision-making skills within different practice environments and health policy development.

**Prerequisites:** NURS 717.

**NURS 721 - Gerontological Nursing Care (2 Credits)**

Nursing care focusing on health promotion, restoration and support of older adults.

**Prerequisites:** NURS 712, NURS 713.

**NURS 722 - Adv Pract Nurs Mgmt of Chronic Diseases in Pediatric, Adult/Gero Patients across the Continuum (3 Credits)**

Advanced practice nursing of pediatric, adult and gerontological patients with chronic illnesses and disabilities across the health continuum.

**Prerequisites:** NURS 704, NURS 707, NURS 702.

**NURS 723 - Medical Surgical Nursing Practice I (5 Credits)**

Nursing Care of the patient with Chronic Health Problems.

**Prerequisites:** NURS 709, NURS 711, NURS 712, NURS 713.

**Corequisite:** NURS 714, NURS 715.

**NURS 724 - Education in Nursing (3 Credits)**

Introduction to the teaching-learning environment in nursing, including teaching-learning theories, strategies, assessment and facilitation of learner/learning and provides a framework for the nurse educator in the educational environment.

**NURS 725 - Education: Curriculum and Evaluation (3 Credits)**

The course introduces principles of curriculum development, design, implementation and evaluation. Evaluation measures explore internal and external constituents, including meeting that reflect contemporary health care trends and educational expectations, and prepare graduates to function effectively in the health measurement techniques are examined.

**NURS 726 - Medical Surgical Nursing Practice II (5 Credits)**

Nursing care of the patient with acute health issues.

**Prerequisites:** NURS 712, NURS 713, NURS 723.

**Corequisite:** NURS 745, NURS 729, NURS 730.

**NURS 727 - Teaching Practicum in Nursing (3 Credits)**

Supervised teaching experiences with nursing students, patients, and staff in selected health care and academic settings.

**NURS 729 - Psychiatric Nursing Practice (4 Credits)**

Nursing care of clients experiencing psychiatric/mental health problems, with a focus on health promotion, restoration, and support.

**Prerequisites:** NURS 712, NURS 713, NURS 721, NURS 723.

**Corequisite:** NURS 726.

**NURS 730 - Population Health Nursing (3 Credits)**

Trends of the public health workforce capacity and issues impacting the health of individuals and communities.

**NURS 731 - Management of Psychiatric Mental Health Problems across the Lifespan (3 Credits)**

Management of Psychiatric Mental Health Problems.

**Prerequisites:** NURS 702, NURS 704, NURS 707, NURS 761; Students who have not completed these requirements will be dropped from 731.

**NURS 732 - Management of Complex Mental Health Problems (3 Credits)**

Clinical management of complex mental health problems across the lifespan in hospital and community settings. Theory and field study.

**Prerequisites:** NURS 702, NURS 704, NURS 707, NURS 761, NURS 731; Students who have not completed these requirements will be dropped from 732.

**NURS 734 - Conceptual Basis of Health Systems (3 Credits)**

Organizational, systems, and complexity theory analysis with an emphasis on nursing leadership roles, strategic planning, systems thinking and conceptualizing organizations as complex adaptive systems.

**NURS 736 - Women, Work, and Health: Global Perspectives (3 Credits)**

Intersections of women's work and women's health in diverse social, cultural, economic, geographic, and political contexts.

**NURS 737 - Foundations for DNP Development (3 Credits)**

This course is designed to introduce students to the Doctor of Nursing Practice degree to include the roles of expert clinician, clinical scholar, policy and patient advocate, and leader in health care.

**NURS 738 - Financing of Health Care (3 Credits)**

Application of the principles of financial management to the systems involved in the delivery of health care.

**NURS 739 - Online Instruction and Technology in Nursing Education (3 Credits)**

Principles of evidenced-base practices for online/distance-based education and technology in nursing education.



**NURS 740 - Facilitative Processes in Nursing Administration (3 Credits)**

Issues, structures, and processes employed in providing a supportive environment for professional nursing practice. Emphasis on development of professional nursing systems models.

**NURS 741 - Coordinating Processes in Nursing Administration (3 Credits)**

Methods for supporting nursing systems with resources of health care delivery systems. Focus is on professional and systems relationships.  
**Prerequisites:** NURS 740.

**NURS 742 - Integrative Processes in Nursing Administration (3 Credits)**

Strategies for maximizing the potential of nursing services within organizations. Methods for meeting the challenges presented by complex changes occurring in the health care system. Practicum.

**Prerequisites:** NURS 741.

**NURS 743 - Advanced Nursing Practicum for the Educator (3 Credits)**

Precepted clinical immersion experience in specialty area with emphasis on the role of the masters prepared nursing educator's role.

**Prerequisites:** B or better in NURS 707, NURS 702, and NURS 704.

**NURS 745 - Nursing Ethics, Policy & Advocacy (3 Credits)**

Issues and trends in ethics, policy and advocacy for nursing practice.

**NURS 746 - Informatics, Technology, and Emerging Issues (3 Credits)**

Explores the application of informatics and technology in healthcare and other emerging issues in the field.

**NURS 747 - Leadership and Safety for Nursing Practice (3 Credits)**

Concepts and principles of leadership roles and the management functions of professional nurses in a contemporary health care environment, interprofessional relationships and quality/safety principles. Students will also utilize evidence-based research to examine clinical questions.

**Prerequisites:** NURS 726, NURS 729, NURS 745.

**Corequisite:** NURS 746, NURS 789, NURS 750.

**NURS 748 - Care Coordination and Outcomes Management (3 Credits)**

Strategies for effective care coordination and effective measurement of patient outcomes related to care transitions.

**NURS 750 - Transition to Nursing Practice I (3 Credits)**

Focuses on quality/safety in the healthcare setting and includes field study.

**Prerequisites:** NURS 714, NURS 715, NURS 726, NURS 729.

**Corequisite:** NURS 746, NURS 747, NURS 789.

**NURS 751 - Transition to Nursing Practice II (3 Credits)**

Application and synthesizing knowledge and skills learned throughout the nursing program. Students will integrate content from previous courses during class time and clinical experiences.

**Prerequisites:** NURS 750.

**Corequisite:** NURS 748, NURS 720, NURS 791.

**NURS 756 - Advanced Primary Care of Children for the FNP (2 Credits)**

Emphasis on children's growth & development, well care, assessment and management strategies for problems commonly encountered in primary care are introduced.

**Prerequisites:** NURS 704.

**Corequisite:** NURS 718, NURS 757.

**NURS 757 - Advanced Primary Care of Women for the FNP (2 Credits)**

Emphasis on women's health, including well pregnancy, and assessment and management strategies for problems commonly encountered in primary care are introduced.

**Prerequisites:** NURS 704.

**Corequisite:** NURS 756.

**NURS 758 - Acute Problems in Primary Care for the FNP (6 Credits)**

Management of acute health problems in the primary care setting for the FNP. Includes didactic and clinical practicum.

**Prerequisites:** NURS 756, NURS 757.

**NURS 759 - Management of Common Chronic Health Problems for the FNP (6 Credits)**

Advanced Practice Nursing of Pediatric, Adult, and Gerontological Patients with chronic illnesses and disabilities across the lifespan for the FNP. Includes didactic and clinical practicum.

**Prerequisites:** NURS 758.

**NURS 760 - Family Nurse Practitioner Legal, Ethical, and Role Transition (2 Credits)**

Focuses on the role of the nurse practitioner. Special consideration is given to business, policy, legal, cultural, and ethical issues regarding primary care and FNP practice.

**Prerequisites:** NURS 759.

**NURS 760A - Family Nurse Practitioner Role Practicum (2 Credits)**

Supervised field study in advanced practice nursing for primary care patients (pediatric, adult, and gerontological) across the delivery continuum.

**Prerequisites:** NURS 759.

**Corequisite:** NURS 760.

**NURS 761 - Neuroscientific Basis for Pharmacological & Nonpharmacological Treatments for Psychiatric Conditions (4 Credits)**

Links neurology to behavior, psychopathology and psychopharmacology in order to prepare the advanced practice psychiatric nurse to make evidence supported treatment decisions.

**Prerequisites:** NURS 704.

**Corequisite:** NURS 718.

**NURS 763 - Advanced Psychiatric Nurse Practicum I: Management of Psychiatric/Mental Health Conditions (6 Credits)**

Comprehensive biopsychosocial assessment, treatment and management of psychiatric mental health conditions across the lifespan in primary and acute care settings. Didactic and field study.

**Prerequisites:** NURS 761.

**NURS 764 - Advanced Psychiatric Nurse Practicum II: Management of Complex Psychiatric/Mental Health Conditions (6 Credits)**

Pharmacological and behavioral management of complex mental health problems across the lifespan in hospital and community settings. Didactic and field study.

**Prerequisites:** NURS 763.

**NURS 768 - Psychiatric Mental Health Nurse Practitioner: Legal, Ethical, and Role Transition (2 Credits)**

Focuses on the role of the nurse practitioner. Special consideration is given to business, policy, legal, cultural, and ethical issues regarding PMHNP practice.

**Prerequisites:** NURS 764.

**NURS 768A - Advanced Psychiatric Nurse Practicum III: Role Development (2 Credits)**

Supervised field study in advanced practice nursing for the psychiatric mental health nurse practitioner.

**Prerequisites:** NURS 764.

**Corequisite:** NURS 768.

**NURS 769 - Independent Study in Nursing (1-6 Credits)**

Opportunity for self-directed study in a theoretical area related to nursing, in an area of clinical nursing practice, or in an area of functional nursing practice.

**NURS 769A - Independent Study in Nursing (1-6 Credits)**

Opportunity for self-directed study in a theoretical area related to nursing, in an area of clinical nursing practice, or in an area of functional nursing practice.

**Prerequisites:** Required consent of major advisor and faculty member supervising the independent study

**NURS 770 - Emergent Diagnostics in Nursing (1 Credit)**

Overview of emergent diagnostic topics.

**NURS 771 - Selected Topics (3 Credits)**

CL: 2020.

**NURS 772 - Introduction of Acute Care Adult and Gerontological Health Problems (3 Credits)**

Introduction of selected acutely ill adult and gerontological patients.

**Prerequisites:** NURS 704.

**Corequisite:** NURS 718.

**NURS 773 - Principles of Acute Care Adult and Gerontological Health Problems I (6 Credits)**

Management of selected acutely ill adult and gerontological patients.

Didactic and field study.

**Prerequisites:** NURS 772.

**NURS 774 - Principals of Acute Care Adult and Gerontological Complex Health Problems II (6 Credits)**

Management of selected acutely ill adult and gerontological patients.

Didactic and field study.

**Prerequisites:** NURS 773.

**NURS 775 - Foundations in Nursing Informatics (3 Credits)**

Overview of nursing informatics and current trends in health care technology.

**NURS 777 - Nursing Informatics Practicum (3 Credits)**

Application of nursing informatics competencies to organizational change in health care systems.

**NURS 778 - Advanced Practice Role: Adult Gerontology Acute Care NP (AGACNP) (2 Credits)**

Focuses on the role of the nurse practitioner. Special consideration is given to business, policy, legal, cultural, and ethical issues regarding the AGACNP.

**Corequisite:** NURS 778A.

**NURS 778A - Practicum of Advanced Practice Role: Adult Gerontology Acute Care NP (AGACNP) (2 Credits)**

Supervised field study in advanced practice nursing for acutely ill adult and gerontological patients across the delivery continuum.

**Corequisite:** NURS 778.

**NURS 779 - Health Policy (3 Credits)**

Analysis of issues and forces affecting health delivery through the public sector; major models of political decision-making; and current health legislation.

**NURS 780 - Organizational Theories and Systems in Healthcare (3 Credits)**

Systems theories applied to complex organizations, emphasizing advanced nursing roles in strategic planning and systems thinking within current and anticipated healthcare environments.

**Prerequisites:** NURS 737, NURS 817.

**NURS 781 - Applied Technology in Health Care (3 Credits)**

Computer applications and other technological advances in nursing and health care delivery. Nursing administration, patient care management, and research applications.

**Prerequisites:** NURS 817.

**NURS 783 - Clinical Project Immersion & Proposal Development (3 Credits)**

Provides students the opportunity to integrate nursing theory, research and advanced nursing practice into a health care clinical project through interactive seminar format. Requires students to create a clinical project that transforms clinical practice for a selected population and incorporates process and outcome evaluations.

**Prerequisites:** NURS 819 and NURS 781.

**NURS 786 - Management of Acute Care Adult and Gerontological Health Problems I (4-6 Credits)**

Management of selected acutely ill adult and gerontological patients.

Practicum required.

**Prerequisites:** NURS 704, NURS 707, and NURS 718.

**NURS 787 - Management of Acute Adult and Gerontological Health Problems II (5,6 Credits)**

Management of acutely ill adult and gerontological patients. Practicum required.

**Prerequisites:** NURS 786.

**NURS 789 - Statistical and Research Methods for Nursing Practice (3 Credits)**

Exploration of research methods, including application of basic statistical principles and procedures. Evaluation of published nursing research reports.

**Prerequisites:** NURS 700.

**NURS 790 - Research Methods for Nursing (3 Credits)**

Development of nursing research and methodological approaches to the study of nursing problems.

**Prerequisites:** NURS 700 and approved statistics course.

**NURS 791 - Seminar in Clinical Nursing Research (3 Credits)**

Survey and critical analysis of current research in clinical nursing and related disciplines.

**Prerequisites:** NURS 790.

**NURS 793 - Advanced Practice Practicum for Emphasis Area: Primary Care (3-4) (3-4 Credits)**

Supervised field study in advanced practice nursing for primary care patients (pediatric, adult and gerontological) across the delivery continuum. Seminars on related topics.

**Prerequisites:** Placement and credit determined with advisement.

**NURS 794 - Ethics and the Health Sciences (1-4 Credits)**

An introduction to the formal and informal codes of professional conduct of health science disciplines and a discussion of their implications for interprofessional research, clinical practice, and administration.

**NURS 796 - Advanced Practice Practicum: AGACNP (3-4 Credits)**

Supervised field study in advanced practice nursing for acutely ill adult and gerontological patients across the delivery continuum. Seminars on related topics. Any graduate student who is not currently in good academic standing in the College of Nursing is excluded.

**Prerequisites:** NURS 786, NURS 787.

**NURS 798 - Advanced Practice Practicum: PMHNP across the Lifespan (3-4 Credits)**

Supervised field study in advanced practice nursing.

**Prerequisites:** NURS 731, NURS 732, NURS 761.

**NURS 799 - Thesis Preparation (1-6 Credits)**

May be repeated; only 6 hours may be applied to the degree.

**Prerequisites:** NURS 790.

**NURS 800 - Philosophical and Theoretical Foundations of Nursing Science (3 Credits)**

A critical examination of the evolution of approaches to nursing theory and nursing science and the impact on research theory development and clinical practice.

**NURS 801 - Theory Analysis and Application for Nursing Science (3 Credits)**

Examination and critique of theories from nursing and the physical, biomedical behavioral, and sciences and their application to nursing science.

**Prerequisites:** NURS 800.

**NURS 803 - Scientific Knowledge in Nursing (3 Credits)**

In-depth examination of a specific nursing science knowledge domain.

**Prerequisites:** NURS 801, NURS 804, NURS 810, NURS 811, NURS 813.

**NURS 804 - The Role of the Nurse Scientist (3 Credits)**

Selected roles and professional responsibilities in diverse settings and preliminary application of basic research skills.

**NURS 805 - Advanced Nursing Leadership (3 Credits)**

Nursing leadership in complex health care organizations.

**NURS 806 - Nurse Executive Leadership I (3 Credits)**

This course is the first of two courses focusing on advanced organizational leadership. Students prepare for top-level executive leadership roles within health care systems or health-related business organizations. Field study required.

**Prerequisites:** NURS 819.

**NURS 807 - Nurse Executive Leadership II (3 Credits)**

This course is the second of two courses building advanced leadership knowledge and competencies for top-level organizational leadership roles within health care systems or health-related business organizations. The emphasis of this course is leadership for clinical excellence. Field study required.

**Prerequisites:** NURS 806.

**NURS 808 - Advanced Nursing in Population Health (3 Credits)**

Application of evidence-based nursing interventions to issues in population health.

**NURS 809 - Advanced Healthcare Financing (3 Credits)**

Course provides the tools for financial management in the health services industry. Case studies provide insight into complex financial decisions required for healthcare administration, with a focus on financial and business aspects of healthcare administration with implications on patient care quality and outcomes.

**Prerequisites:** NURS 738 or equivalent graduate level finance class.

**NURS 810 - Nursing Research Methods I (3 Credits)**

An introduction to methods of inquiry utilized in the biomedical, behavioral, and social sciences and their application for nursing research.

**Prerequisites:** Completion of a graduate level statistics course (eg - BIOS 700 or equivalent).

**NURS 811 - Nursing Research Methods II (3 Credits)**

Advanced quantitative methods, designs, and analysis techniques used in the development of nursing science.

**Prerequisites:** NURS 810 or EDRM 711 and BIOS 757 or equivalent.

**NURS 812 - Measurement in Nursing Research (3 Credits)**

Design and conduct of a measurement project related to the student's area of research interest.

**NURS 813 - Nursing Research Methods III (3 Credits)**

Examination and practical application of the diverse qualitative research epistemology, ontologies, methodologies and ethical issues.

**Prerequisites:** NURS 810.

**NURS 814 - Observational Methods (3 Credits)**

Quantitative observational research techniques, strategies for developing coding systems, determining reliability and validity, and analyzing data.

**NURS 817 - Application of Statistics for Evidence Based Nursing Practice (3 Credits)**

Application of intermediate inferential statistical techniques and procedures used to build and translate evidence based nursing practice.

**Prerequisites:** NURS 717 or equivalent graduate level stats course in the past 5 years.

**NURS 819 - Evidence and Nursing Practice (3 Credits)**

Analysis and synthesis of evidence needed for formulating recommendations for nursing practice.

**Prerequisites:** NURS 780.

**NURS 840 - Independent Study in Nursing Science (1-6 Credits)**

Independent study to meet the needs of individual students. Conferences with professor.

**NURS 840A - Independent Study in Nursing Science (1-6 Credits)**

Independent Study for doctoral student field study Restricted to: Graduate Nursing majors only - Doctoral level

**NURS 850 - Selected Topics in Nursing Science (3 Credits)**

Depth analysis of a specific method or content area of nursing research.

**NURS 870 - Research Proposal Development (3 Credits)**

An introduction to the methodological and practice concepts relevant to nursing research grant proposal development.

**Prerequisites:** NURS 811, NURS 813.

**NURS 897 - DNP Project Preparation and Residency (1-6 Credits)**

DNP project consists of two parts; synthesis of the literature related to a practice problem and application of findings in a practice setting.

**NURS 898 - Research Internship (1-6 Credits)**

Application of the principles and techniques of nursing research and theory through collaboration with a graduate nursing faculty mentor in an ongoing research project.

**NURS 899 - Dissertation Preparation (1-12 Credits)**

Minimum of 12 hours required for completion of degree.

Nursing (NURS)

## OBGY - Obstetrics / Gynecology (OBGY)

**OBGY 702 - Genetic Dilemma-Life Cyc (3 Credits)**

## PATH - Pathology (PATH)

**PATH 710 - Neoplasia (3 Credits)**

Survey course covering a broad range of topics on cancer, including definition, causes, control of cancer growth, similarities and differences between malignant and normal cells, role of viruses and carcinogens, mechanisms of metastasis, oncogenes, role of nutrition, and principles of treatment.

**Prerequisites:** BIOL 340 and CHEM 232 or consent of instructor

**PATH 711 - Experimental Pathology (3 Credits)**

Basic principles of pathologic processes of disease in organs and tissues at the gross and microscopic level. A review of normal anatomy and histology essential to an understanding of processes and organs and tissues that were normal before the disease began.

**PATH 741A - Pathology I (4 Credits)**

Lecture, laboratory, and discussion of special topics covering basic principles of disease, neoplasia, infectious disease, genetic diseases, diseases of the blood forming organs. One semester. Students will not be allowed to receive credit for both PATH 741A and 741B.

**PATH 741B - Pathology I (4 Credits)**

Lecture, laboratory, and discussion of special topics covering basic principles of disease, neoplasia, infectious disease, genetic diseases, diseases of the blood forming organs, heart and lung. For students who are planning to take PATH 742, Pathology II. Students will not be allowed to receive credit for both PATH 741A and 741B.

**PATH 742 - Pathology II (4 Credits)**

Lecture, laboratory, and discussion of special topics covering diseases of the digestive tract, endocrine system, nervous system, and skin and autoimmune diseases.

**Prerequisites:** PATH 741B

**PATH 760 - Topics in Pathobiology (1 Credit)**

Tutorial instruction in selected topics dealing with the molecular and cellular basis of disease. These topics may be drawn from the areas of inflammation, neoplasia, circulatory disturbances, medical genetics, infectious diseases, and cell injury and death.

**Prerequisites:** PATH 741.

**PATH 770 - Seminar in Pathology (1 Credit)**

Group discussion by students and faculty of current research articles in the area of disease mechanisms. May be taken four times for credit.

**Prerequisites:** PATH 741.

**PATH 780 - Research in Disease Mechanisms (3-12 Credits)**

This is a non-thesis course to provide training in specific laboratory techniques in experimental pathology. May be repeated for credit.

**PATH 899 - Dissertation Preparation (1-12 Credits)**

## Pathology & Microbiology (PAMB)

**PAMB 620 - M-IV Pathology - RMH (2-12 Credits)**

## PHAR - Pharmacy (PHAR)

**PHAR 527 - Problems in Pharmacy I (1-6 Credits)**

Conferences, assignments, and laboratory. Elective course. Contract approved by instructor, advisor, and department head is required for undergraduate students.

**PHAR 700 - Principles of Pharmacology, Medicinal Chemistry, and Pharmaceutics (4 Credits)**

This four credit hour course instructs students on the important fundamentals that define pharmaceutical sciences. Important concepts of pharmacology, medicinal chemistry and pharmaceutics are taught with the broad goal of understanding pharmaceutical agents at a molecular level. It is the introductory graduate level course for graduate students in the pharmaceutical sciences. It is also intended for graduate students in other related fields of biological, chemical, and biomedical sciences who wish to learn the principles of pharmaceutical sciences.

**PHAR 701 - Current Topics in Pharmaceutical Sciences (4 Credits)**

Addresses recent concepts and technology in the pharmaceutical and biomedical sciences. Assists students in interpreting and evaluating published literature; and, understanding and presenting, in oral or written formats, scientific research in the pharmaceutical and biomedical sciences.

**Prerequisites:** PHAR 700.

**PHAR 703 - Advanced Medicinal Chemistry I (2 Credits)**

The interaction of natural and synthetic drugs with biological systems at the molecular and quasi-molecular level.

**PHAR 704 - Advanced Medicinal Chemistry II (1-3 Credits)**

An advanced study of natural and synthetic drugs by pharmacological classes, with emphasis on the application of principles covered in PHAR 703.

**PHAR 705 - Advanced Medicinal Chemistry III (2-5 Credits)**

A continuation of PHAR 704.

**PHAR 706 - Advanced Medicinal Analysis (3 Credits)**

A study of the medicinal analyses of an advanced nature with special emphasis on instrumental methods of medicinal analysis.

**PHAR 707 - Heterocyclic Medicinal Chemistry (3 Credits)**

A study of the fundamentals of heterocyclic nomenclature and the chemistry of both the heterocyclic medicinal products and the intermediates for their synthesis.

**PHAR 708 - Natural Products Medicinal Chemistry (3 Credits)**

The chemistry and biogenesis of alkaloids and antibiotics.

**PHAR 709 - Advanced Biochemistry (3-4 Credits)**

Lectures, seminars, demonstrations and laboratory work on recent and more technical advances in the field of biochemistry.

**PHAR 710 - Advanced Biochemistry (3-4 Credits)**

Lectures, seminars, demonstrations and laboratory work on recent and more technical advances in the field of biochemistry.

**PHAR 711 - Seminar in Pharmacy Administration (1 Credit)**

Discussion and presentation of current topics in pharmacy administration. Required of all master's degree (2 credit hours) and Ph.D. degree (3 credit hours) candidates in the Department of Pharmacy Practice.

**PHAR 711A - Seminar in Pharmacy Administration (1 Credit)**

Discussion and presentation of current topics in pharmacy administration. Required of all master's degree (2 credit hours) and Ph.D. degree (3 credit hours) candidates in the Department of Pharmacy Practice.

**PHAR 711B - Seminar in Pharmacy Administration (1 Credit)**

Discussion and presentation of current topics in pharmacy administration. Required of all master's degree (2 credit hours) and Ph.D. degree (3 credit hours) candidates in the Department of Pharmacy Practice.

**PHAR 711C - Seminar in Pharmacy Administration (1 Credit)**

Discussion and presentation of current topics in pharmacy administration. Required of all master's degree (2 credit hours) and Ph.D. degree (3 credit hours) candidates in the Department of Pharmacy Practice.

**PHAR 711D - Seminar in Pharmacy Administration (1 Credit)**

Discussion and presentation of current topics in pharmacy administration. Required of all master's degree (2 credit hours) and Ph.D. degree (3 credit hours) candidates in the Department of Pharmacy Practice.

**PHAR 712 - Seminar in Pharmaceutical Sciences (1 Credit)**

Discussion of current topics in pharmaceuticals, medicinal chemistry, and pharmacology. Required of all students. A maximum of 4 credit hours may be earned in PHAR 712 A-D.

**PHAR 712A - Seminar in Pharmaceutical Sciences (1 Credit)**

Discussion of current topics in pharmaceuticals, medicinal chemistry, and pharmacology. Required of all students. A maximum of 4 credit hours may be earned in PHAR 712 A-D.

**PHAR 712B - Seminar in Pharmaceutical Sciences (1 Credit)**

Discussion of current topics in pharmaceuticals, medicinal chemistry, and pharmacology. Required of all students. A maximum of 4 credit hours may be earned in PHAR 712 A-D.

**PHAR 712C - Seminar in Pharmaceutical Sciences (1 Credit)**

Discussion of current topics in pharmaceuticals, medicinal chemistry, and pharmacology. Required of all students. A maximum of 4 credit hours may be earned in PHAR 712 A-D.

**PHAR 712D - Seminar in Pharmaceutical Sciences (1 Credit)**

Discussion of current topics in pharmaceuticals, medicinal chemistry, and pharmacology. Required of all students. A maximum of 4 credit hours may be earned in PHAR 712 A-D.

**PHAR 713 - Synthetic Medicinal Chemistry (3 Credits)**

Application of synthetic procedures in the preparation of various medicinal and pharmaceutical chemicals and their intermediates.

**PHAR 714 - Drug Design by Molecular Modeling and Computational Techniques (3 Credits)**

Application of molecular modeling, computer graphics, and other computational techniques to the design of drugs.

**PHAR 715 - Pharmacogenomics and Personalized Medicine (3 Credits)**

Pharmacogenomics concepts and experimental approaches combined with pharmacotherapy realms.

**PHAR 717 - Special Topics in Pharmacy (3 Credits)**

Lectures, readings, and discussions on special areas of experimental pharmacy not offered in other courses.

**PHAR 718 - Special Topics in Pharmacy (3 Credits)**

Lectures, readings, and discussions on special areas of experimental pharmacy not offered in other courses.

**PHAR 720 - Pharmacokinetics (3 Credits)**

A study of the mathematical models used in research to describe drug changes in body fluids as related to pharmacologic effects. Includes the kinetics of dissolution, absorption, distribution, metabolism, and excretion after a drug reaches the general circulation. Three lecture and three laboratory hours per week.

**PHAR 720L - Pharmacokinetics Lab (1 Credit)****PHAR 725 - Advanced Pharmaceutics I (2 Credits)**

Physical, chemical, and kinetic concepts which apply to the design and evaluation of pharmaceutical systems.

**PHAR 726 - Advanced Pharmaceutics II (3 Credits)**

Application of chemical and physical concepts to the design and evaluation of pharmaceutical systems (dosage forms).

**PHAR 732 - Radiation Protection (3 Credits)**

The biological effects of ionizing radiation and the basic mechanisms which bring about these effects. Monitoring, dosimetry, hazard control, and legal responsibilities concerning ionizing radiation used in medicine.

**PHAR 734 - Selected Topics in Neuropharmacology (2 Credits)**

Neurochemical analysis of selected central nervous system neurotransmitter topics, including the kinetics of synthesis, storage and release, and the action of selected psychotherapeutic agents on these processes.

**PHAR 735 - Cancer: Causes, Treatment, Prevention (2 Credits)**

The molecular and biochemical basis of cancer and the therapeutic approaches in the prevention and treatment of cancer.

**PHAR 736 - Advanced Pharmacology I (1-4 Credits)**

Survey of drugs acting on the autonomic nervous system and the cardiovascular system; advanced topics in these areas and on antibiotics and chemotherapy.

**PHAR 737 - Advanced Pharmacology II (1-4 Credits)**

Survey of centrally acting drugs, anti-inflammatory and immunomodulating drugs, hormones, and vitamins; advanced topics in these areas and in drug design and drug toxicity/teratogenesis.

**PHAR 738 - Basic Pharmacological Principles (2 Credits)**

Factors that govern drug response, biochemical and molecular actions of drugs, and adverse effects induced by drugs.

**PHAR 740 - Socio-Economics of Pharmacy Practice (3 Credits)**

An analysis of practice environments of pharmacists. Emphasis on the drug using public and health care providers in terms of economics, social, and health factors. Detailed analysis of the third-party prescription market including prescribing behavior, drug use, cost containment, legal issues, and quality of care.

**PHAR 741 - Pharmaceutical Outcomes Database Development (3 Credits)**

Development and use of pharmaceutical outcomes databases.

**PHAR 742 - Research Methods in Pharmaceutical and Health Outcomes Sciences (3 Credits)**

The nature of the research process in the administrative and behavioral aspects of pharmacy practice. Emphasis on developing the skills to analyze the total drug use process.

**PHAR 744 - Marketing of Drug Products (3 Credits)**

The principles of marketing as applied to pharmaceutical products. Topics include various marketing institutions and the integration of these into the drug distribution system, and the duties of the market manager in a pharmaceutical firm.

**PHAR 745 - International Pharmaceutical Marketing (3 Credits)**

The principles of marketing applied to the international pharmaceutical industry. Emphasis on the marketing environment and institutions of pharmaceutical marketing in global markets.

**PHAR 746 - Drug Benefits in Health Care Programs (3 Credits)**

Detailed analysis of the third party prescription market including prescribing behavior, drug use, cost containment, legal issues, and quality of care.

**PHAR 748 - Principles of Pharmacoeconomics (3 Credits)**

Analytical techniques and theoretical principles for evaluating costs and consequences of pharmaceutical agents and services for the health care system and society.

**PHAR 799 - Thesis Preparation (1-6 Credits)****PHAR 896 - Doctoral Directed Research (1-6 Credits)**

Directed laboratory research and literature assignments supervised by graduate faculty.

**PHAR 899 - Dissertation Preparation (1-12 Credits)**

## Philosophy (PHIL)

**PHIL 501 - British Empiricism (3 Credits)**

A historical and critical survey of the British philosophers of experience. Principal concentration is on Locke, Berkeley, and Hume.

**Prerequisites:** C or better in PHIL 304.

**PHIL 502 - Continental Rationalism (3 Credits)**

A critical and historical study of the 17th-century European philosophers. The works of Descartes, Spinoza, and Leibniz are emphasized.

**Prerequisites:** C or better in PHIL 304.

**PHIL 503 - Analytic Philosophy (3 Credits)**

A critical study of recent and contemporary works in philosophical analysis, and an evaluation of the purposes, methods, and results of this movement.

**Prerequisites:** C or better on 3 hours in philosophy beyond the 100 level.

**PHIL 504 - Phenomenology and Existentialism (3 Credits)**

A critical study of some fundamental themes in phenomenology and the philosophy of existence. Emphasis is placed on an intensive study of selected works of such writers as Kierkegaard, Jaspers, Husserl, and Heidegger.

**Prerequisites:** C or better in PHIL 304 or PHIL 305.

**PHIL 505 - Plato (3 Credits)**

An intensive study of selected Dialogues by Plato.

**Prerequisites:** C or better in PHIL 301.

**PHIL 506 - Aristotle (3 Credits)**

An intensive study of some of the more important of Aristotle's works.

**Prerequisites:** C or better in PHIL 301.

**PHIL 507 - Medieval Philosophy (3 Credits)**

A historical and critical study of the works of the leading medieval philosophers.

**Prerequisites:** C or better in PHIL 303.

**PHIL 508 - Hume (3 Credits)**

An intensive study of the philosophical writings of Hume, especially A Treatise of Human Nature.

**Prerequisites:** C or better in PHIL 304.

**PHIL 509 - Kant (3 Credits)**

An intensive study of the work of Kant, especially the Critique of Pure Reason.

**Prerequisites:** C or better in PHIL 304.

**PHIL 510 - Theory of Knowledge (3 Credits)**

An examination of some representative theories of truth, meaning, probability, and perception.

**Prerequisites:** C or better in 3 hours in philosophy beyond the 100 level.

**PHIL 511 - Symbolic Logic (3 Credits)**

A presentation and philosophical examination of the fundamentals of modern symbolic logic.

**Prerequisites:** C or better in PHIL 115.

**PHIL 512 - Philosophy of Science (3 Credits)**

A critical examination of methods and concepts of the sciences. Topics include scientific revolutions, the unity of science, experimentation, explanation, and evidence.

**Prerequisites:** C or better in 3 hours in philosophy beyond the 100 level.

**PHIL 513 - Philosophy of History (3 Credits)**

A philosophical examination of historical inquiry. Theories of historical development. The logical problems of historical explanation.

**Prerequisites:** C or better in 3 hours in philosophy beyond the 100 level.

**PHIL 514 - Ethical Theory (3 Credits)**

Survey of recent and historical developments in ethical theory with special emphasis on the meaning of ethical language and the forms of reasoning employed in discussing moral values.

**Prerequisites:** C or better in PHIL 320.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

**PHIL 515 - Philosophy of Religion (3 Credits)**

A critical study of selected problems in the philosophy of religion. Emphasis is placed on problems relating to the existence of God, religious knowledge, and the language of religion.

**Prerequisites:** C or better in 3 hours in philosophy beyond the 100 level.

**PHIL 516 - Advanced Aesthetics (3 Credits)**

Detailed examination of the literature on aesthetics.

**Prerequisites:** C or better in 3 hours in philosophy beyond the 100 level.

**PHIL 517 - Philosophy of Language (3 Credits)**

An examination of concepts and problems such as meaning, reference, analyticity, definition, and the relation between logic and philosophy.

**Prerequisites:** C or higher in PHIL 114 or PHIL 511.

**Cross-listed course:** LING 565

**PHIL 518 - Philosophy of the Social Sciences (3 Credits)**

The goals of inquiry and problems such as objectivity, reduction, value freedom, and ideology.

**Prerequisites:** C or better in 3 hours in philosophy beyond the 100 level.

**PHIL 519 - Metaphysics (3 Credits)**

Major issues in classical and modern metaphysics. Topics include the idea of first philosophy, being, substance, the problem of universals, essentialism, causation, time and space, and metaphysical method.

**Prerequisites:** C or better in PHIL 350 or PHIL 351 or PHIL 360.

**PHIL 520 - Philosophy of Mind (3 Credits)**

The concept of mind, the mind-body problem, emotions and cognition, the possibility of artificial minds, theories of embodied cognition.

**Prerequisites:** C or better in PHIL 350 or PHIL 351 or PHIL 360.

**PHIL 521 - Mathematical Logic (3 Credits)**

Axiomatic development of logic and the set-theoretic foundations of mathematics.

**Prerequisites:** C or better in PHIL 511.

**PHIL 522 - Introduction to Semantics (3 Credits)**

Introduction to the study of linguistic meaning, including the following topics: meaning, reference, and truth; the connections among language, thought, and reality; word meaning and sentence meaning; possible worlds and modality; thematic roles; meaning and context; presupposition and implicature; speech acts; formal semantics; and cognitive semantics.

**Prerequisites:** C or better in any of LING 300, LING 301, LING 600, PHIL 114, PHIL 511.

**PHIL 523 - Advanced Topics in Logic (3 Credits)**

Philosophical problems about logic, the development of philosophical logics, and the problems surrounding them.

**Prerequisites:** C or better in PHIL 511.

**PHIL 524 - Philosophy of Biology (3 Credits)**

Examination of major conceptual, theoretical, and methodological issues in biological science. Topics include reductionism, units of selection, adaptationism, relations between evolutionary and developmental biology and between biology and society.

**Prerequisites:** C or better in 3 hours of Philosophy beyond the 100 level.

**PHIL 526 - Hellenistic Philosophy (3 Credits)**

Survey of the major schools and trends in Hellenistic philosophy: Epicureans, Stoics, Academic Skeptics. Topics include eudaimonism, hedonism, monism, teleology, and the criterion of truth.

**Prerequisites:** C or better in PHIL 301 or PHIL 302.

**PHIL 527 - Virtues, Acts, and Consequences (3 Credits)**

Recent contributions to three central strands of ethical theory: virtue theory, deontology, and utilitarianism; historical roots and recent developments.

**Prerequisites:** C or better in PHIL 320.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

**PHIL 528 - Concepts of Evidence (3 Credits)**

Systematic approaches to data analysis—Bayesian, Fisherian and decision theoretic—will be critically appraised. Applications of these theories to some problems of inductive logic: the paradoxes of confirmation, the role of simplicity, and the probability of inductive generalizations.

**Prerequisites:** C or better in PHIL 350 or PHIL 351 or PHIL 360.

**PHIL 532 - Social Justice (3 Credits)**

Recent theories of distributive justice and their application to such issues as redistribution of wealth, reverse discrimination, and the conflict between liberty and equality. Authors include Rawls, Nozick, Hayek, and Popper.

**Prerequisites:** C or better in PHIL 320 or PHIL 321 or PHIL 322 or PHIL 330 or PHIL 331.

**Graduation with Leadership Distinction:** GLD: Community Service, GLD: Diversity and Social Advocacy, GLD: Global Learning

**PHIL 534 - Contemporary European Social Philosophy (3 Credits)**

An examination of European social philosophy associated with either the Frankfurt School of Social Research or contemporary French Poststructuralism.

**Prerequisites:** C or better in 3 hours in philosophy beyond the 100 level.

**PHIL 535 - Ecofeminism (3 Credits)**

An exploration of the connections between oppression of women and oppression of nature.

**Prerequisites:** 3 hours in philosophy beyond the 100 level.

**Cross-listed course:** WGST 535

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy, GLD: Professional and Civic Engagement Leadership Experiences

**PHIL 536 - Language and Interpretation in Contemporary European Philosophy (3 Credits)**

Selected contemporary European philosophical movements, their views on language, and their approach to interpretation: hermeneutics, structuralism, poststructuralism.

**Prerequisites:** C or better in PHIL 114.

**PHIL 540 - Renaissance Philosophy (3 Credits)**

Humanism (e.g., Petrarca), Platonism (e.g., Pico and Ficino), Aristotelianism (e.g., Pomponazzi), philosophies of nature (e.g., Telesio, Campanella, and Bruno), and Nicholas of Cusa, Erasmus, Montaigne, and Suarez.

**Prerequisites:** C or better in PHIL 301 or PHIL 302 or PHIL 303.

**PHIL 550 - Health Care Ethics (3 Credits)**

An exploration of the ethical dimensions of patient care in the clinical setting.

**Prerequisites:** C or better in PHIL 320 or PHIL 321 or PHIL 322 or PHIL 330 or PHIL 331.

**PHIL 598 - Readings in Philosophy (3 Credits)**

Prerequisite: 6 hours in philosophy beyond the 100 level.

**PHIL 701 - Studies in Ancient Philosophy (3 Credits)****PHIL 705 - Studies in 17th- and 18th-Century Philosophy (3 Credits)****PHIL 706 - Studies in Continental Philosophy (3 Credits)**

Study of the works of one or more major contemporary continental philosophers.

**PHIL 707 - Studies in 19th-Century Philosophy (3 Credits)****PHIL 709 - Studies in 20th-Century Philosophy (3 Credits)****PHIL 710 - Ethics and the Health Sciences (1-4 Credits)**

Students are introduced to formal and informal codes of professional conduct of various health science disciplines and understand the implications of these distinctions for interdisciplinary research, clinical practice, and administration.

**PHIL 711 - Studies in Ethics (3 Credits)**

**PHIL 712 - Studies in Theory of Knowledge (3 Credits)****PHIL 714 - Philosophy of Science (3 Credits)****PHIL 715 - Ethics in Criminal Justice (3 Credits)**

Classic and contemporary theories of ethics and their applications to criminal justice decision-making.

**Cross-listed course:** CRJU 714

**PHIL 716 - Philosophy of Mind (3 Credits)**

Topics and problems arising in the philosophy of mind.

**PHIL 717 - Pragmatic Theory (3 Credits)**

Study of formal approaches to pragmatic phenomena such as focus, presupposition, and implicature; examination of deictic, contextual and perspectival expressions; survey of pragmatic frameworks such as Relevance Theory and Discourse Representation Theory; study of information structural properties of natural languages, including topic-comment structure, given-new contrasts, definiteness versus indefiniteness.

**Prerequisites:** LING 600 or LING 627.

**Cross-listed course:** LING 729

**PHIL 718 - Studies in Philosophy of Language (3 Credits)**

Examination of concepts such as meaning, reference, analyticity, and translational indeterminacy; evaluation of accounts of speech acts, the semantics of propositional attitudes, metaphor, and other pragmatic phenomena.

**Cross-listed course:** LING 765

**PHIL 719 - Semantic Theory (3 Credits)**

The formal study of linguistic meaning, including the following topics: Fregean truth-conditional semantics; lexical decomposition; predication and modification; lambda abstraction; generalized quantification; intentional and extensional contexts; tense, aspect, and modality; propositional attitudes; and indexicality.

**Prerequisites:** LING 600 or LING 627.

**Cross-listed course:** LING 728

**PHIL 720 - Studies in Philosophy of Religion (3 Credits)****PHIL 721 - Pragmatism (3 Credits)****PHIL 723 - Hegel (3 Credits)****PHIL 724 - Speculative Metaphysics (3 Credits)****PHIL 735 - Contemporary Political Philosophy (3 Credits)**

Recent work in philosophy regarding political and social values, principles of justice, political authority, institutions, and related subjects.

**PHIL 760 - Special Topics in Philosophy (3 Credits)****PHIL 763 - Epistemology (3 Credits)**

Survey of historical and recent trends in epistemology.

**PHIL 764 - Metaphysics (3 Credits)**

Survey of historical and recent trends in metaphysics.

**PHIL 767 - Case Study in the Philosophy of Science (3 Credits)**

Introduction to the method of studying historical cases in the philosophy of science. This course revolves around the sustained treatment of one or two such cases.

**PHIL 769 - Jurisprudence (2-3 Credits)**

An examination of a number of philosophical problems about the law: the nature and function of rules, the difference between legal rules and other rules, the nature of reasoning from legal rules, the concept of a legal system, and the relation of law and morals.

**PHIL 790 - Teaching Philosophy (3 Credits)**

Materials, techniques, and problems of teaching philosophy. Repeatable for credit.

**PHIL 797 - Independent Study (3 Credits)**

Requires permission of instructor.

**PHIL 798 - Research Seminar (1 Credit)**

Student and faculty presentations of current research in specified subject areas. Content varies. May be repeated for credit.

**PHIL 799 - Thesis Preparation (1-9 Credits)**

CL: 2020.

**PHIL 835 - Seminar in Environmental Ethics (3 Credits)**

Examination of the intellectual, cultural, and ethical frameworks within which environmental problems arise and are solved.

**Cross-listed course:** ENVR 835

**PHIL 847 - Modern Philosophies of Education (3 Credits)**

Critical comparison of present-day schools of thought on the nature, objectives, and functions of American education.

**Prerequisites:** Education 744 or equivalent.

**Cross-listed course:** EDFI 847

**PHIL 899 - Dissertation Preparation (1-12 Credits)**

## PPHP - Physlgy & Pharmacology (PPHP)

**PPHP 701 - Physiology for Health Sciences (6 Credits)**

Major organ systems with emphasis on basic physiological processes and control systems. Primarily for health sciences graduate students.

**PPHP 703 - Human Neuroanatomy (4 Credits)**

Lecture, laboratory, and independent study devoted to the structure and function of the human nervous system. Emphasis on those features of the nervous system of contemporary research interest.

**PPHP 705 - Biomedical Pharmacology (6 Credits)**

Lectures and conference discussions covering principles of drug action; autonomic (adrenergic/cholinergic), cardiovascular, renal, central nervous system, endocrine and antimicrobial pharmacology, cancer chemotherapy, and toxicology.

**Prerequisites:** PPHP 701 or PPHP 720.

**PPHP 720 - Graduate Physiology Lecture and Laboratory (8 Credits)**

Lecture, discussions, and laboratory covering: cell, muscle, respiratory, circulatory, gastrointestinal, metabolism, endocrinology, nervous system, and reproduction. Students will conduct physiology experiments to gain knowledge of experimental techniques and data collection.

**PPHP 725 - Autonomic Pharmacology (3 Credits)**

Functional regulation of biosynthesis, release and reuptake of neurotransmitters as well as the role of transmitters in regulating physiological processes will be presented. Emphasis will be placed on experimental techniques used in this area of pharmacology.

**Prerequisites:** graduate physiology, pharmacology, and biochemistry.

**PPHP 730 - Seminar in Neuroanatomy (1-3 Credits)**

Advanced study of selected topics in neuroanatomy.

**PPHP 735 - Cardiovascular Pharmacology (3 Credits)**

An in-depth examination of the cardiovascular system with an emphasis on hemodynamic principles, cardiac regulation, and the use of drugs in various pathological states of the mammalian heart.



**PHPH 739 - Drug Action on Ion Movements (3 Credits)**

The actions of several classes of drugs that alter ion movements in excitable tissues will be explored in depth with emphasis on models of drug actions and altered responses in hereditary and disease states.

**Prerequisites:** PHPH 705.

**PHPH 740 - Neuroscience (4 Credits)**

Cellular and molecular principles of neurobiology and neuroscience topics from a research-oriented perspective.

**Prerequisites:** BMSC 754 or CHEM 754.

**PHPH 741 - Special Topics in Neuroscience (1-3 Credits)**

Tutorial instruction and group discussion of select topics in neuroscience involving neuroendocrinology, neuropharmacology, developmental neurobiology, or neuropsychobiology. Content varies by title and may be repeated up to a maximum of 6 credits total.

**PHPH 742 - Neuroscience Seminar (1 Credit)**

Presentation and group discussion of research articles in neuroscience. Focus on improvement of critical thinking and scientific writing skills, as well as development of research ideas.

**PHPH 745 - Neurophysiology (3 Credits)**

Generation and transmission of excitation in the mammalian nervous system. Integrated function of the nervous system with emphasis on interactions of autonomic, neuroendocrine, and behavioral mechanisms contributing to homeostatic regulation.

**PHPH 750 - Fundamental Neuroscience I (4 Credits)**

Integrated foundation in neuroanatomical and neurophysiological principles from a research-oriented perspective.

**PHPH 751 - Fundamental Neuroscience II (4 Credits)**

Integrated foundation in neurochemical and neuropharmacological principles from a research-oriented perspective. Includes aspects of molecular neuroscience and systems analyses.

**PHPH 752A - Neurobiology Basics Module: Neuroanatomy (2 Credits)**

Principles of neuroanatomy necessary for research in neurobiology-related disciplines. Each 5-week module provides fundamentals of particular aspects of neurobiology, including neuroanatomy, neurophysiology, neurochemistry, molecular neurobiology, and neuropharmacology, or skills necessary for research in neurobiology-related disciplines.

**PHPH 752B - Neurobiology Basics Module: Neurochemistry–Fundamental Concepts (2 Credits)**

Principles required for understanding chemical and cellular processes in the nervous system. Each 5-week module provides fundamentals of particular aspects of neurobiology, including neuroanatomy, neurophysiology, neurochemistry, molecular neurobiology, and neuropharmacology, or skills necessary for research in neurobiology-related disciplines.

**PHPH 752C - Neurobiology Basics Module: Neurochemistry–Advanced Concepts (2 Credits)**

In-depth analysis of neurochemical processes, signaling, and pathways in the nervous system. Each 5-week module provides fundamentals of particular aspects of neurobiology, including neuroanatomy, neurophysiology, neurochemistry, molecular neurobiology, and neuropharmacology, or skills necessary for research in neurobiology-related disciplines.

**PHPH 752D - Neurobiology Basics Module: Neurophysiology (2 Credits)**

Principles required for understanding neurophysiological processes and integrated nervous system functions. Each 5-week module provides fundamentals of particular aspects of neurobiology, including neuroanatomy, neurophysiology, neurochemistry, molecular neurobiology, and neuropharmacology, or skills necessary for research in neurobiology-related disciplines.

**PHPH 752E - Neurobiology Basics Module: Physiology for Neurobiologists (2 Credits)**

Principles of physiological processes and the nervous system control of such processes. Each 5-week module provides fundamentals of particular aspects of neurobiology, including neuroanatomy, neurophysiology, neurochemistry, molecular neurobiology, and neuropharmacology, or skills necessary for research in neurobiology-related disciplines.

**PHPH 752F - Neurobiology Basics Module: Neuropharmacology (2 Credits)**

Principles of neuropharmacology and how drugs act on the nervous system. Each 5-week module provides fundamentals of particular aspects of neurobiology, including neuroanatomy, neurophysiology, neurochemistry, molecular neurobiology, and neuropharmacology, or skills necessary for research in neurobiology-related disciplines.

**PHPH 752G - Neurobiology Basics Module: Molecular Neurobiology (2 Credits)**

Principles related to cellular and molecular control of neurobiological processes. Each 5-week module provides fundamentals of particular aspects of neurobiology, including neuroanatomy, neurophysiology, neurochemistry, molecular neurobiology, and neuropharmacology, or skills necessary for research in neurobiology-related disciplines.

**PHPH 752H - Neurobiology Basics Module: Quantitative Methods in Neurobiology (2 Credits)**

Principles for quantifying changes related to neurobiological research. Each 5-week module provides fundamentals of particular aspects of neurobiology, including neuroanatomy, neurophysiology, neurochemistry, molecular neurobiology, and neuropharmacology, or skills necessary for research in neurobiology-related disciplines.

**PHPH 752I - Neurobiology Basics Seminar (2 Credits)**

Novel topics in neurobiology offered as the field progresses. Each 5-week module provides fundamentals of particular aspects of neurobiology, including neuroanatomy, neurophysiology, neurochemistry, molecular neurobiology, and neuropharmacology, or skills necessary for research in neurobiology-related disciplines.

**PHPH 753A - Neurobiology of Disease Module: Stress, Anxiety Disorders, and the Amygdala (2 Credits)**

Team taught modules integrate the clinical, basic, technical, and social issues surrounding the neurobiological basis of anxiety. Research-oriented and literature-based approaches integrate the molecular, cellular, systems, and translational levels of stress, the amygdala, and anxiety disorders. Team taught, 5-week modules integrate the clinical, basic, technical, and ethical issues surrounding a specific neurobiological disease. Modules focus on research oriented and literature-based approaches to the molecular, cellular, systems, and translation.

**PPHH 753B - Neurobiology of Disease Module: Stress, Depression, and Hippocampus (2 Credits)**

Team-taught modules integrate the clinical, basic, technical, and social issues surrounding the neurobiological basis of depression. Research-oriented approach integrates the molecular, cellular, systems, and translational levels of stress, the hippocampus, and depression. Team taught, 5-week modules integrate the clinical, basic, technical, and ethical issues surrounding a specific neurobiological disease. Modules focus on research oriented and literature-based approaches to the molecular, cellular, systems, and translation.

**PPHH 753C - Neurobiology of Disease Module: Degenerative Diseases of Old Age (2 Credits)**

Team-taught modules integrate the clinical, basic, technical, and social issues surrounding the neurodegenerative diseases associated with aging. Research-oriented approaches integrate the molecular, cellular, systems, and translational levels of disorders such as Parkinsons, Alzheimers, and stroke. Team taught, 5-week modules integrate the clinical, basic, technical, and ethical issues surrounding a specific neurobiological disease. Modules focus on research oriented and literature-based approaches to the molecular, cellular, systems, and translation.

**PPHH 753D - Neurobiology of Disease Module: Chronic Pain and Analgesia (2 Credits)**

Team-taught modules integrate the clinical, basic, technical, and social issues surrounding the neurobiological basis of pain. Research-oriented and literature-based approaches integrate the molecular, cellular, systems, and translational basis of chronic pain and its treatment. Team taught, 5-week modules integrate the clinical, basic, technical, and ethical issues surrounding a specific neurobiological disease. Modules focus on research oriented and literature-based approaches to the molecular, cellular, systems, and translation.

**PPHH 753E - Neurobiology of Disease Module: Schizophrenia, Prefrontal Cortex, and Executive Function (2 Credits)**

Team-taught modules integrate the clinical, basic, technical, and social issues surrounding the neurobiological basis of disorders of cognition such as schizophrenia. Research-oriented approaches integrate the molecular, cellular, systems, and translational aspects of prefrontal cortex control of executive function and its role in schizophrenia. Team taught, 5-week modules integrate the clinical, basic, technical, and ethical issues surrounding a specific neurobiological disease. Modules focus on research oriented and literature-based approaches to the molecular, cellular, systems, and translation.

**PPHH 753F - Neurobiology of Disease Module: Epilepsy (2 Credits)**

Team-taught modules integrate the clinical, basic, technical, and social issues surrounding the neurobiological basis of epilepsy. Research-oriented and literature-based approaches integrate the molecular, cellular, systems, and translational levels of seizure disorders and their treatment. Team taught, 5-week modules integrate the clinical, basic, technical, and ethical issues surrounding a specific neurobiological disease. Modules focus on research oriented and literature-based approaches to the molecular, cellular, systems, and translation.

**PPHH 760 - Clinical Problems in Anesthesia (1-3 Credits)**

Tutorial instruction in anesthesia. This course may be repeated up to a maximum of 6 credits total.

**PPHH 761 - Principles and Practice of Anesthesia 1 (7 Credits)**

Foundational and basic concepts of anesthesia practice integrated into supervised clinical training to reinforce principles of anesthesia care.

**PPHH 762 - Principles and Practice of Anesthesia 2 (6 Credits)**

Foundational and advanced concepts of anesthesia practice integrated into supervised clinical training to reinforce principles of anesthesia care.  
**Prerequisites:** PPHH 761.

**PPHH 765 - Tutorials in Pharmacology and Physiology (1-3 Credits)**

Tutorial instruction in pharmacology and physiology. This course may be repeated up to a maximum of 6 credits total.

**PPHH 770 - Seminar in Pharmacology and Physiology (1-2 Credits)**

Group discussions by students and staff based on literature surveys and current research in pharmacology and physiology.

**PPHH 772 - Seminar in Anesthesia (1-2 Credits)**

Group discussions by students and staff based on literature surveys and current research in anesthesia.

**PPHH 773 - Health Assessment in Anesthesia (1 Credit)**

Preoperative assessment, intraoperative management and postoperative management of patients receiving anesthesia. Development of cognitive and psychomotor skills needed to perform an advanced health assessment for patients undergoing anesthesia.

**PPHH 775 - Practicum I in Nurse Anesthesia (6 Credits)**

Introduction to the cognitive and clinical skills necessary to perform effective anesthesia in a supervised clinical setting.

**PPHH 777 - Pract II Nurse Anesthesia (6 Credits)**

Supervised clinical practicum in nurse anesthesia for students beginning their second year of training.

**Prerequisites:** PPHH 775.

**PPHH 779 - Practicum III Nurse Anesthesia (6 Credits)**

Advanced, supervised clinical practicum in nurse anesthesia for students in their second year of training.

**Prerequisites:** PPHH 777.

**PPHH 780 - Research in Pharmacology and Physiology (1-6 Credits)**

Graduate research designed by student in conjunction with research advisory committee.

**PPHH 781 - Practicum IV Nurse Anesthesia (6 Credits)**

To instruct nurse anesthesia students entering their third year of training to the advanced cognitive and clinical skills necessary to perform effective anesthesia in a supervised clinical setting.

**Prerequisites:** PPHH 779.

**PPHH 791 - Principles of Anesthesia I (1-5 Credits)**

Pre and post-operative evaluation, principles, and techniques of anesthesia, and the use of the anesthesia machine, ventilators, and monitoring equipment used in the administration of anesthesia. Course can be taken up to 5 total credits.

**PPHH 792 - Principles of Anesthesia II (1-5 Credits)**

Continuation of PCOL 791. Anesthetic techniques for specialty surgery including neurological, cardiovascular-thoracic, pediatric, and obstetrical surgery. May be repeated for a total of up to 5 credits.

**PPHH 795 - Physical-Chemical Basis of Anesthetic Action (3 Credits)**

Physical and chemical concepts and their relationships to the principles of anesthesia. Includes the behavior of gases and the gas laws, chemical composition of anesthetic agents and drugs.

**PPHH 797 - Professional Aspects of Nurse Anesthesia (3 Credits)**

An overview of the professional, practical, and educational issues of the practice of nurse anesthesia. Includes the history of anesthesia practice, psychological, and ethical issues, legal aspects of anesthesia practice, and current trends in anesthesia practice.

**PHPH 798 - Biomedical Sciences for Nurse Anesthesia (3 Credits)**

Human anatomy, biochemistry, and pathological processes necessary for the practice of the health-related professions.

**PHPH 899 - Dissertation Preparation (1-12 Credits)**

## Physical Education (PEDU)

**PEDU 510 - Teaching Health Related Physical Fitness (3 Credits)**

Knowledge and application of processes and principles of health related physical fitness in physical education and sport settings.

**Prerequisites:** EXSC 223/EXSC 224 or BIOL 243/BIOL 244.

**PEDU 515 - Physical Education for Inclusion (3 Credits)**

Designing physical education programs for special populations and for students with special needs.

**Prerequisites:** PEDU 340, PEDU 360.

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy

**PEDU 520 - Observational Analysis of Sports Techniques and Tactics (3 Credits)**

Qualitative and quantitative techniques to observe, describe, analyze, and evaluate human movement in physical education and sports settings.

**Prerequisites:** PEDU 190, EXSC 223, EXSC 224 or BIOL 243, BIOL 244; PHYS 101.

**PEDU 553 - The Organization and Administration of Physical Education (3 Credits)**

Organization of instructional, intramural, interscholastic, and recreational programs, with emphasis on criteria for the evaluation and selection of activities.

**Prerequisites:** 18 credits in physical education, including six semester hours of professional skill courses.

**PEDU 555 - Current Topics in Physical Education (1-3 Credits)****PEDU 570 - Human Child/Adolescent Growth (3 Credits)**

Human physical growth and development of children with emphasis on years 4 to 18.

**Prerequisites:** EXSC 223, EXSC 224, or equivalent.

**PEDU 575 - Physical Education for the Classroom Teacher (3 Credits)**

Appropriate movement experiences for children. Not available for physical education majors.

**Prerequisites:** EDTE 201.

**PEDU 577 - Dance Performance (3 Credits)**

Rehearsal, choreographic analysis, and dance performance. All components of dance production—including music, costume, lighting, and scenery—will be considered.

**Cross-listed course:** DANC 577

**PEDU 635 - South Carolina Physical Education Curriculum (3 Credits)**

Development of physical education programs using the South Carolina Physical Education Curriculum Materials.

**PEDU 637 - Advanced Theory and Techniques of Coaching Football (3 Credits)**

An intensive investigation of current theories of offensive and defensive football. Generalship, strategy, conditioning, staff utilization, film analysis, and practice organization are covered in depth.

**Prerequisites:** current responsibilities or previous experience in college or high school coaching.

**PEDU 638 - Advanced Theory and Techniques of Coaching Basketball (3 Credits)**

An intensive investigation of the latest techniques and theories of coaching basketball. Systems of offense and defense, generalship, conditioning, staff utilization, film analysis, and practice organization are covered in depth.

**Prerequisites:** current responsibilities or previous experience in college or high school coaching.

**PEDU 639 - Advanced Theory and Techniques of Coaching Track and Field Events (3 Credits)**

A thorough study of the latest techniques of coaching track and field events. Isometric, isotonic, and interval conditioning theories involving the cardiovascular and muscular systems are examined to acquaint the student with varying physiological approaches to conditioning.

**Prerequisites:** current responsibilities or previous experience in college or high-school coaching.

**PEDU 640 - Advanced Theory and Techniques of Teaching and Officiating Girls' Gymnastics (3 Credits)**

A thorough study of the latest techniques of teaching and officiating girls' gymnastics. Balance beam, vaulting, uneven bars, tumbling, dance skills and routines, and officiating methods.

**PEDU 650 - The Art and Science of Coaching (3 Credits)**

Coaching principles and application to sport programs across a variety of developmental levels.

**PEDU 660 - Counseling Student Athletes (3 Credits)**

Issues facing student athletes regarding their personal and career development beyond athletics.

**Cross-listed course:** EDCE 650

**PEDU 702 - Interpretation and Implementation of Physical Education Programs for Children (3 Credits)**

An intensive investigation of contemporary physical education programs for children.

**PEDU 703 - Conceptual Issues in Teaching Physical Education (3 Credits)**

Advanced study of current literature and research in physical education.

**PEDU 704 - Readings and Research in Physical Education Teaching and Teacher Education (3 Credits)**

Advanced study of seminal literature and research in physical education teaching and teacher education.

**Prerequisites:** PEDU 703.

**PEDU 705 - Applied Theories of Perceptual-Motor Learning in Physical Education (3 Credits)**

Analysis of theories and principles of perceptual-motor and motor development of infants and children. Emphasis is placed upon reviewing current research as it applies to the physical education setting.

**PEDU 709 - Anthropometric Measures and Their Uses (3 Credits)**

Research procedures in measuring and rating human somatic variables. Experience in taking measurements on children and adults. Discussion of instruments, rating scales, positioning subjects, locating landmarks, and attaining consistency. Consideration of reliability and relevance in use of photographs, roentgenograms, casts, and direct measures.

**PEDU 710 - Measurement and Research in Physical Education (3 Credits)**

The treatment of current theory and practice of testing, evaluation, and research in physical education, with emphasis on the methods and tools of research.

**Prerequisites:** PEDU 545.

**PEDU 715 - Introduction to Adapted Physical Education, Activity, and Sport (3 Credits)**

Focuses on content knowledge foundational to adapted physical education, activity, and sport programs in self-contained and/or itinerant settings for children with moderate to severe disabilities.

**PEDU 716 - Universal Design for Learning in General Physical Education (3 Credits)**

Focuses on knowledge and skills to design and implement an effective curriculum design, lesson planning and assessment for inclusive physical education settings.

**PEDU 717 - Practicum in Adapted Physical Education (3 Credits)**

Focuses on the techniques, methodologies, and philosophies of adapted physical education teachers.

**PEDU 720 - Theories and Principles of Motor Learning and Control: Applications for Adapted Physical Education (3 Credits)**

Focuses on the knowledge of principles/theories of learning and memory applied to motor skill acquisition with an emphasis on factors influencing and the development of successful instructional and training strategies among individuals with disabilities.

**PEDU 722 - Curriculum Development in Physical Education (3 Credits)**

Principles of physical education based upon physiology, psychology, and sociology; curriculum-making procedures; plans and regulations for the conduct of the curriculum in physical education; criteria for the evaluation and selection of activities; evaluation, measurement, and grading procedures; and the formulation of a curriculum outline for elementary, junior high, and senior high schools.

**PEDU 725 - Supervision in Physical Education (3 Credits)**

Theory and practice of supervision of student teaching practica in physical education.

**Prerequisites:** EDUC 731.

**PEDU 729 - Study of the Teaching of Physical Education (3 Credits)**

Study of the analysis of teaching applied to the development of effective teaching skills in physical education.

**PEDU 730 - Psychosocial Aspects of Athletic Performance and Injury Rehabilitation (3 Credits)**

The application of psychological principles from motivation, arousal regulation, individual differences and psychological skills for enhancing athletic performance and injury rehabilitation.

**PEDU 731 - Motor Skill Learning (3 Credits)**

Study of sensory, motor and physical processes that underlie learning and performance of motor skills commonly performed in physical education, sport and dance.

**PEDU 732 - Analysis of Instructional Behavior in Physical Activity Programs (3 Credits)**

Research-based study of strategies, delivery systems, and clinical, school, and community-based programs in physical activity.

**PEDU 741 - Readings in the Social History of Sport (3 Credits)**

Reading and discussion of the critical and analytical literature on sport history.

**Cross-listed course:** HIST 741

**PEDU 750 - Historical and Philosophical Foundations of Physical Education (3 Credits)**

A study of the historical and philosophical bases of physical education. Emphasis will be placed on the integration and application of this information to the formulation of a practical philosophy of physical education.

**PEDU 751 - Principles of Adapted Sport Coaching (3 Credits)**

An overview of teaching and training athletes with different disabilities and challenges. Program management and preparing for coaching and competition.

**Prerequisites:** PEDU 715.

**PEDU 755 - Selected Topics in Physical Education (3 Credits)**

A study of selected issues confronted in physical education programs.

**Prerequisites:** 15 hours in graduate courses in physical education.

**PEDU 770 - Research Methods in Physical Education (3 Credits)**

A study of applicable methods and tools of research in physical education and motor behavior. Provision for students to engage in original research.

**PEDU 771 - Theories and Principles of Growth and Motor Behavior: Applications for Adapted Physical Education (3 Credits)**

Focuses on knowledge of growth and motor development principles from theory and research with applications for teaching and coaching individuals with disabilities.

**PEDU 778A - Directed Student Teaching in Physical Education I (6 Credits)**

Student teaching at the elementary or secondary level combined with planning and initiation of an action research project to demonstrate knowledge, skills, and dispositions related to teaching physical education.

**Corequisite:** PEDU 778B.

**PEDU 778B - Directed Student Teaching in Physical Education II (6 Credits)**

Student teaching at the elementary or secondary level combined with completion of an action research project to demonstrate knowledge, skills, and dispositions related to teaching physical education.

**Corequisite:** PEDU 778A.

**PEDU 784 - Theory and Application of Effective Teaching Strategies in Physical Education (3 Credits)**

Study of effective teaching in physical education. Acquisition of advanced teaching skills beyond those required for basic certification.

**PEDU 788 - Action Research Project in Adapted Physical Education (3 Credits)**

Focuses on knowledge and skills to design and implement an action research project designed for self-reflective systematic inquiry and improvement of teaching in inclusive physical education settings.

**PEDU 790 - Independent Study (1-3 Credits)**

Topics to be assigned and approved by advisor, graduate director, and department head.

**PEDU 791 - Practicum in Physical Education (0-3 Credits)**

Clinical and/or field experience in a variety of settings related to or dealing with physical activity. The practicum is designed to provide the student with in-depth experiences in a particular aspect of motor skill acquisition.

**PEDU 829 - Advanced Topics in Child and Adolescent Growth and Development (3 Credits)**

An interdisciplinary study of individual (physical and psychological), environmental and task related variables as they relate to motor skill performance, physical activity participation and athlete development.

**PEDU 830 - Development of Skilled Sport Performance (3 Credits)**

Development of cognitive and motor processes necessary for skilled performance in sport.

**Prerequisites:** PEDU 730 and either PSYC 501 or PSYC 712.

**PEDU 832 - Research Practicum in Motor Learning/Motor Performance (3 Credits)**

Scientific investigation of specific research problems in motor learning/motor performance.

**PEDU 833 - Research Practicum in Physical Education (1-6 Credits)**

Designing, conducting and interpreting research studies in physical education.

**PEDU 840 - Historical and Contemporary Perspectives on the Study of Teaching and Instruction (3 Credits)**

A survey and critical analysis of the field of research on teaching and instruction.

**PEDU 841 - Seminar in Research on Teaching in Physical Education (3 Credits)**

Interpretation and critical analysis of research on selected topics on teaching and instruction in physical education.

**PEDU 850 - Research, Theory, and Practice of Teacher Education in Physical Education (3 Credits)**

Research, theory, and methods of teacher education in physical education.

**PEDU 860 - Advanced Curriculum and Philosophy in Physical Education (3 Credits)**

Curriculum theory and design in physical education; implications of major philosophical positions, developmental and learning theory, and culture on the design and implementation of physical education curriculum.

**Prerequisites:** PEDU 722.

**PEDU 870 - Promoting Integrative Youth Physical Development (3 Credits)**

Examination of the synergistic nature of various physical, behavioral and psychological factors that promote positive trajectories of health in youth and how they are promoted across childhood and adolescence in physical education.

**PEDU 899 - Dissertation Preparation (1-12 Credits)**

## Physics (PHYS)

**PHYS 501 - Quantum Physics I (3 Credits)**

A self-contained treatment of quantum theory and its applications, beginning with the Schrodinger equation.

**Prerequisites:** C or better in PHYS 307 and MATH 242.

**PHYS 502 - Quantum Physics II (3 Credits)**

Advanced topics in quantum physics, plus topics in special relativity, high-energy physics, and cosmology.

**Prerequisites:** C or better in PHYS 501.

**PHYS 503 - Mechanics (4 Credits)**

Classical mechanics of particles, systems, and rigid bodies; discussion and application of Lagrange's equations, introduction to Hamiltonian formulation of mechanics.

**Prerequisites:** PHYS 206 or PHYS 211, MATH 242 or MATH 520.

**PHYS 504 - Electromagnetic Theory (4 Credits)**

Field theory of electric and magnetic phenomena; Maxwell's equations applied to problems in electromagnetism and radiation.

**Prerequisites:** C or better in PHYS 503.

**PHYS 506 - Thermal Physics and Statistical Mechanics (3 Credits)**

Principles of equilibrium thermodynamics, kinetic theory, and introductory statistical mechanics.

**Prerequisites:** C or better in PHYS 306.

**PHYS 509 - Solid State Electronics (4 Credits)**

Topics include: basic electrical circuits; electronic processes in solids; operation and application of individual solid state devices and integrated circuits. Three lecture and three laboratory hours per week.

**Prerequisites:** PHYS 207 or PHYS 212.

**PHYS 510 - Digital Electronics (3 Credits)**

Basic operation of digital integrated circuits including microprocessors. Laboratory application of microcomputers to physical measurements.

**Prerequisites:** C or better in PHYS 509.

**PHYS 511 - Nuclear Physics (4 Credits)**

An elementary treatment of nuclear structure, radioactivity, and nuclear reactions. Three lecture and three laboratory hours per week.

**Prerequisites:** C or better in PHYS 501.

**PHYS 512 - Solid State Physics (4 Credits)**

Crystal structure; lattice dynamics; thermal, dielectric, and magnetic properties of solids. Free electron model of metals. Band structure of solids, semi-conductor physics. Three lecture and three laboratory hours per week.

**Prerequisites:** PHYS 502.

**PHYS 514 - Optics, Theory, and Applications (4 Credits)**

Geometrical and physical optics; wave nature of light, lenses and optical instruments, interferometers, gratings, thin films, polarization, coherence, spatial filters, and holography. Three lecture and three laboratory hours per week.

**Prerequisites:** PHYS 306.

**PHYS 515 - Mathematical Physics I (3 Credits)**

Analytical function theory including complex analysis, theory of residues, and saddlepoint method; Hilbert space, Fourier series; elements of distribution theory; vector and tensor analysis with tensor notation.

**Prerequisites:** MATH 242.

**PHYS 516 - Mathematical Physics II (3 Credits)**

Group theory, linear second-order differential equations and the properties of the transcendental functions; orthogonal expansions; integral equations; Fourier transformations.

**Prerequisites:** PHYS 515.

**PHYS 517 - Computational Physics (3 Credits)**

Application of numerical methods to a wide variety of problems in modern physics including classical mechanics and chaos theory, Monte Carlo simulation of random processes, quantum mechanics and electrodynamics.

**Prerequisites:** C or better in PHYS 212 and MATH 142.

**PHYS 521 - Biophysics (4 Credits)**

Principles of physics applied to living systems: diffusion, friction, low Reynolds-number world, entropy, free energy, entropic/chemical forces, self-assembly, molecular machines, membranes.

**Prerequisites:** MATH 142, PHYS 212, CHEM 112, BIOL 102.

**PHYS 531 - Advanced Physics Laboratory I (1-3 Credits)**

A laboratory program designed to develop a combination of experimental technique and application of the principles acquired in formal course work. A maximum of eight hours per week of laboratory and consultation.

**PHYS 532 - Advanced Physics Laboratory II (1-3 Credits)**

A continuation of PHYS 531. Up to eight hours per week of laboratory and consultation.

**PHYS 541 - Advanced Experimental Physics I (4 Credits)**

Continuation of PHYS 310. Optical apparatus (telescope, microscope, interferometer) and advanced project planning including equipment design and budgeting.

**Prerequisites:** C or better in PHYS 310.

**PHYS 542 - Advanced Experimental Physics II (4 Credits)**

Continuation of PHYS 541. Study of topics from Advanced Optics, Astronomy, Biophysics, Digital Electronics, Nuclear/Particle Physics, or Solid State Physics, plus conduction of a physics experiment, including a written paper and an oral presentation.

**Prerequisites:** C or better in PHYS 541.

**PHYS 546 - Introduction to Astrophysics (3 Credits)**

This is an astrophysics course for physics students. The course will cover the basics of observational techniques, structure and evolution of stars, interstellar medium and star formation, structure and properties of the Milky Way and nearby galaxies, and generation and transfer of radiation in astrophysical environments.

**Prerequisites:** C+ or better in PHYS 307.

**PHYS 599 - Topics in Physics (1-3 Credits)**

Readings and research on selected topics in physics. Course content varies and will be announced in the schedule of classes by title.

**PHYS 701 - Classical Mechanics (3 Credits)**

Generalized coordinates, Lagrangian and Hamiltonian formulations, variational principles, transformation theory, and Hamilton-Jacobi equation.

**PHYS 703 - Classical Field Theory I (3 Credits)**

Development of classical fields; Maxwell's equations; boundary value problems; radiation theory.

**PHYS 704 - Classical Field Theory II (3 Credits)**

A continuation of PHYS 703.

**PHYS 706 - Statistical Thermodynamics (3 Credits)**

Statistics of Boltzmann, of Fermi and Dirac, and of Bose and Einstein, with applications.

**PHYS 708 - General Relativity and Cosmology (3 Credits)**

Introduction to the basic concepts of general relativity and a discussion of problems of current interest.

**Prerequisite or Corequisite:** PHYS 701, PHYS 704.

**PHYS 711 - Quantum Mechanics I (3 Credits)**

A development of non-relativistic quantum mechanics.

**PHYS 712 - Quantum Mechanics II (3 Credits)**

A continuation of PHYS 711.

**PHYS 713 - Advanced Quantum Theory (3 Credits)**

Second Quantization. Relativistic formulations of quantum mechanics.

**Prerequisites:** PHYS 712.

**PHYS 714 - Quantum Field Theory (3 Credits)**

Theory of quantized fields. Introduction to renormalization. A continuation of PHYS 713.

**Prerequisites:** PHYS 713.

**PHYS 715 - Many-Body Quantum Theory (3 Credits)**

Effective field theory, particle-hole, quasiparticles.

**Prerequisite or Corequisite:** PHYS 713.

**PHYS 721 - Subatomic Physics (3 Credits)**

Nuclear physics, mainly from the experimental standpoint.

**PHYS 723 - Elementary Particles I (3 Credits)**

Introduction to elementary particles. The quark model. Symmetry principles and conservation laws. Calculation of cross sections and decay rates using Feynman rules. Accelerators, particle detectors, and experiments.

**Prerequisites:** PHYS 701, PHYS 703, PHYS 711.

**Corequisite:** PHYS 712.

**PHYS 724 - Elementary Particles II (3 Credits)**

Experimentally accessible processes and their description using the framework developed in PHYS 723. Gauge theories and the standard model. Particle experiments for the next decade and their underlying physics descriptions.

**Prerequisites:** PHYS 723

**PHYS 725 - Solid State Physics (3 Credits)**

The crystalline state of matter and its main characteristics. Electric and magnetic properties of metals, semiconductors, and insulators.

**PHYS 726 - Superconductivity (3 Credits)**

Theory and description of conventional and high temperature superconductors and their properties.

**PHYS 727 - Magnetic Resonance (3 Credits)**

Basic theory. Electron spin resonance. High resolution and wide-line nuclear magnetic resonance. MÃssbauer effect. Magnetic resonance and dielectric relaxation.

**PHYS 728 - Quantum Optics - Understanding Light-Matter Interactions (3 Credits)**

Semi-classical and fully quantum-mechanical treatments of interactions between matter and electromagnetic fields on the microscopic level.

**Prerequisites:** Undergraduate quantum mechanics.

**PHYS 729 - Applied Group Theory (3 Credits)**

Groups and representations. Full rotational group. Angular momentum. Ligand field theory. Application to atomic, molecular, and nuclear physics.

**PHYS 730 - Graduate Seminar (1 Credit)**

Presentation by the student of a designated topic. May be repeated for credit.

**PHYS 731 - Extragalactic Astrophysics (3 Credits)**

Extragalactic astrophysics, including nearby and distant galaxies, active galaxies, galaxy clusters, large-scale structure, galaxy formation/evolution, scale structure, galaxy formation/evolution, basics of cosmology, cosmic radiation backgrounds, and observation constraints on cosmological models.

**Prerequisites:** PHYS 701, PHYS 703, and ASTR 211 or equivalent.

**PHYS 740 - Selected Topics in Physics (1-3 Credits)**

Course content varies and will be announced in the schedule of classes by title.

**PHYS 745 - Topics in Nuclear Physics (1-3 Credits)**

Course content varies and will be announced in the schedule of classes by title.

**PHYS 746 - Principles of Astrophysics (3 Credits)**

This is an astrophysics course for physics graduate students. The course will cover the basics of observational techniques, structure and evolution of stars, interstellar medium and star formation, structure and properties of the Milky Way and nearby galaxies, and generation and transfer of radiation in astrophysical environments.

**Prerequisites:** C+ or better in PHYS 307, PHYS 503, PHYS 506.

**PHYS 750 - Topics in Solid State Physics (1-3 Credits)**

Course content varies and will be announced in the schedule of classes by title.

**PHYS 751 - The Physics of Radiation Therapy (3 Credits)**

Description of ionizing and non-ionizing radiation, interaction of radiation with matter, and radiation detection and dosimetry.

**PHYS 752 - Health Physics - Radiation and Nuclear Physics (3 Credits)**

Radioactive decay and ionizing radiation. Calculation of occupational exposure and biological effects of radiation exposure. Introduction to Radiological Control Systems, Shielding, Dose Determination, Safety Protocols.

**PHYS 753 - The Physics of Medical Imaging (3 Credits)**

Describing basics of imaging science, x-ray imaging modalities including basic principles, detectors, scattered radiation, planar imaging, CT, fluoroscopic imaging, nuclear medicine imaging, ultrasound and MRI, and computers in imaging.

**PHYS 755 - Topics in Theoretical Physics (1-3 Credits)**

Course content varies and will be announced in the schedule of classes by title.

**PHYS 760 - Research (1-6 Credits)**

Introduction to and the application of the methods of research.

**PHYS 761 - Research (1-6 Credits)**

Introduction to and the application of the methods of research.

**PHYS 781 - Astronomy for Teachers (3 Credits)**

A one semester survey of astronomy. Observational techniques and current developments. Primarily for M.A.T./I.M.A. and M.Ed. students. Not available for M.S. and Ph.D. credit in physics.

**PHYS 782 - Topics in Contemporary Physical Sciences for Teachers (3-4 Credits)**

Discussions designed to provide teachers with simple physical explanations of subjects including: nuclear energy, black holes, quarks, strange particles, perception of color, integrated circuits, computers, TV games, and other topics of current interest. Primarily for M.A.T. and M.Ed. students. Not available for M.S. and Ph.D. credit in physics.

**PHYS 783 - Modern Physics for Teachers (3 Credits)**

Basic concepts of modern physics. The experimental basis for quantum theory and the theory of relativity. Fundamental concepts of modern physics. Primarily for M.A.T. and M.Ed. students. Not available for M.S. and Ph.D. credit in physics.

**PHYS 784 - Topics in Light and Sound for Teachers (3 Credits)**

Topics in modern optics and acoustics are discussed in a framework appropriate for school teachers. Primarily for M.A.T. and M.Ed. students. Not available for M.S. and Ph.D. credit in physics.

**PHYS 785 - Electronics for Teachers (3 Credits)**

Basic electronics with emphasis on measurement and laboratory procedures. Operation and application of semiconductor devices and integrated circuits. Primarily for M.A.T. and M.Ed. students. Not available for M.S. and Ph.D. credit in physics.

**PHYS 786 - Teaching Physics on the Internet (3 Credits)**

Web-based resources for assigning and grading individualized homework and tests and for creating instructional units in physics and physical sciences. Not available for M.S./Ph.D. physics majors.

**PHYS 787 - Design of Physics Laboratory and Demonstration Experiments for Teachers (3 Credits)**

Design and performance of demonstrations and experiments to display physical phenomena to students. Qualitative and quantitative experiments. Primarily for M.A.T. and M.Ed. students. Not available for M.S. and Ph.D. credit in physics.

**PHYS 788 - Physics for AP Teachers (3 Credits)**

Preparation of teachers for developing and teaching an advanced placement course in physics. Primarily for M.A.T./I.M.A. and M.Ed. students. Not available for M.S. or Ph.D. credit in physics.

**PHYS 789 - Physics for Teachers of Mathematics (3 Credits)**

Teacher preparation for creating and solving word problems using conservation laws and symmetries found in physics and physical science and linked to the South Carolina Mathematics Standards. Primarily for M.A.T./I.M.A. and M.Ed. students. Not available for M.S. or Ph.D. credit in physics.

**PHYS 799 - Thesis Preparation (1-9 Credits)**

CL: 2020.

**PHYS 899 - Dissertation Preparation (1-12 Credits)**

CL: 2020.

## PHYT - Physical Therapy (PHYT)

**PHYT 701 - Human Musculoskeletal and Gross Anatomy (5 Credits)**

Intensive study and analysis of the morphologic, functional and imaging anatomy of the human body. Emphasis on the relationship of form and function as a basis for understanding of human movement.

**PHYT 702 - Musculoskeletal and Gross Anatomy Dissection (3 Credits)**

In depth, hands on study and analysis of the major gross anatomical structures, their relationships to each other and the clinical importance through cadaveric dissection.

**PHYT 720 - Fundamentals of Physical Therapy (4 Credits)**

An overview of the profession and basic skills needed by the physical therapist related to patient evaluation and management.

**PHYT 721 - Health Promotion & Wellness in Physical Therapy (2 Credits)**

Presents the role of the physical therapist in health promotion and wellness for patients/clients and the community.

**PHYT 731 - Mechanisms of Motor Skill Performance (3 Credits)**

A study of theories and mechanisms involved in human movement. Focus is on analysis of principles and systems of gross motor control and learning.

**PHYT 740 - Professional Issues in Physical Therapy (2 Credits)**

PHYT 740 is designed to allow you to enhance patient interaction through the development of professional communication skills, to explore professional ethics and the APTA Core Values, and to foster a professional identity.

**PHYT 741 - Clinical Documentation in Physical Therapy (1 Credit)**

Enhance patient interaction through the development of professional communication skills, to develop appropriate documentation skills, and to foster a professional identity.

**PHYT 750 - Orthopedic Physical Therapy I (4 Credits)**

Principles of physical therapy evaluation and treatment of people with orthopedic disorders involving the cervical spine and/or upper extremity.

**PHYT 751 - Orthopedic Physical Therapy II (3 Credits)**

Principles of physical therapy evaluation and treatment of people with orthopedic disorders involving the lumbar spine and/or lower extremity.

**PHYT 752 - Orthopedic Integration in Physical Therapy (4 Credits)**

An advanced course to enhance physical therapy students' knowledge of orthopedic examination tests and manual therapy interventions. Emphasis will be placed on diagnostic accuracy of special tests (sensitivity, specificity, likelihood ratios, reliability and validity), interpretation of the results, proper execution, and integration of manual techniques into clinical practice.

**PHYT 753 - Research Proposal Development (1 Credit)**

Fundamentals of developing a research proposal.

**PHYT 754 - Manual Therapy I (3 Credits)**

Joint and soft tissue mobilization and manipulation techniques.

**PHYT 755 - Manual Therapy II (3 Credits)**

Techniques will include spinal mobilization, mobilization with movement, manipulation, muscle energy, taping, soft tissue mobilization and integration of techniques into clinical practice.

**PHYT 756 - Integumentary Physical Therapy (2 Credits)**

Physical therapy management of patients with integumentary disorders.

**PHYT 757 - Pharmacology for the Physical Therapist (2 Credits)**

Management of the physical therapy patient on selected medications.

**PHYT 758 - Patient Education in Physical Therapy (1 Credit)**

Role of the physical therapist in professional and patient education.

**PHYT 759 - Therapeutic Exercise (2 Credits)**

Therapeutic exercise for the orthopedic patient: selection of techniques, rate of progression and modification.

**PHYT 760 - Orthotics and Prosthetics (2 Credits)**

Management of patients with amputations, prosthetics, and orthotics.

**PHYT 761 - Pain Mechanisms and Treatment (2 Credits)**

This course will address the theoretical models for understanding the basis for pain. Pain assessment and physical therapy pain management will be addressed. Emphasis will be placed on the development of clinical decision-making and problem solving.

**PHYT 763 - Biophysical Agents in Physical Therapy (1 Credit)**

This course studies theoretical and practical applications for safe, effective use of biophysical agents commonly used in physical therapy settings using evidence based practice.

**PHYT 764 - Cultural Competence in Health Care (3 Credits)**

Cultural competencies necessary for the delivery of health care to patients of diverse ethno-cultural heritages.

**PHYT 765 - Geriatric Physical Therapy (2 Credits)**

Fundamental principles for assessment, treatment and overall foundations of geriatric physical therapy based upon the best available evidence.

**PHYT 766 - Essentials of Cardiopulmonary Physical Therapy (3 Credits)**

Physical therapy management of patients/clients with acute and chronic cardiac and/or pulmonary dysfunction.

**PHYT 770 - Acute Care Physical Therapy (3 Credits)**

Cognitive and motor skills required in the management of the acute care physical therapy patient.

**PHYT 777 - Special Topics in Physical Therapy (1-3 Credits)**

A study of selected issues in the field of physical therapy. Course content varies by title. May be repeated for credit as topics vary for a maximum of 6 credit hours total.

**PHYT 782 - Functional Anatomy (4 Credits)**

Biomechanical principles underlying motor control and selected techniques used to quantify human movement.

**PHYT 785 - Seminar in Physical Therapy (1 Credit)**

Critical review of professional literature pertaining to clinical practice in physical therapy. Repeatable for credit.

**PHYT 786 - Research Seminar in Physical Therapy (1 Credit)**

Presentation and discussion of current research topics in physical therapy.

**PHYT 787 - Seminar and Research in Physical Therapy (1 Credit)**

Presentation of physical therapy research, article reviews, and clinical in-services. This course deals with the scientific research process with direct application to the discipline of Physical Therapy.

**PHYT 788 - Evidence-Based Practice in Physical Therapy (2 Credits)**

Research design and analysis techniques necessary for applying evidence-based practice to the clinical physical therapy setting.

**PHYT 790 - Independent Study (1-3 Credits)**

Topics to be approved by advisor and graduate director. Pass/fail grading.

**PHYT 806 - Differential Diagnosis and Clinical Reasoning for Physical Therapists (2 Credits)**

Students will gain knowledge and expertise to competently screen for systemic diseases, interpret clinical findings and differentially diagnose movement related impairments from medical conditions that can mimic symptoms of neuromusculoskeletal problems. Emphasis will be placed on Skills necessary to identify patient/client problems that require referral to another health professional.

**PHYT 807 - Neuroplasticity and Genetics in Physical Therapy (1 Credit)**

A study of neuroplasticity and genetics in relation to motor rehabilitation. Focus is on the analysis and application of key constructs in the design and implementation of rehabilitation interventions in individuals with neurologic diagnoses.

**PHYT 808 - Neuro Repair - Rehabilitation (3 Credits)**

Examination of neural repair and rehabilitation from a clinical perspective.

**PHYT 809 - Neuromuscular Assessment and Treatment I (3 Credits)**

Neurological conditions and interventions commonly used in physical therapy practice.

**PHYT 810 - Neuromuscular Assessment and Treatment II (4 Credits)**

Neurological conditions and interventions commonly used in physical therapy practice.

**PHYT 811 - Pediatric Physical Therapy (3 Credits)**

Assessment and evaluation of selected pediatric conditions.

**PHYT 815 - Management of Physical Therapy Practice (2 Credits)**

Theory and application of management supervision and leadership skills necessary for the practice of physical therapy.

**PHYT 850 - Clinical Experience in Physical Therapy I (6 Credits)**

A 320 hour clinical education experience to develop physical therapy management skills of orthopedic patients.



**PHYT 851 - Clinical Experience in Physical Therapy II (4 Credits)**

Supervised clinical experience in a physical therapy setting.

**PHYT 852 - Clinical Experience in Physical Therapy III (6 Credits)**

Supervised clinical experience in a physical therapy setting.

**PHYT 853 - Clinical Experience in Physical Therapy IV (6 Credits)**

Supervised clinical experience in a physical therapy setting.

**PHYT 860 - Clinical Experience in Physical Therapy IVa (1 Credit)**

An 80 hour clinical education experience to demonstrate professional behaviors while safely managing a partial caseload.

**PHYT 861 - Clinical Experience in Physical Therapy IVb (5 Credits)**

A 400 hour clinical education experience to develop physical therapy management skills in a setting preferred by the student.

**Prerequisites:** PHYT 860.

**PHYT 888 - Research Project in Physical Therapy (1-6 Credits)**

Clinically based research project in physical therapy.

**PHYT 899 - Dissertation Preparation (1-12 Credits)**

CL: 2020.

## Political Science (POLI)

**POLI 502 - Methods of Political Analysis (3 Credits)**

Quantitative techniques in political science; levels of measurement; problems of description, causation, and inference.

**POLI 503 - American Political Thought (3 Credits)**

Themes and thinkers in American political history.

**POLI 504 - Politics and Ethics (3 Credits)**

The nature of, and relationship between, politics and ethics.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

**POLI 505 - Utopian Political Thought (3 Credits)**

A critical examination of utopian and dystopian political ideas.

**POLI 542 - Research in Language Conflict and Language Rights (3 Credits)**

Research into the parameters governing linguistic conflicts and language rights issues, involving a close examination of the nexes of language and individual and ethnic identity, culture, dialects, bilingualism. Examination of regional, national, and international case studies, with particular attention to nationalism, language revitalization, and language planning.

**Cross-listed course:** LING 542

**POLI 554 - Law and Society (3 Credits)**

The American judicial system, including the decision to resolve disputes by legal means, political influence on the legal system, the social impact of legal rulings, the relationship of the courts to other branches of government, and the applicability of higher law concepts in judicial decision making.

**POLI 567 - American Local Government (3 Credits)**

An introduction to the institutions, functions, policy-making processes, and politics of American local government.

**POLI 569 - State and Local Government (3 Credits)**

This course will examine the purpose, structure, and functions of state governments and their local subdivisions. Requires special permission of department. Restricted to social studies teachers.

**POLI 570 - South Carolina Government and Politics (3 Credits)**

South Carolina state and local government in the context of South Carolina history and U.S. state and local government.

**POLI 591 - Special Topics in Political Science (3 Credits)**

Intensive study of special topics in Political Science. May be repeated as content varies by title.

**POLI 700 - The Political Science Discipline and Profession (3 Credits)**

Examines political science as a profession and discipline, reviews teaching techniques and issues, and develops dissertation and original research proposals.

**POLI 701 - Theories of Political Inquiry (3 Credits)**

A brief overview of the growth of the social sciences and of the history of the American discipline of political science in the 20th century, including an examination of the rise of behavioralism. Study of the principles of neo-positivist political inquiry, including problems of empirical research and research design.

**POLI 702 - Institutional and Behavioral Theories of Politics (3 Credits)**

Introduction to the institutional and behavioral theories used to explain political phenomena.

**Prerequisites:** POLI 701.

**POLI 703 - Democratic Theory (3 Credits)**

Critical study of theories of democracy.

**POLI 704 - Political Theory and Feminism (3 Credits)**

How contemporary feminist theory has responded to and reformulated traditional theories about the role and nature of women.

**Cross-listed course:** WGST 704

**POLI 705 - Theory of Marxism (3 Credits)**

Critical study of the development of Marxist theory.

**POLI 706 - Advanced Methods of Political Analysis (3 Credits)**

Advanced techniques and approaches to multivariate analysis of empirical data in the context of political problems and events.

**Prerequisites:** POLI 502 or POLI 515.

**POLI 707 - Classics of Political Theory (3 Credits)**

Introduction to the nature and tradition of political theory; readings from selected political theorists.

**POLI 708 - Women in American Politics (3 Credits)**

Impact of gender in American politics; elections, representation, rights, social movements, legal institutions, and public policy. Explores class, race, and sexuality issues within gender.

**Cross-listed course:** WGST 708

**POLI 709 - Qualitative Methods of Political Analysis (3 Credits)**

Techniques and approaches to qualitative analysis of political problems and events. Topics include field research, interviewing, case studies, content analysis, archival research, and presentation of data.

**POLI 710 - Introduction to International Relations (3 Credits)**

An introduction to the field of international relations, including causes of war, world order, international distribution of wealth, durability of state system, and the individual in the world system.

**POLI 711 - Directed Research in Political Science (3 Credits)**

Political science Ph.D. students will work with a faculty mentor in their primary field to produce an original paper suitable for presentation at a national or regional professional conference.

**POLI 715 - International Relations Theory (3 Credits)**

Systematic survey, analysis, and comparison of major contemporary theoretical works in international relations.

**POLI 717 - Comparative Foreign Policy (3 Credits)**

A seminar treating the development, interests, formulation, and conduct of the modern foreign policies of selected states, with special reference to their interactions with other states' policies.

**POLI 718 - Revolution and Politics (3 Credits)**

An analytical investigation of political violence in the international arena, its sources, internal and external bases, and consequences for political behavior within and among states in the contemporary international system.

**POLI 719 - Political and Social Change (3 Credits)**

Systematic survey, analysis, and comparison of major contemporary theoretical works on political and social change.

**POLI 720 - Political Communication (3 Credits)**

The role of communication in creating collective political reality, with particular attention to how governmental, economic, professional, and cultural factors influence media organizations.

**POLI 721 - Race and Public Policy (3 Credits)**

A survey of the most recent and state-of-the-art scholarship on race and American policy.

**POLI 724 - Religion and Politics (3 Credits)**

Religion as a factor in the comparative politics and international relations of states and societies.

**Cross-listed course:** RELG 724

**POLI 725 - International Conflict (3 Credits)**

Survey, analysis, and comparison of theory and research findings on the nature, conditions, and causes of international conflict and violence.

**POLI 726 - Seminar in Judicial Politics (3 Credits)**

An introduction to the academic literature on American courts and judicial politics.

**POLI 727 - Models for Understanding Political Institutions (3 Credits)**

A survey of the literature on empirical and game theory methods.

**Prerequisites:** POLI 502 and POLI 706.

**POLI 728 - Judicial Politics in Europe and the Common Law World (3 Credits)**

A comparative study of courts of Europe and the and the common law courts of modern democracies (especially Australia, Canada, India, and the United Kingdom). US state courts will also be examined from a comparative perspective.

**POLI 729 - Courts in Developing Countries (3 Credits)**

A comparative study of courts, judicial process, and judicial behavior, and the role of courts in politics focusing on the common law and civil law courts of Latin America, Africa, and Asia.

**POLI 731 - Government and Politics of Latin America (3 Credits)**

This course examines the nature of democracy and democratic transitions, the relationship between economic and political development, and the causes and effects of different economic development strategies in Latin America.

**POLI 732 - International Law (3 Credits)**

Study of the role of law in international relations, emphasizing both substantive and theoretical problems relating to development of systems of law in such areas as war, protection of human rights, outer space and oceans, and international commerce.

**POLI 733 - International Organization (3 Credits)**

Examination of theoretical and substantive problems relating to the development and functioning of international intergovernmental and nongovernmental organizations.

**POLI 734 - Economics of International Politics (3 Credits)**

Study of the international political significance of economic issues relating to monetary reform, trade, aid, and economic development.

**POLI 735 - International Cooperation (3 Credits)**

Approaches to the study of international cooperation, including international integration, community formation, regime formation, interdependence, international institutionalization, and global governance.

**POLI 736 - Public Opinion and Political Attitudes (3 Credits)**

Examines the determinants, content, and consequences of citizens' political beliefs and attitudes with attention to political culture, ideology, issue dynamics, and popular support for democratic principles.

**POLI 737 - Nationalism and Politics (3 Credits)**

Proseminar on the politics of nationalism from both the political sociology and international relations perspectives.

**POLI 740 - Formulation and Conduct of United States Foreign Policy (3 Credits)**

Study of the constitutional bases, institutions, instruments, and decision-making processes of U.S. foreign policy.

**POLI 741 - Contemporary United States Foreign Policy (3 Credits)**

Analysis and interpretation of the substantive problems of contemporary U.S. foreign policy.

**POLI 742 - Problems in National Security (3 Credits)**

Continuing problems and competing strategies involved in formulating a national security strategy for the U.S. Issues include the defense structure and budget; the National Security Council and the decision-making process; the volunteer Army and the role of the military in society; nuclear weapons and arms control.

**POLI 745 - Russian Foreign Policy (3 Credits)**

Study of the foreign policy of Russia and the other states of the former Soviet Union, including consideration of historical developments, institutions, capabilities, and strategic objectives.

**POLI 746 - Chinese Foreign Policy (3 Credits)**

A seminar on the Chinese tradition in foreign policy and the foreign policies of the Republic of China and the People's Republic of China, emphasizing the impact of domestic Chinese affairs on their foreign relations in the post-World War II period.

**POLI 747 - Japanese Foreign Policy (3 Credits)**

A seminar on the foreign policy of Japan with emphasis on the post-World War II period and on the analysis of Japanese objectives and capabilities in international relations.

**POLI 749 - International Relations of the Middle East (3 Credits)**

Foreign policies and international relations of the Middle East, focusing on relations within the region and with the West and Soviet bloc.

**POLI 751 - Policy Analysis I (3 Credits)**

Introduction to the theory and practice of policy analysis.

**POLI 752 - Policy Analysis II: Advanced Policy Analysis (3 Credits)**

Overview of methods used to evaluate public policies.

**Prerequisites:** POLI 771 or equivalent.

**POLI 753 - Capstone Seminar in Public Administration (3 Credits)**

Critical issues in public administration; term project integrating the material from other courses in the analysis of a contemporary problem. Field work and applied project required.

**Prerequisites:** 30 credit hours MPA program.

**POLI 754 - Public Accountability and Ethics (3 Credits)**

An examination of the legal, political, professional, and organizational accountability demands made on administrators; the interplay of these demands with the needs for ethical decision making and integrity.

**POLI 755 - Grants Administration (3 Credits)**

Analysis of grant and contract functions in government agencies; proposal writing; legal and fiscal requirements of grants administration.

**Cross-listed course:** EDRM 800

**POLI 756 - Introduction to Planning and Politics in the United States (3 Credits)**

Overview of contemporary planning in the United States at local, state, and national levels, with emphasis on the politics of planning at the local level of government. Includes theory of planning, history, problems in the planning process, and implementation of planning.

**POLI 757 - Health Politics (3 Credits)**

Analysis of issues and forces affecting health delivery through the public sector; major models of political decision making; and current health legislation.

**Prerequisites:** HSPM 700 and HSPM 782.

**POLI 758 - The State and Economic Life (3 Credits)**

A study of the relation of government to the economy in the modern world, including theories of the economic functions of the state.

**POLI 759 - Information Systems and Public Administration (3 Credits)**

The development and uses of information systems in local, state, and federal administrative agencies with emphasis on the management of information systems in the public agency environment; the problems of interagency and intergovernmental relations; the politics of technological innovation; privacy, confidentiality, and security and information policy; and the role of information technology in democratic government.

**POLI 760 - American Government and Politics (3 Credits)**

Advanced survey of the institutions and processes of the American political system.

**POLI 761 - American National Government for Professionals (3 Credits)**

Fundamental institutions, processes, values, and policies of the U.S. political system. Designed for master's and non-degree students in education, public administration, and business administration.

**POLI 762 - Politics of the Budgetary Process (3 Credits)**

Analysis of the political, economic, and social influences on the budgetary process.

**POLI 763 - Legislative Process and Behavior (3 Credits)**

The structure, organization, powers, functions, and problems of legislative bodies in America; the behavior of members of those bodies, with emphasis on the United States Congress.

**POLI 764 - Problems of the Presidency (3 Credits)**

A seminar on the problems of the contemporary presidency. Various approaches to the study of the presidency will be used as a means to uncovering and examining some of the major problems connected with the role of the president in the American system of government. Leading exponents of various approaches will be read and discussed.

**POLI 765 - Political Parties and Interest Groups (3 Credits)**

Intensive examination of contemporary development of political organizations in the United States.

**POLI 766 - Electoral Behavior (3 Credits)**

Examination of electoral behavior, including historical patterns in electoral history and forces affecting individual voting behavior such as partisan and class loyalties, political socialization, political attitudes, and candidate appeals. The role played by elections in the larger political system.

**POLI 767 - State Government (3 Credits)**

State government problems and policy issues. Emphasis on the modernization of government institutions and comparative state politics.

**POLI 768 - Local Government Administration (3 Credits)**

Administration of local government from the perspective of the professional administrator. Emphasis on the growth of the manager form of local government and the role of local government administrators with regard to policy making, management, and the delivery of services.

**POLI 769 - Environmental Policy and Management (3 Credits)**

An examination of issues related to environmental policy making, implementation and management.

**Cross-listed course:** ENVR 802

**POLI 770 - Perspectives on Public Administration (3 Credits)**

The study and practice of public administration in the United States.

**POLI 771 - Public Data Analysis (3 Credits)**

Problems of gathering and using public data for public administrators and policy analysts. Includes problems of research design and data gathering, interpretation, and use in the analysis of public problems.

**Prerequisites:** POLI 502.

**POLI 772 - Contemporary Administrative Organization (3 Credits)**

An examination of the problems, processes and theories of communication, decision making, agency planning, and control in administrative agencies.

**POLI 773 - Human Resources Administration in Government (3 Credits)**

Organization, techniques, and theories of personnel management; interpersonal relations in organizations; personnel change and development; changing conditions in the public service.

**POLI 774 - The Public Policy Process (3 Credits)**

An examination of the public policy process, including the role of public officials in the process and constraints on its outcomes.

**POLI 775 - Financial Administration (3 Credits)**

Organization and techniques of governmental financial management; budgetary theories, intergovernmental financial relations.

**POLI 776 - Policy Formation and Program Planning (3 Credits)**

Conceptual and analytic issues in formation and planning of public policies and programs, including problem identification, goal setting and criteria formulation, forecasting, prospective evaluation research, and modeling of programmatic cost and outcomes.

**POLI 777 - Policy Evaluation (3 Credits)**

Conceptual and analytic issues in policy and program evaluation, including problem definition, goal setting and criteria formulation, design of evaluation research, indicator design, treatments of uncertainty, and special problems raised by constraints of the political context.

**POLI 778 - Practicum in Public Administration (3 Credits)**

Selected problems in public administration. May be repeated or taken simultaneously as topics vary. Variations will be announced in the schedule of classes by title.

**POLI 779 - Public Administration Internship (3 Credits)**

CL: 2020.

**POLI 780 - Theories of Comparative Politics (3 Credits)**

Survey, analysis, and comparison of major contemporary theoretical works in comparative politics.

**POLI 781 - Government and Politics of Japan (3 Credits)**

Explores the key institutions, actors, and processes of contemporary Japanese domestic politics.

**POLI 782 - Problems in Chinese Government and Politics (3 Credits)**

The Chinese political tradition as it has merged with Communist theory and practice with special attention to problems of regionalism, localism, and central planning.

**POLI 783 - Dynamics of Middle East Politics (3 Credits)**

The comparative politics of the Arab countries and inter-Arab relations. Comparative analysis is used to study common political problems (authority, participation, integration) and political structures. Aspects of inter-Arab relations analyzed include: Arab unity, the Israeli conflicts, and East-West competition.

**POLI 784 - Government and Politics of Europe (3 Credits)**

Proseminar in European politics. Themes include party systems and voting behavior, parliamentary politics, public policy, democratization and privatization in Central and Eastern Europe, and research on the European Union.

**POLI 785 - Contemporary Russian Politics (3 Credits)**

An examination of current domestic issues in Russia and other states of the former Soviet Union, focusing on the institutions, processes, and results of policy decisions.

**POLI 786 - Comparative Political Institutions (3 Credits)**

Survey of theoretical and empirical work on democratic political institutions.

**POLI 789 - Master of International Studies Internship (3-6 Credits)**

Internships in various public, non-profit, and private organizations and agencies under joint supervision of agency personnel and departmental internship program director. Master of International Studies students only.

**Prerequisites:** Contract approved by departmental internship program director.

**POLI 790A - Independent Readings in Political Science (1-3 Credits)**

CL: 2020.

**POLI 790B - Independent Readings in International Studies (1-3 Credits)**

CL: 2020.

**POLI 791 - Selected Topics in American Politics (3 Credits)**

Topics selected for any semester will be identified by course title.

**POLI 792 - Selected Topics in Comparative Politics (3 Credits)**

Topics selected for any semester will be identified by course title.

**POLI 793 - Selected Topics in Area Studies (3 Credits)**

Topics selected for any semester will be identified by course title.

**POLI 794 - Selected Topics in International Relations (3 Credits)**

Topics selected for any semester will be identified by course title.

**POLI 795 - Selected Topics in International Law and Organization (3 Credits)**

Topics selected for any semester will be identified by course title.

**POLI 796 - Selected Topics in Foreign Policy (3 Credits)**

Topics selected for any semester will be identified by course title.

**POLI 797 - Selected Topics in Public Administration (3 Credits)**

Topics selected for any semester will be identified by title.

**POLI 798 - Selected Topics in Public Law (3 Credits)**

Topics selected for any semester will be identified by title.

**POLI 799A - Thesis Preparation (1-9 Credits)**

For candidates for the Master of Arts degree in Political Science.

**POLI 799B - Thesis Preparation (1-9 Credits)**

For candidates for the Master of Arts degree in International Studies.

**POLI 800 - Selected Topics in Political Theory (3 Credits)**

Analysis of particular topic or topics as chosen by instructor. May be repeated as topics vary. Variations will be announced in the schedule of classes by title.

**POLI 801 - Selected Thinkers in Political Theory (3 Credits)**

Analysis of particular theorist or theorists as chosen by the instructor. May be repeated as topics vary. Variations will be announced in the schedule of classes by title.

**POLI 802 - Seminar in Comparative Administration (3 Credits)****POLI 803 - Research Methods in Political Science (3 Credits)**

Consideration of advanced methods in statistics and research design and their application and use in the writing of a major research paper.

**POLI 806 - Seminar in Advanced Methods of Political Analysis (3 Credits)**

Advanced methodological strategies for empirical analysis. The course will focus primarily on causal models, data theory, dimensional analysis, and scaling techniques.

**POLI 815 - Seminar in Advanced International Relations Theory (3 Credits)**

A critical examination of contemporary efforts to analyze international relations through the use of empirical methodologies, including: social-psychological studies, simulation, game theory, decision theory, quantitative analyses.

**POLI 816 - Seminar in Comparative Study of Foreign Policy (3 Credits)**

Research seminar stressing systematic research procedures in the investigation of the determinants of foreign policy, including the employment of empirical data for testing theoretical propositions.

**POLI 817 - Seminar in International Organization and Cooperation (3 Credits)**

Advanced research seminar in selected topics related to international organization, international law, world order, ethics of international affairs.

**POLI 831 - Seminar on Europe (3 Credits)**

Advanced study of the European interstate system and Europe's role in world affairs. Emphasis on post-World War II Western and Central Europe, major powers, the European Union, and intra-European relations after the Cold War.

**POLI 834 - Seminar on Africa (3 Credits)**

Advanced study of the politics and international relations of Africa, regional development, foreign policy patterns, security problems, and questions of governance.

**POLI 850 - Seminar in Public Law (3 Credits)****POLI 865 - Seminar in Urban Politics (3 Credits)**

Advanced study of the politics and governmental problems of urban areas.

**POLI 872 - Public Sector Labor Relations and Collective Bargaining (3 Credits)**

Overview of public sector unions, labor-management relations, negotiating strategies, and the unique dynamics of management/employee interactions within public agencies.

**POLI 880 - Seminar in Comparative Politics (3 Credits)**

Intensive study of selected problems in comparative politics, with emphasis on individual research.

**POLI 899A - Dissertation Preparation (1-12 Credits)**

For candidates for the Doctor of Philosophy degree in political science.

**POLI 899B - Dissertation Preparation (1-12 Credits)**

For candidates for the Doctor of Philosophy degree in international studies.

## Portuguese (PORT)

### PORT 615 - Intensive Readings in Portuguese (3 Credits)

Intensive reading for non-majors. Graduate students fulfill their foreign-language reading requirements with successful completion of the course. Undergraduates may take the course as an elective only.

## Psychology (PSYC)

### PSYC 501 - Human Factors Psychology (3 Credits)

Application of research in experimental psychology to ergonomics, the design of human-environment systems, with emphasis on work settings.  
**Prerequisites:** PSYC 101 and 9 hours of upper-level courses all in psychology, business, engineering, or nursing.

### PSYC 503 - Psychology of Drug Use and Effects (3 Credits)

Research and theoretical considerations of substance abuse. Pharmacological, sociological, psychological, medical, economic, forensic, and other relevant research and treatment disciplines.  
**Prerequisites:** PSYC 450 or PSYC 455 or PSYC 460.

### PSYC 506 - Psychology of Language (3 Credits)

Theories of speech perception, linguistic theories of syntax and semantics, the brain mechanisms underlying language, the development of language in children, and the role of language in thought.  
**Cross-listed course:** LING 567

### PSYC 507 - Cognitive Neuroscience (3 Credits)

Research and theories on the role of the brain in facets of cognitive behavior, including attention, short-term and working memory, perception, language, executive function, thinking, and problem solving.  
**Prerequisites:** C or better in PSYC 405, highly recommended PSYC 455 or PSYC 460.

### PSYC 510 - Child Behavioral and Mental Disorders (3 Credits)

Theories, description, and assessment of child behavior problems and disorders; methods of intervention.  
**Prerequisites:** PSYC 420 or PSYC 410.

**Graduation with Leadership Distinction:** GLD: Community Service

### PSYC 520 - Psychology of Child Development (3 Credits)

Examination of development from conception through older childhood. Specific cognitive and social processes will be given in-depth study.  
**Prerequisites:** PSYC 420.

### PSYC 521 - Psychology of Adolescence (3 Credits)

Theories and research examining social, emotional, and intellectual development in adolescence. Explores influence of family, peer, school, and cultural contexts.  
**Prerequisites:** PSYC 420.

### PSYC 522 - Psychology of Early and Middle Adulthood (3 Credits)

Developmental changes in abilities, personality, and behavior which occur between adolescence and old age.  
**Prerequisites:** PSYC 420.

### PSYC 523 - Psychology of Aging (3 Credits)

Psychological, social, and biological phenomena associated with maturity and aging.  
**Prerequisites:** PSYC 420.

### PSYC 524 - Nature of Students with Mental Retardation (3 Credits)

Nature and causes of mental retardation; behavior and potentialities of persons with mental retardation.  
**Prerequisites:** a course in the areas of child psychology-child development.

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy

### PSYC 525 - The Psychology of the Midlife Woman (3 Credits)

Biological, social, and psychological aspects of the midlife woman.  
**Cross-listed course:** WGST 525  
**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

### PSYC 526 - Prevention of Psychological Problems in Children and Youth at Risk (3 Credits)

Etiology, prevention of, and intervention in behavioral, social, emotional, educational, and psychological problems in children and youth at risk.  
**Prerequisites:** PSYC 410 or PSYC 420 or equivalent.

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy

### PSYC 528 - Psychology of Children with Exceptionalities (3 Credits)

Characteristics, causes, needs, and intervention strategies for children with a broad range of exceptionalities including mental, physical, social/emotional difficulties and atypical gifts and talents.  
**Prerequisites:** PSYC 420 or PSYC 520.

### PSYC 529 - Nature of Students with Specific Learning Disabilities (3 Credits)

Children with average/above average intelligence and specific learning impairments; diagnostic and remedial techniques. Offered by both the College of Education and the Department of Psychology.  
**Prerequisites:** EDEX 523 or PSYC 528.

**Cross-listed course:** EDEX 531

### PSYC 530 - Advanced Social Psychology (3 Credits)

Intensive study of topics selected from the field of social psychology.  
**Prerequisites:** PSYC 430.

### PSYC 550 - Advanced Sensation and Perception (3 Credits)

Intensive study of topics selected from the field of sensation and perception.  
**Prerequisites:** PSYC 450.

### PSYC 560 - Advanced Topics in Neuroscience (3 Credits)

Intensive study of topics selected from the field of neuroscience.  
**Prerequisites:** PSYC 455 or PSYC 460.

### PSYC 565 - Psychology of Physical Activity (3 Credits)

Introduction to psychosocial factors in physical activity. Topics include mental health effects of exercise, behavior change theories applied to physical activity, and physical activity determinants and interventions.  
**Prerequisites:** PSYC 101, PSYC 228.

### PSYC 570 - Neuroscience Laboratory (3 Credits)

Practice in surgical, histological, and behavioral testing methodology. Two lectures and one three-hour laboratory per week.  
**Prerequisites:** PSYC 460.

**PSYC 571 - Cognitive Neuroscience Laboratory (3 Credits)**

Methods of observation and experimentation in cognitive neuroscience. Two lectures and one three-hour laboratory per week.

**Prerequisites:** PSYC 227 and C or better in two courses from PSYC 405, PSYC 450, PSYC 455, PSYC 460, or PSYC 507.

**Prerequisite or Corequisite:** one course from PSYC 400, PSYC 405, PSYC 450, PSYC 455, or PSYC 460.

**PSYC 572 - Cognitive Psychology Laboratory (3 Credits)**

Practice in the experimental techniques used in the study of cognitive psychology. Two lectures and one three-hour laboratory per week.

**Prerequisite or Corequisite:** PSYC 405.

**PSYC 574 - Sensation and Perception Laboratory (3 Credits)**

Concepts and principles in the study of sensation and perception in the laboratory. Two lectures and one three-hour laboratory per week.

**Prerequisite or Corequisite:** PSYC 450.

**PSYC 575 - Developmental Psychology Laboratory (3 Credits)**

Methods of observation and experimentation on human psychological development. Two lectures and one three-hour laboratory per week.

**Prerequisites:** PSYC 226 and PSYC 227.

**Prerequisite or Corequisite:** PSYC 420 or PSYC 520.

**PSYC 580 - Intermediate Statistics for Psychologists (3 Credits)**

Advanced analysis of the uses and applications of statistics to research in psychology, and interpretation of statistics in the psychological literature.

**Prerequisites:** B or better in PSYC 227.

**PSYC 583 - Psychological Tests and Measurement (3 Credits)**

Introduction to the theory and practice of measuring psychological attributes. Emphasis on test construction in a laboratory setting. Hands-on experience in designing, administering, and analyzing psychological tests and measures.

**Prerequisites:** B or better in PSYC 227 and PSYC 228.

**PSYC 584 - History and Systems of Psychology (3 Credits)**

Systematic approaches to psychology.

**Prerequisites:** 9 hours in psychology at 400 level or above.

**PSYC 585 - Advanced General Psychology (3 Credits)**

Review and integration of general principles of psychology. Primarily for students planning graduate study in psychology.

**Prerequisites:** 12 hours in psychology courses numbered above 300.

**PSYC 589 - Selected Topics in Psychology (3 Credits)**

Course content varies and will be announced in the schedule of classes by title.

**PSYC 598 - Individual Research (3 Credits)**

Planning and execution of supervised research in psychology. Approved contract required.

**Prerequisites:** 15 hours of psychology.

**PSYC 599 - Individual Research (3 Credits)**

Planning and execution of supervised research in psychology. Approved contract required.

**Prerequisites:** 15 hours of psychology.

**PSYC 700 - Psychosocial Approaches to Gerontology (3 Credits)**

Introduction to gerontology from the fields of demography, psychology, sociology, social welfare, and economics.

**Cross-listed course:** SOWK 771

**PSYC 701 - Behavioral Assessment and Intervention with Children and Youth (3 Credits)**

A combination of lecture and practicum experiences emphasizing the application of behavioral assessment and intervention techniques in educational, institutional, and home settings. Students receive individual and group supervision throughout the semester.

**Prerequisites:** PSYC 711.

**PSYC 702A - Basics of Neuroscience (3 Credits)**

Functional organization of the nervous system; research and theories of the neurological bases of behavior.

**PSYC 702B - Basics of Cognitive Psychology (3 Credits)**

Research and theories on attention, memory, language, thinking, and other cognitive processes.

**PSYC 702C - Basics of Developmental Psychology (3 Credits)**

Research and theories of psychological development across the lifespan.

**PSYC 702D - Basics of Learning and Motivation (3 Credits)**

Research and theories of instrumental conditioning, classical conditioning, learning, and motivation.

**PSYC 702E - Experimental Design (3 Credits)**

This course covers basic principles of sound experimental design, including such topics as internal and external validity, subject selection factors, and techniques for reducing sampling error and minimizing bias. In addition, the course will discuss practical limitations to ideal experimental design and have students identify the design conventions specific to their field of study.

**PSYC 703A - Integration across Cognitive Psychology and Neuroscience (3 Credits)**

Research and theories of cognitive neuroscience.

**PSYC 703C - Integration across Developmental and Cognitive Psychology (3 Credits)**

Research and theories of cognitive development.

**PSYC 703D - Integration across Areas of Psychology (3 Credits)**

Presentation of research and theories that cross different areas within psychology.

**PSYC 704 - Group Dynamics (3 Credits)**

Offered for an interdisciplinary student clientele interested in group processes and structures. Training is provided in observational methods and techniques of group assessment. Laboratory and field study required.

**PSYC 705 - Psychological Systems and Theories (3 Credits)**

Contemporary trends in systematic approaches and behavior theories.

**PSYC 706 - Seminar in Judgment and Decision Making (3 Credits)**

Research and theories of processes in judgment, choice, and decision making.

**PSYC 709 - Basic Quantitative Methods in the Analysis of Behavioral Data I (3 Credits)**

Quantitative methods for graduate students in psychology and other behavioral sciences. Emphasizes logical/intuitive understanding of the basic techniques, focuses heavily on the application of these methods to psychological research. Three lecture/discussion hours and a one-hour scheduled lab per week.

**Prerequisites:** introductory course in statistics, psychology or mathematics.

**PSYC 710 - Basic Quantitative Methods in the Analysis of Behavioral Data II (3 Credits)**

A continuation of PSYC 709. Three lecture/discussion hours and a one-hour scheduled lab per week.

**Prerequisites:** PSYC 709.

**PSYC 713 - Survey of Psychoeducational Tests and Assessment (3 Credits)**

Consideration of basic issues in evaluation of children, such as reliability, validity, item selection, standardization groups, criterion-referenced vs. norm-based testing, ethics, etc. Includes presentations via various instructional modes of a wide range of psychoeducational assessment procedures with a wide variety of children.

**PSYC 714 - Psychoeducational Assessment of Children I (1-3 Credits)**

A combination of lectures and practicum concerned with interviewing, behavioral observation and analysis, and cognitive-intellectual assessment. Requires involvement in school psychology training-service centers in the schools.

**Prerequisites:** acceptance in graduate psychology department program.

**PSYC 715 - Psychoeducational Assessment of Children II (1-3 Credits)**

A combination of lectures and practicum concerned with assessment of perceptual-motor processes, academic achievement, and personality and interpersonal skills. Requires involvement in school psychology training-service centers in the schools.

**Prerequisites:** PSYC 714 and acceptance in graduate psychology department program.

**PSYC 716 - Assessment of Emotional-Behavioral Functioning (1-3 Credits)**

Consideration, via lecture and/or practicum, of special areas of psychoeducational assessment. Topics will include infant assessment, criterion-referenced assessment, and assessment of neurological problems.

**Prerequisites:** PSYC 714, Acceptance in Department of Psychology graduate program.

**PSYC 717 - Survey of Personality Theories (3 Credits)**

Issues, theories, and research on personality.

**Prerequisites:** 18 hours in psychology.

**PSYC 720 - Psychological Interventions with Children and Families (3 Credits)**

Integration of theory, research, and practice in child clinical and family psychology. Focus on systemic, behavioral, and other orientations in the treatment of children and families.

**PSYC 721 - Developmental Psychopathology and Resilience (3 Credits)**

Theoretical, empirical, and methodological issues in the development of psychopathology or resilience in children, adolescents, and families. Emphasis on research topics related to nature, course, and etiology.

**Prerequisites:** acceptance in graduate psychology department or consent of instructor

**PSYC 725 - Systems and Theories of Psychological Intervention (3 Credits)**

Seminar emphasizing a critical analysis of psychotherapy systems and theories.

**PSYC 726 - Psychological Problems and Resilience (3 Credits)**

A survey of clinical disorders, their origins and characteristics. Includes a review of contemporary diagnostic systems, research, and theory.

**Prerequisites:** PSYC 410.

**PSYC 727 - Foundations of Community Psychology (3 Credits)**

Survey of theoretical foundations, research and practice in community psychology. Topics include prevention, social systems intervention, community participation, innovation in community service delivery systems, and community change processes.

**PSYC 728 - Laboratory in Community Study (1 Credit)**

Designated to accompany Psychology 727. Laboratory will target specific problems, resources, or populations and will provide students with elementary exposure to a community system.

**Prerequisite or Corequisite:** PSYC 727.

**PSYC 732 - Clinical Neuropsychology (3 Credits)**

Overview of relationships between brain structures and function and the assessment of cognitive and emotional behavior in adults and children.

**Prerequisite or Corequisite:** PSYC 702A or comparable course in biopsychology.

**PSYC 733 - Neuropsychological Syndromes in Childhood (3 Credits)**

Applications of neuropsychological theory and research to the study of the learning process, with emphasis upon assessment and intervention with learning disabilities.

**PSYC 734 - Neuropsychological Screening and Assessment (3 Credits)**

Assessment procedures for screening neuropsychological factors in individuals with neurobehavioral deficits.

**PSYC 735 - Survey of Psychopharmacology (3 Credits)**

The effect of drugs upon internal psycho-physiological functioning and upon the behavior of human and animal subjects. Particular emphasis will be given to the psychoactive drugs.

**Prerequisites:** 18 hours in psychology

**PSYC 742 - Consultation and Systems Interventions (3 Credits)**

Focus on understanding the theoretical bases of consultation and developing the skills necessary for the practice of mental health consultation.

**PSYC 743 - Theory and Practice of Mental Health Consultation II (3 Credits)**

Continues the practicum begun in Psychology 742 and develops the skills of administrative mental health consultation and evaluation of consultation programs.

**PSYC 745 - Organizational Behavior (3 Credits)**

Analysis of the organization as a complex interaction system.

**PSYC 749 - Principles of Human Diversity (3 Credits)**

Fundamental, conceptual and empirical knowledge regarding dimensions of diversity, social inequality and the application of this knowledge to psychological research, teaching and practice. Restricted to psychology students. Non-Psychology students need instructor permission to register.

**PSYC 750 - Psychology of Women (3 Credits)**

Women's diversity explored through research on personality, stereotypes, status and power, biological aspects, socialization, sexuality, relationships, mothering, work and achievement, violence against women, psychological disorders, and feminist therapies.

**Cross-listed course:** WGST 750

**PSYC 751 - Race, Class, Gender, and Sexuality (3 Credits)**

Historical and contemporary dimensions of social inequality centered in race, social class, gender, and sexuality.

**PSYC 760 - Issues and Ethics in Clinical-Community Psychology (3 Credits)**

The presentation of ethics in research and practice in clinical-community psychology and the discussion of current professional issues. Covering history and systems in psychology and providing in depth training on the ethical conduct of research.

**PSYC 761 - Psychological Assessment I (3 Credits)**

Develop assessment skills through interviewing, observation, performance testing, and report writing. Experience includes assessment of individuals, couples, and/or families from a variety of perspectives. Didactic/practicum.

**PSYC 762 - Psychological Assessment II (4 Credits)**

Theory of measurement and the construction of measures specific to clinical and community psychology. Intellectual achievement, objective personality, and projective measures. Didactic/practicum.

**PSYC 763 - Clinical Psychology Assessment III (1-4 Credits)**

Conceptualization of cases involving psychological measures. Clients include individuals, couples, and families. Didactic/practicum. May be repeated for up to 4 credits.

**Prerequisites:** PSYC 761.

**PSYC 765 - Externship in School Psychology (3 Credits)**

A closely supervised 20-hour-per-week externship in the techniques of psychological services in school systems. Staff.

**PSYC 770 - Survey of Social Psychology (3 Credits)**

Issues, research, and theories in social psychology.

**Prerequisites:** 18 hours in psychology.

**PSYC 772 - Research Approaches to Human Behavior (3 Credits)**

Nonquantitative aspects of research methodology and experimental design in laboratory and field settings. A critical investigation of artifacts and ethical issues in behavioral research.

**Prerequisites:** PSYC 709.

**PSYC 773 - Research in Clinical-Community Psychology (1-3 Credits)**

Supervised training in the conduct of empirical research in clinical-community psychology. May be repeated once for credit.

**PSYC 777 - Environmental Psychology (3 Credits)**

The study of human behavior and satisfaction in relation to the natural and person-made environment. Topics include environmental stress, risk, social ecology of families, behavior setting theory, and person-environmental relationships.

**Prerequisites:** PSYC 727.

**PSYC 780 - Behavior Therapy (3 Credits)**

A survey of principles, theory, methods, issues, and research in behavior therapy. Behavioral interventions with adults, children and families, organizations, and community settings.

**PSYC 781 - Behavior Therapy Practicum: Adults (1-3 Credits)**

Intensive practicum experience in the use of behavioral and cognitive-behavioral therapy with adult inpatients (psychiatric, geriatric, alcoholic, imprisoned), outpatients, and marital therapy clients.

**PSYC 782 - Child, Adolescent and Family Therapy Practicum (3 Credits)**

Individually supervised practicum in therapy with children, adolescents, and families. Includes exposure to multiple approaches including behavioral and family systems modes of intervention.

**Prerequisites:** PSYC 720.

**PSYC 783 - Health Psychology/Behavioral Medicine (3 Credits)**

Scientific study of the application of psychological principles to prevention of illness, maintenance of health, and the treatment of related medical dysfunctions. Primary emphasis on the use of behavior therapy and behavior modification techniques.

**Prerequisites:** PSYC 711 or PSYC 730.

**PSYC 784 - Clinical Health Psychology Practicum (1-3 Credits)**

Applying clinical health psychology to health-related agencies in the community.

**Prerequisites:** PSYC 762, PSYC 783.

**PSYC 785 - Seminar in Psychotherapy Research (3 Credits)**

Psychotherapy research and selected topics in other clinical research, such as alcoholism and hypnosis.

**PSYC 790 - College Teaching of Psychology I (1-3 Credits)**

Didactic, seminar, and experiential coverage of the teaching of psychology at the college level.

**Prerequisites:** 18 hours in psychology.

**PSYC 791 - College Teaching of Psychology II (1 Credit)**

Didactic, seminar, and experiential coverage of the teaching of psychology at the college level.

**Prerequisites:** 18 hours in psychology or permission of instructor

**PSYC 792A - Responsible Conduct of Research in Psychology and Neuroscience (1 Credit)**

Ethical issues and dilemmas in research. Compliance with national standards.

**PSYC 792B - Issues and Ethics in Research in Psychology and the Teaching of Psychology II (1 Credit)**

Presentation of ethics and issues pertaining to the teaching of psychology and psychological research.

**PSYC 799 - Thesis Preparation (1-9 Credits)**

To be arranged by candidates for the MA degree with the thesis advisor.

**PSYC 801 - Cognitive Neuroscience I (3 Credits)**

Techniques and methodologies of cognitive neuroscience, emphasizing classic research and theoretical perspectives as well as cutting-edge findings. Areas of focus include sensation and perception, attention, motor control, short-term/working memory, and reward/decision-making.

**Prerequisites:** or Corequisite: Completion of 6 credits from PSYC 702A-D.

**PSYC 802 - Cognitive Neuroscience II (3 Credits)**

Detailed exploration of the techniques and methodologies of cognitive neuroscience and the brain mechanisms sub-serving long-term memory, autobiographical memory, language, emotion, social cognition, and cognitive development.

**Prerequisite or Corequisite:** PSYC 801.



**PSYC 816 - Advanced Research in Clinical-Community Psychology (1-3 Credits)**

Supervised training in the conduct of empirical research in clinical-community psychology.

**PSYC 818 - Research in the Schools (3 Credits)**

Supervised psychological research on school-related problems; participation in ongoing program of research. Required of all doctoral candidates in psychology.

**PSYC 819 - Seminar in Biological Psychology (3 Credits)**

Theoretical and empirical issues in an area of current interest in biological psychology. May be repeated with different topics.

**Prerequisites:** PSYC 730.

**PSYC 820 - Seminar in Developmental Psychology (3 Credits)**

Theoretical and empirical issues in an area of current interest in developmental psychology. May be repeated with different topics.

**Prerequisites:** PSYC 751.

**PSYC 821 - Theory of Psychological Measurement (3 Credits)**

A survey of psychological scaling and factor theory, together with special techniques for achieving reliability and validity, including item analysis.

**Prerequisites:** PSYC 225 or the equivalent.

**PSYC 822 - Seminar in Cognitive Psychology (3 Credits)**

Theoretical and empirical issues in an area of current interest in cognitive psychology. May be repeated with different topics.

**Prerequisites:** PSYC 712.

**PSYC 823 - Multivariate Analysis of Behavioral Data (3 Credits)**

Advanced topics in multiple-variable research. Topics include multiple linear regression, polynomial regression, canonical correlation, discriminant function, and the analysis of variance using orthogonal polynomials and multidimensional scaling, both metric and nonmetric approaches.

**Prerequisites:** PSYC 710.

**PSYC 824 - Special Topics in Quantitative Psychology (3 Credits)**

Theoretical and empirical issues in an area of current interest in quantitative methods and quantitative psychology. May be repeated as content varies by title.

**Prerequisite or Corequisite:** PSYC 710.

**PSYC 825 - Introduction to Statistical Mediation Analysis (3 Credits)**

Mediation analysis and statistical methods for assessing mediating variables.

**Prerequisites:** PSYC 709 and PSYC 710 or STAT 700 and STAT 701.

**PSYC 826 - Family Psychotherapy (3 Credits)**

Advanced topics in family psychotherapy.

**Prerequisites:** PSYC 720, acceptance in clinical-community or school psychology graduate program, and consent of instructor

**PSYC 827 - Applied Individual and Couples Psychotherapy (3 Credits)**

Individually supervised practice in individual and couples psychotherapy.

**Prerequisites:** PSYC 725.

**PSYC 828 - Applied Group Psychotherapy (1-3 Credits)**

Advanced theory and research methods with supervised practice in the modification of personality and behavior through group interaction.

**PSYC 829 - Community Psychology Practicum I (1-3 Credits)**

Individually supervised field assignments in the community.

**PSYC 830 - Advanced Child, Adolescent and Family Therapy Practicum (1-3 Credits)**

Individually supervised advanced practicum in child, adolescent and family therapeutic intervention.

**Prerequisites:** PSYC 782.

**PSYC 831 - Practicum in Psychological Assessment (1-3 Credits)**

Training for advanced students in testing, assessment, and psychodiagnostics under the supervision of psychology staff.

**PSYC 832A - Practicum in School Psychology (3 Credits)**

Qualified advanced students will perform psychological evaluations and render other services in a public school setting under the supervision of the school psychology faculty. Cases dealt with include children with general or special learning difficulties.

**PSYC 832B - Practicum in School Psychology (1-3 Credits)**

Qualified advanced students will perform psychological evaluations and render other services in a public school setting under the supervision of the school psychology faculty. Cases dealt with include children with general or special learning difficulties.

**PSYC 832C - Practicum in School Psychology (1-3 Credits)**

Qualified advanced students will perform psychological evaluations and render other services in a public school setting under the supervision of the school psychology faculty. Cases dealt with include children with general or special learning difficulties.

**PSYC 833 - Practicum in Mental Retardation (1-3 Credits)**

Qualified advanced students will perform psychological evaluations and other clinical services under the supervision of mental retardation faculty in designated settings such as the USC Psychological Service Center, Midlands Training School, and other agencies providing services for persons with mental retardation. The assignment of cases will be based on a previous diagnosis of mental retardation or the probable involvement of mental retardation in client to be studied.

**Prerequisites:** PSYC 519.

**PSYC 834 - Experimental Psychopathology (3 Credits)**

A survey of experimental findings on psychological behavior in animals and humans and their theoretical implications. An introduction to applicable research procedures.

**PSYC 835 - Advanced Psychotherapy Practicum (1-3 Credits)**

Supervised psychotherapy with children, adolescents, or adults, together with additional training in marriage counseling, behavior therapy, and family therapy.

**Prerequisites:** PSYC 827 or PSYC 830.

**PSYC 835A - Advanced Psychotherapy Practicum (1-3 Credits)**

Supervised psychotherapy with children, adolescents, or adults, together with additional training in marriage counseling, behavior therapy, and family therapy.

**Prerequisites:** PSYC 827 or PSYC 830.

**PSYC 835B - Advanced Psychotherapy Practicum (1-3 Credits)**

Supervised psychotherapy with children, adolescents, or adults, together with additional training in marriage counseling, behavior therapy, and family therapy.

**Prerequisites:** PSYC 827 or PSYC 830.

**PSYC 835C - Advanced Psychotherapy Practicum (1-3 Credits)**

Supervised psychotherapy with children, adolescents, or adults, together with additional training in marriage counseling, behavior therapy, and family therapy.

**Prerequisites:** PSYC 827 or PSYC 830.

**PSYC 836 - Seminar in Psychopharmacology (3 Credits)**

Theoretical and empirical issues in an area of current interest in psychopharmacology. May be repeated with different topics.

**Prerequisites:** PSYC 735

**PSYC 837 - Autism Theory and Diagnostics (1-3 Credits)**

Theory, methods and comprehensive assessment of autism spectrum disorders in children and adolescents using a developmental approach. Emphasizes the development of critical thinking in relation to the selection, administration, interpretation, and application of gold-standard diagnostic measures of autism.

**Prerequisites:** PSYC 714 and PSYC 716 or equivalent.

**PSYC 838 - Seminar in Learning and Conditioning (3 Credits)**

Theoretical and empirical issues in an area of current interest in learning and conditioning. May be repeated with different topics.

**Prerequisites:** PSYC 711.

**PSYC 839 - Community Psychology Practicum II (3 Credits)**

Supervised practicum experience in community need assessment and the development of grant applications. Placement in state agencies and community programs.

**Prerequisites:** PSYC 727 and PSYC 829.

**PSYC 840 - Seminar in Professional School Psychology (3 Credits)**

A survey of the role of the psychologist functioning in a school setting, the associated problems and methods, including relationships with children and parents with teachers, administrators, and other school personnel.

**PSYC 841 - Advanced Study in Selected Topics (1-6 Credits)**

Special assignments to meet the needs of individual students. Conferences with instructor and staff. May be repeated with different topics.

**PSYC 843 - Seminar in Social Psychology (3 Credits)**

Theoretical and empirical issues in an area of current interest in social psychology. May be repeated with different topics.

**Prerequisites:** PSYC 770.

**PSYC 845 - Topics in Community Psychology (3 Credits)**

Theoretical and empirical issues in an area of current interest in community psychology. May be repeated with different topics.

**Prerequisites:** PSYC 727.

**PSYC 850 - Academic Interventions (3 Credits)**

Overview of consultation and systems-level interventions in psychological services.

**PSYC 860 - Advanced Study of Selected Problems in Clinical Psychology (3 Credits)****PSYC 865 - Internship in School Psychology (1 Credit)**

Two semesters required for Ph.D. Student is registered upon recommendation of the student's advisory committee. Will be graded as satisfactory (S) or unsatisfactory (U).

**PSYC 888 - Selected Topics in Psychology (1-6 Credits)**

Intensive study in an advanced area in psychology. May be repeated for credit.

**PSYC 889 - Independent Advanced Research (1-9 Credits)**

Doctoral-level research additional to that involved in the doctoral dissertation.

**PSYC 899 - Doctoral Research and Dissertation Preparation (1-12 Credits)**

## Public Health (PUBH)

**PUBH 678 - Transforming Health Care for the Future (1 Credit)**

Foundation for beginning health professions students to gain an understanding of the complexities of the health care system through experiential activities conducted in interprofessional teams and the importance of interprofessional collaboration in order to improve the system.

**Cross-listed course:** SOWK 678

**PUBH 700 - Perspectives in Public Health (3 Credits)**

Seminar-format orientation to history, mission, and core services and disciplines of public health to develop understanding of current public health practice and how many health-related disciplines contribute to achieving public health goals.

**PUBH 710 - Ethics and the Health Sciences (1-4 Credits)**

Students are introduced to formal and informal codes of professional conduct of various health science disciplines and understand the implications of these distinctions for interdisciplinary research, clinical practice, and administration.

**PUBH 725 - Quantitative Methods for Public Health Practice (5 Credits)**

Introduction to epidemiology and biostatistics and their application to public health issues and practice. Covers basic epidemiologic, biostatistical, and data management techniques used to analyze and interpret data in the field of public health.

**PUBH 726 - Qualitative Methods for Public Health Practice (3 Credits)**

An introductory course on why, when, and how to apply qualitative data collection and analysis methods to public health activities with a focus on practice-based application. Identifying, working with, and communicating with a range of community stakeholders are also discussed.

**PUBH 730 - Public Health Systems, Policy, and Leadership (3 Credits)**

A course on public health management and policy process and advocacy to develop effective public health leaders. Included is an emphasis on the relationships between people and their environment and the impact of the environment on human health and well-being.

**Prerequisites:** PUBH 725 and PUBH 726.

**PUBH 735 - Practical Applications of Public Health Planning (4 Credits)**

A practical approach to planning public health programs through the application of planning frameworks and the exploration of fundamental issues in planning, implementing and evaluating programs in various settings addressing diverse populations and issues.

**Prerequisites:** PUBH 725 and PUBH 726.

**PUBH 743 - Foundations of Health Disparities (3 Credits)**

Evolution of health disparities from historical, public, social, economic, and political perspectives.

**PUBH 791 - Special Topics Public Health (1-3 Credits)**

The purpose of this course is to provide the student of public health a clear understanding of public health history as a key component of the environment in which the any health professional must function. The course content will begin in prehistory and have a worldwide perspective through the 1700s. It will then shift to the history of the United States. In the historical, social, economic, and political context that the US public health and health care systems evolved are lessons and understandings that are necessary for this generation of health administrators and health policy makers to advance health for all. The first part of the course will examine the impact of disease on world history through the 18th century. The second and third parts of the course will present, from a historical perspective, the evolution of public health and health care delivery in the United States.

**PUBH 798 - Public Health Practice (1-6 Credits)**

Limited work experience or service project in an approved public health setting.

**Prerequisites:** BIOS 700 or BIOS 701 and EPID 700 or EPID 701.

**PUBH 810 - Ethics in Public Health Research and Practice (1 Credit)**

Foundations of public health ethics with application to practice and to responsible conduct of research in public health disciplines. Enrollment restricted to Doctoral students & post-docs, master's students by permission of instructor.

## RCON - Rehabilitation Counseling (RCON)

**RCON 601 - Helping Relationships: Fundamentals of Counseling Practice (3 Credits)**

Development of communication skills necessary to foster and develop effective counseling relationships.

**RCON 605 - Culture and Disability (3 Credits)**

Concepts and procedures relating to disability and culture, covering relevant issues affecting racially and culturally diverse individuals with disabilities, as well as promoting sensitivity and competence. Includes implications for an array of helping professions.

**RCON 700 - Foundations of Clinical Rehabilitation Counseling (3 Credits)**

Origin, evolution, and future of the rehabilitation counseling profession. Role and functions, scope of practice, and practice settings of rehabilitation counselors.

**RCON 702 - Introduction to Rehabilitation Research and Program Evaluation (3 Credits)**

Foundations underlying research and assessment methodologies and their application to counseling. Research design, program evaluation, ethical principles in research, the scholarly research process, and statistical software packages.

**RCON 704 - Ethics in Rehabilitation Counseling and Helping Relationships (3 Credits)**

Examines contemporary ethical concerns, issues, decision-making models, and best practices in rehabilitation counseling and the helping professions. Knowledge and awareness appropriate for master's-level professionals with a particular focus on working with people with disabilities or disadvantage. Application of knowledge across a range of helping relationships.

**RCON 711 - Rehabilitation Counseling Theories and Practice (3 Credits)**

Individual counseling theories and techniques applied to a wide range of persons, including persons with a disability (emotional, psychosocial, mental, and physical) and disadvantaged persons.

**Prerequisites:** RCON 601 or equivalent.

**RCON 714 - Rehabilitation Assessment (3 Credits)**

Assessment in clinical rehabilitation, including assessment instruments, methods, materials, and interpretation as applied to a variety of rehabilitation clients. Concepts, skill development, and application of clinical rehabilitation assessment.

**RCON 720 - Group Counseling in Rehabilitation Settings (3 Credits)**

Principles and practice of group counseling techniques applied to a wide range of persons, including persons with a disability (emotional, psychosocial, mental, and physical) or disadvantaged persons.

**Prerequisites:** RCON 601 and RCON 711 or equivalents.

**RCON 725 - Career Counseling Theories and the World of Work (3 Credits)**

Career counseling theories, processes, and techniques, with emphasis on persons with disabilities and vocational placement. Identification of values, interests, abilities, and methods for obtaining, organizing, and utilizing career information to enable career success of persons with disabilities and disadvantage.

**RCON 733 - Medical and Psychosocial Aspects of Disability (3 Credits)**

Medical and psychosocial aspects of chronic illness and disability, including physical, psychological, social, and educational impacts of disability. Functional limitations and impact on employment, family/social life, and daily living. Approaches to treatment, prevention, and an overview of adaptive measures to enhance functioning and overall quality of life.

**RCON 734 - Professional Issues in Clinical Rehabilitation Counseling (3 Credits)**

Professional issues and functions within the clinical rehabilitation process. Includes a detailed exploration of the case management process, independent provider status, expert witness status, forensic rehabilitation, life care planning, and managed care systems. Addresses emerging professional issues.

**RCON 880 - Counseling Practicum in Clinical Rehabilitation (3 Credits)**

Supervised counseling experience in an approved institution or agency.

**Prerequisites:** Official application must be submitted no later than the semester preceding enrollment.

**Corequisite:** 150 hours of supervised counseling experience in an approved clinical setting.

**RCON 883 - Internship in Clinical Rehabilitation Counseling (3,6 Credits)**

Supervised counseling experience in a work setting suitable for a clinical rehabilitation counselor.

**Prerequisites:** RCON 880.

## Reading (EDRD)

**EDRD 500 - Content Area Literacy PK-12 (3 Credits)**

A survey of research and practice which facilitates students' literacy skills in the content areas. For K-12 content area teachers of art, dance, physical education, foreign language, music and theatre.

**EDRD 511 - Teaching Reading to Adults I (3 Credits)**

Diagnostic and prescriptive modes of teaching reading to adults, based on the physical, psychological, intellectual, and social characteristics of the adult learner.

**EDRD 512 - Teaching Reading to Adults II (3 Credits)**

Preparation of materials for teaching basic reading skills to adults and practicum experiences in teaching adults to read.

**Prerequisites:** EDCO 511 or EDRD 511.

**EDRD 514 - Teaching of Reading in the Elementary School (3 Credits)**

Study of the various phases of reading in their relation to a modern program of education and the place of reading in the curriculum. Emphasis on modern practices in the classroom teaching of reading.

**EDRD 518 - Reading in the Secondary School (3 Credits)**

The place of reading instruction in high schools, the programming of special services in reading instruction, methods of teaching basic and developmental reading skills, and case studies of programs. Demonstrations of tests and devices.

**EDRD 600 - Foundations of Reading Instruction (3 Credits)**

An overview of reading and its curriculum implications: grades K-12 and adults. Emphasis is placed on current trends and issues and related methodologies.

**EDRD 650 - Teaching Reading Through A Literature Emphasis (3 Credits)**

Integrating appropriate literature into traditional and alternative reading programs. Identifying appropriate literature for classroom use and recreational reading. Use of literature as a means of developing and reinforcing reading skills.

**EDRD 651 - Introduction to Teaching Media Literacy (3 Credits)**

A survey of analysis of electronic and non-print media themes and messages aimed at youth, with special emphasis on design and implementation of curricula for enhancing children's media literacy.

**EDRD 690 - Independent Study (1-3 Credits)****EDRD 700 - Multimodal Multi-genre Writing (3 Credits)**

An active and reflective experience of process writing within multiple genres and multimodal literacies with classroom applications.

**EDRD 711 - Psychological Foundations of Reading (3 Credits)**

Designed to familiarize students with research findings and theories in psychology as they relate specifically to the process of learning to read. Topics will range from perception, learning theory, and personality theory to the implications of cultural differences and language factors as they affect both the child's learning to read and the teacher's effective facilitation of this learning.

**Prerequisites:** EDRD 514, EDRD 716, EDRD 717.

**EDRD 714 - Critical Foundations of Literacy (3 Credits)**

An overview of major theoretical, conceptual, and historical foundations in literacy and their curricular implications. Emphasis is placed on actively analyzing current trends and related methodologies.

**EDRD 715 - Instructional Strategies for Reading (3 Credits)**

Demonstration and critical evaluation of teaching strategies and materials in reading.

**EDRD 716 - Foundations of Reading Assessment (3 Credits)**

Seminar and supervised one-on-one field experience focusing on assessing and meeting the needs of individual children as readers with emphasis on at-risk children.

**EDRD 718 - Seminar in Classroom Reading Assessment (3 Credits)**

Seminar and supervised field experience focusing on assessing and meeting the needs of small groups of children as readers.

**Prerequisites:** EDRD 600, EDRD 715, and EDRD 716.

**EDRD 719 - Developing and Guiding the Reading Program (3 Credits)**

Design, management, and evaluation of reading programs at the classroom, school, or district levels.

**Prerequisites:** EDRD 600 and EDRD 715.

**EDRD 720 - Capstone Seminar in Language and Literacy (3 Credits)**

Synthesis, critique, and evaluation of current research and educational practice in language and literacy.

**Prerequisites:** EDRD 600, EDRD 715, EDRD 716, EDRD 718, and EDRD 719.

**EDRD 730 - Teaching Reading and Writing in the Content Areas (3 Credits)**

A survey of the strategies and materials which facilitate students' reading and writing skill in the content areas. For P-12 reading education and content area teachers.

**EDRD 731 - Assessment and the Foundations of Reading/Writing (3 Credits)**

Overview of assessment theory and practice; the reading/writing processes and the curricular implications across content areas.

**EDRD 732 - Teaching Reading and Writing in the Content Areas (3 Credits)**

Survey of the strategies and materials which facilitate students' reading and writing skill in the content areas.

**EDRD 750 - Literacy Curriculum Development (3 Credits)**

Classroom, school, and district literacy curriculum will be explored through multicultural and global literature.

**EDRD 760 - Literacy Research and Inquiry (3 Credits)**

An overview of inquiry-based teaching and learning within literacy instruction. Affiliated field experience will occur with a focus on assessing and meeting the needs of small groups of students.

**EDRD 776 - Coaching within Classrooms: Improving Teaching and Literacy Instruction (3 Credits)**

Coaching principles and strategies related to improvements and innovations in classrooms and in literacy instruction. Emphasizes working with teachers in classrooms to bring about educational reform and improvements in teaching and literacy instruction.

**EDRD 783 - Literacy Leadership and Supervision (3 Credits)**

Developing as a literacy leader within school and district contexts through: engagement in effective collaboration; design, management, and evaluation of professional learning; design, management, and evaluation of family and community outreach.

**EDRD 794 - Linguistics for Classroom Teachers PreK-12 (3 Credits)**

An introduction to the concepts of linguistics specifically for preK-12 educators. Topics include syntax, morphology, semantics, pragmatics, and first and second language acquisition theories.

**EDRD 795 - ESOL Principles and Strategies for PreK-12 Classrooms (3 Credits)**

A survey course focused on English for Speakers of Other Languages (ESOL), including a focus on different theoretical principles and approaches within various learning context as they concern preK-12 learners.

**EDRD 796 - Teaching Reading and Writing to ESOL Learners: Theory and Practice (3 Credits)**

This course surveys research on the mental processes and linguistic contexts involved in reading and writing in a second language. Pedagogical implications for elementary, secondary, and postsecondary learners are discussed.

**Cross-listed course:** LING 796

**EDRD 797 - Assessment for English Language Learners (3 Credits)**

Seminar and supervised one-on-one field experience focusing on accessing and meeting the needs of English learners including approaches to classroom-based assessments in ESL, bilingual education, and preschool-grade 12 classrooms.

**EDRD 798 - Curriculum Design and Materials Development for English Language Learners (3 Credits)**

This course will engage students in the examination and creation of research and theory that support curriculum design and materials development for the ESOL classroom.

**EDRD 800 - Literacy Education P-12 (3 Credits)**

Impact of theories of teaching, learning, and texts on literacy instruction; social, historical, political, and cultural influences on literacy.

**EDRD 801 - Critical Perspective on English/Language Arts (3 Credits)**

Issues of literacy from a variety of critical stances such as democratic values, gender roles, and multiculturalism.

**EDRD 802 - Internship in the Supervision of Reading (3 Credits)**

Internship in diagnosis and instruction of disabled, corrective, and developing readers to include supervision of graduate students enrolled in practica in reading, parent training, and program administration. Limited to advanced graduate students. May be repeated one additional time in a different supervisory setting for a maximum of six hours.

**EDRD 803 - Pedagogical Applications of Reader Response Theory (3 Credits)**

Research and theory, emphasizing the role of the reader's response in the reading process.

**EDRD 805 - Teaching and Adminstrating the College Reading Program (3 Credits)**

Emphasis on the acquiring of background and skills necessary for instruction in and administration of college-level reading programs located in post-high school institutions (technical schools, two-year colleges, four-year colleges, and universities).

**Prerequisites:** EDRD 514, EDRD 518.

**EDRD 806 - Practicum in Teaching and Administering the College Reading Program (3 Credits)**

Refining of counseling, evaluation, research, instructional, and administrative skills needed by college reading personnel. Practical application of the background and skills taught in EDRD 805.

**Prerequisites:** EDRD 514, EDRD 805.

**EDRD 811 - Cultural Perspective on Psychological and Social Foundations of Literacy Learning (3 Credits)**

Perspectives from psychology and sociocultural theory as they relate to literacy learning and research in literacy learning.

**EDRD 815 - Critique of Qualitative Research in Language and Literacy Education (3 Credits)**

A review and critique of qualitative perspectives on language and literacy research.

**EDRD 824 - Seminar in Language and Literacy Education (3 Credits)**

Intensive study of a designated topic influencing theory and/or practice in language and literacy education.

**Prerequisites:** Admission to a doctoral program in education or related field.

**EDRD 840 - Semiotics, Reading, Literacy and Learning (3 Credits)**

Peircean semiotics and the implications of such for language and literacy education.

**EDRD 844 - Advanced Study of Language Acquisitions (3 Credits)**

Theoretical frameworks and the relationship between current and classic studies in language acquisition.

**Prerequisites:** EDEC 744.

**EDRD 845 - Advanced Study of Emergent Literacy (3 Credits)**

Conceptual frameworks, findings, and connections among current and classic studies in emergent literacy; implications for further research.

**Prerequisites:** EDRD 844.

**EDRD 848 - Feminist Investigation in Literacy Education (3 Credits)**

Current theories of gender identity in relationship to literacy education.

**EDRD 850 - Internship in Language and Literacy Education (3-6 Credits)**

Placement in an agency or higher education setting to gain supervised experience in literacy program planning and/or research. May be repeated once for a total of 6 hours.

**Prerequisites:** 6 hours of required language and literacy courses in the language and literacy PhD program.

**EDRD 890 - Independent Study (3 Credits)**

## Religious Studies (RELG)

**RELG 514 - The Quest of the Historical Jesus (3 Credits)**

Examination of studies on the historical Jesus from 1778 to the present. Attention given to the relationship between "the Jesus of history" and "the Christ of faith".

**RELG 551 - Tradition and Transformations in Islamic Cultures (3 Credits)**

Islam as a dynamic cultural tradition: emphasis on the tension between Islamization and the larger Islamic tradition.

**Cross-listed course:** ANTH 515

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy, GLD: Global Learning

**RELG 552 - Buddhist Studies Seminar (3 Credits)**

The examination of a theme or problem central to the study of Buddhism in a seminar emphasizing intensive reading and creative discussion. Course may be repeated since topics change.

**RELG 700 - Problems in the Comparative Study of Religion (3 Credits)**

Introduction to formative thinkers in the discipline of religious studies, with attention to the methodological problems of comparison.

**RELG 701 - Foundational Readings (3 Credits)**

Foundational texts appropriate to the student's area of specialization and required for advanced course work and thesis preparation.

**RELG 710 - The Christology of the New Testament (3 Credits)**

Examination of the four major New Testament titles: Son of Man, Christ, Lord, and Son of God. Attention also given to some lesser-known titles and to Christology in context.

**RELG 724 - Religion and Politics (3 Credits)**

Religion as a factor in the comparative politics and international relations of states and societies.

**Cross-listed course:** POLI 724

**RELG 740 - Israelite Religion (3 Credits)**

Beliefs and practices in ancient Israelite religion, with particular attention to the emergence of monotheism. Comparison with other ancient Near Eastern religions.

**RELG 760 - Religion and Literature (3 Credits)**

Introduction to historical and contemporary approaches to the cross-disciplinary study of the inter-relations of the religious and the literary imaginations.

**RELG 770 - Black Christianity in America (3 Credits)**

Elements in the religion of the black slave in early America, the development of black churches and theological movements.

**RELG 771 - Black and Liberation Theology (3 Credits)**

Tenets, themes, and representative figures in black and liberation theology in the United States and in Central and South America.

**RELG 772 - Nineteenth-Century American Evangelical Thought (3 Credits)**

The diverse heritage of American evangelism, with special emphasis on its socio-political and theological origins in the late 18th and 19th centuries.

**RELG 773 - Twentieth-Century Christology (3 Credits)**

Various 20th-century christological perspectives, with special emphasis on the person and work of Jesus as bases for addressing life/death and hope/despair issues.

**RELG 780 - World Spirituality (3 Credits)**

An examination of the perennialist approach to the mystical and contemplative teachings of the major religious traditions.

**RELG 789 - Seminar in Philosophical Theology (3 Credits)**

Examination of contemporary problems in the philosophical foundations of religion.

**RELG 792 - Special Topics in Texts and Traditions (3 Credits)**

Topics related to the study of texts in the life of specific religious communities. Course content varies; individual topics will be announced.

**RELG 793 - Special Topics in Theology and Religious Thought (3 Credits)**

Topics related to the study of religious doctrines, cosmologies, spiritual practices, and ethics. Course content varies; individual topics will be announced.

**RELG 794 - Special Topics in Religion and Society (3 Credits)**

Topics examining religious institutions, practices, and experiences in relation to other cultural forms. Course content varies; individual topics will be announced.

**RELG 797 - Independent Study (3 Credits)**

CL: 2020.

**RELG 799 - Thesis Preparation (1-9 Credits)**

CL: 2020.

## Research & Measurement (EDRM)

**EDRM 520 - Introduction to Testing and Evaluation (3 Credits)**

The construction and use of teacher-made tests; descriptive statistics, measurement error, norms, and interpretation of scores; types of standardized instruments for use in elementary and secondary schools.

**EDRM 690 - Independent Study (1-3 Credits)****EDRM 700 - Introduction to Research in Education (3 Credits)**

Concepts and methods of conducting research in education. Admission to graduate standing.

**EDRM 710 - Educational Statistics I (3 Credits)**

Introductory course in statistics for graduate students in education and the other social sciences. Central tendency and variability, normal distribution, simple correlation and regression, z and t tests for one and two samples, and the chi-square test. Use of statistical software.

**EDRM 711 - Educational Statistics II (3 Credits)**

Continuation of Educational Statistics I. Inference for one and two samples, factorial designs, repeated measures designs, and multiple regression. Use of statistical software.

**Prerequisites:** EDRM 710.

**EDRM 712 - Nonparametric Statistics (3 Credits)**

Applied nonparametric statistics in education and the social sciences. Distribution-free inference for repeated measures and factorial designs; logistic regression and log-linear analysis. Use of statistical software.

**Prerequisites:** EDRM 711.

**EDRM 715 - Mixed Methods Research (3 Credits)**

The study and practice of mixed methods research. The integration of qualitative and quantitative approaches and methods in research practices. Emphasis on educational research and settings with consideration of other social science fields as needed.

**Prerequisites:** An initial course in or experience with quantitative research (example - EDRM 705 or EDRM 710) and qualitative research (example - EDFI 731).

**EDRM 718 - Research and the Statistical Packages (1-3 Credits)**

Advanced use of available statistical packages in educational research. Content varies; topics and credit announced in advance. May be repeated for up to six hours of credit. May be repeated for up to 6 hours of credit.

**Prerequisites:** EDRM 710 and EDRM 711.

**EDRM 720 - Educational Measurement (3 Credits)**

The history of educational and psychological measurement. Consideration of concepts such as validity and reliability of educational and psychological measures and the rationale of the development and use of instruments for educational purposes.

**EDRM 721 - Constructing Cognitive Instruments (3 Credits)**

The rationale, construction, use, and appraisal of achievement tests as tools of educational evaluation and research.

**Prerequisites:** EDRM 710 and EDRM 720 or equivalent.

**EDRM 722 - Constructing Non-Cognitive Instruments (3 Credits)**

Consideration and the construction of educational and psychological tests and measurement instruments.

**Prerequisites:** EDRM 721.

**EDRM 723 - Classroom Assessment Methods (3 Credits)**

Emphasis in the linkages between curriculum, instruction, and assessment, and the development of assessments for learning outcomes. Methods include observations, interviewing, performance assessments, portfolios, and classroom tests.

**EDRM 724 - Design and Analysis of Educational Surveys (3 Credits)**

Topics in educational surveys: design of questionnaires, sampling, data collection, treatment of non-responses, survey interviewing, randomized response techniques, data tabulation, and graphical presentation. Use of statistical software.

**EDRM 728 - Technical Aspects of Tests and Measurements (3 Credits)**

Statistical techniques and theoretical concepts involved in educational and psychological measurement. Analysis and interpretation of test data, equating of equivalent forms, latent trait theories and models, multiple matrix sampling, and issues related to criterion-referenced testing.

**Prerequisites:** EDRM 710 and EDRM 720 or equivalent.

**EDRM 736 - Program Evaluation (3 Credits)**

Methods of designing and implementing evaluations of social and educational programs.

**Prerequisites:** EDRM 700 and EDRM 710.

**EDRM 737 - Internship in Research (3 Credits)**

Supervised research experience in a school, state agency, department or bureau of the University, or cooperating institution.

**EDRM 789 - Principles and Applications of Structural Equation Modeling (3 Credits)**

Theories and applications of covariance structure modeling, including reliability analysis, confirmatory factor analysis, and path analysis with observed and latent variables.

**Prerequisites:** EDRM 711 or equivalent and EDRM 721 or equivalent.

**EDRM 799 - Thesis Preparation (1-9 Credits)****EDRM 800 - Grants Administration (3 Credits)**

Analysis of grant and contract functions in government agencies; proposal writing; legal and fiscal requirements of grants administration.

**Cross-listed course:** POLI 755

**EDRM 801 - Principles and Applications of Educational Research (3 Credits)**

Concepts and application of designing research in education.

**Prerequisites:** EDRM 700 or equivalent.

**EDRM 810 - Design and Analysis of Experiments (3 Credits)**

Emphasis on the development of an understanding of the role of inferential statistics in educational experimentation, a working knowledge of the common tests in statistical analysis, and the student's ability to design and execute experiments involving application of the statistical tests.

**Prerequisites:** EDRM 711 or the equivalent.

**EDRM 812 - Hierarchical Linear Modeling (3 Credits)**

Advanced quantitative methods course in multilevel data analysis. Covers theoretical grounding, applications in the social sciences, and model building.

**Prerequisites:** EDRM 711.

**EDRM 816 - Correlational and Multivariate Methods (3 Credits)**

Advanced statistical applications including partial and multiple correlational methods, multiple regression, multivariate analysis of variance, discriminant analysis, and canonical correlation. Use of statistical software.

**Prerequisites:** EDRM 711.

**EDRM 828 - Item Response Theory (3 Credits)**

Statistical models for item response theory, Rasch and other models for binary and polytomous data, and applications. Use of statistical software.

**Prerequisites:** EDRM 711 or PSYC 710 or STAT 701 or STAT 704.

**Cross-listed course:** STAT 778

**EDRM 840 - Advanced Qualitative Inquiry in Education (3 Credits)**

Theory, methodology and practice of qualitative research in educational settings. Students will conduct research in applied settings using qualitative data collection methods including observation, interviews, focus groups, and document analysis.

**Prerequisites:** EDFI 731.

**EDRM 842 - Educational Biography (3 Credits)**

Examination of biography as a form of educational research and scholarship.

**EDRM 878 - Seminar in Research Techniques (1-3 Credits)**

Theoretical and empirical issues in qualitative and/or quantitative methods in educational research. Content varies; topics and credit announced in advance. May be repeated for up to 12 hours of credit.

**EDRM 889 - Advanced Principles and Application of Latent Variable Modeling (3 Credits)**

Study of advanced concepts, principles, techniques, and issues in structural equation modeling (SEM) and the latent variable framework.

**Prerequisites:** EDRM 789 or similar course.

**EDRM 890 - Independent Study (3 Credits)****EDRM 897 - Dissertation Seminar in Education (3 Credits)**

Topics involved with major issues in the planning and conducting of significant research in education. Several faculty members participate; a forum is provided in which candidates may present for analysis original research designs primarily related to their dissertations.

**EDRM 899 - Dissertation Preparation (1-12 Credits)**

## Retailing (RETL)

**RETL 525 - Legal Aspects of Entrepreneurship and E-Commerce (3 Credits)**

Examination of domestic and international laws affecting retail entrepreneurship and online commerce, such as data privacy and breach response, intellectual property protection, sales tax, advertising and unfair trade practices, consumer protection laws, employment laws, and legal obligations involving physical locations.

**Prerequisites:** SPT 240 or equivalent.

**RETL 530 - Fashion and the Law (3 Credits)**

Examination of domestic and international laws which affect the fashion industry, such as intellectual property protection, licensing agreements, operational and marketing issues, and international trade.

**Prerequisites:** SPT 240 or equivalent.

**RETL 535 - Retail Logistics (3 Credits)**

Examination of the flow of retail inventory from initial production to final purchase. Meets the needs of individuals in retail organizations from entry-level sales floor personnel to buyers. Students must be qualified to enroll in a 500 level course at The University of South Carolina.

**RETL 551 - Retail and Fashion Business Planning (3 Credits)**

Essential skills for building a new or expanding an existing retail or fashion business in both brick-and-mortar and online venues by developing a marketing plan and corresponding e-Commerce website for a business or fashion organization.

**Prerequisites:** RETL 351.

**RETL 562 - Advanced Merchandising Management Strategies (3 Credits)**

The analysis of assortment planning and inventory management of apparel products utilizing merchandising principles and industry software.

**RETL 569 - Advanced Retail Promotion and Social Media Analytics (3 Credits)**

Essential principles and analytical tools used in retail promotion; appraisal of methods and outcomes via field experiences, visuals, and simulations.

**RETL 590 - Special Topics in Retail Management (3 Credits)**

Course content varies. May be repeated once under a different title.

**RETL 592 - Retailing/Fashion Merchandising Field Study (3 Credits)**

Study of international/domestic fashion manufacturers, retailers, ancillary businesses, and selected resident buying offices. May be repeated once for credit. Must be in good standing with a 2.0 GPA or better; No pending or past judicial council infractions.

**RETL 600 - Fundamentals of Omni-Channel Retailing (3 Credits)**

Exploration of the fundamentals of Omni-Channel Retailing.

**RETL 640 - Personnel Development & Relations Management (3 Credits)**

Advanced examination of human resource management within retail organizations.

**RETL 662 - Customer Relationship Management for the Retail Industry (3 Credits)**

The analysis of customer relationship management for retailers utilizing merchandising principles and industry software.

**RETL 700 - Advanced Omni-Channel Retailing (3 Credits)**

Advanced examination of Omni-channel retailing.

**RETL 710 - Retailing E-Commerce (3 Credits)**

Examination of e-commerce elements and retailer implications.

**RETL 725 - Customer Experience Optimization in the Retail Environment (3 Credits)**

Study of customers' needs, activities, and trends to aid retail strategy formulation for enhancing customer experiences in retail environments.

**RETL 730 - Retail Loss Prevention (3 Credits)**

The analysis of current retail loss prevention issues from the perspective of the business and customer. Meets the needs of individuals in retail organizations from entry level sales floor personnel to senior management.

**RETL 740 - Omni-Channel Workforce Management (3 Credits)**

Advanced examination of workforce management for Omni-channel retailers.

**RETL 745 - International Retailing (3 Credits)**

Broad overview of retail marketing theories, principles, and methods for international operations focusing on the cultural, economic, and regulatory environments.

**RETL 747 - Competitive Strategies in Retailing (3 Credits)**

Fundamentals of strategic decision-making and performance measurement within the retail organization.

**RETL 748 - Advanced Retail Space Management (3 Credits)**

Advanced examination of retail space allocation and management of merchandise via retail analytics and JDA software.

**RETL 749 - Advanced Category Management (3 Credits)**

Advanced examination of category management strategies.

**RETL 750 - Advanced Sales Strategies for Retail (3 Credits)**

Advanced strategic decision-making theories, principles, and techniques used in different buyer-seller situations by a retail organization.

**RETL 790 - Special Topics in Marketing Education (3 Credits)**

Contemporary topics, trends, and issues in marketing education. Individual topics may be announced by titles.

**RETL 798 - Directed Study in Retailing (3 Credits)**

Independent study for advanced students under faculty supervision.

**RETL 799 - Thesis Preparation (1-6 Credits)**

CL: 2020.

## RHAB - Rehab Counseling (RHAB)

**RHAB 540 - Assistive and Adaptive Technology (3 Credits)**

The use of Assistive Technology as it relates to employment, education, communication, recreation, and mobility for individuals with disabilities. Explores types of assistive technologies, functional assessments, and resources through hands-on application, lectures, and discussions.

**RHAB 702 - Introduction to Rehabilitation Research and Assessment (3 Credits)**

Foundations underlying research and assessment methodologies and their application to counseling. Research design, program evaluation, ethical principles in research, the scholarly research process, and statistical software packages.

**RHAB 703 - Psychosocial Aspects of Disability (3 Credits)**

Theory, research, and practice which contribute to an understanding of disability; attitudes, psychological, and social factors.

**RHAB 704 - Ethics in Rehabilitation Counseling (3 Credits)**

Examines contemporary ethical concerns and issues in rehabilitation counseling profession. The focus will be on attaining a level of applied ethical knowledge and awareness for master's-level professionals.

**RHAB 705 - Culture and Disability (3 Credits)**

Concepts and procedures relating to disability and culture, covering relevant issues affecting racially and culturally diverse individuals with disabilities, as well as promoting sensitivity and competence.

**RHAB 710 - Medical Aspects of Rehabilitation (3 Credits)**

This course is concerned with imparting medical terminology, the muscular, skeletal, and neurological systems, and common diagnostic categories encountered in rehabilitation counseling. Understanding and utilization of symptomatology, treatment, and other management aspects of physical medicine are emphasized. The major outcome is directed toward developing the counselor's ability to interpret medical information meaningfully to a plan of action for the client's rehabilitation.

**Prerequisites:** RHAB 570.

**RHAB 711 - Rehabilitation Counseling Practice II (3 Credits)**

Individual counseling theory and technique applied to persons with a disability (emotional, psychosocial, mental, and physical) and disadvantaged persons.

**Prerequisites:** RCON 601.

**RHAB 712 - Occupational Analysis and Placement in Rehabilitation (3 Credits)**

Sequential set of opportunities to acquire and apply knowledge, skills, and insights pertaining to the employment of persons with disabilities.

**Prerequisites:** RCON 700, RCON 702.



**RHAB 713 - Career Development and Counseling in Rehabilitation (3 Credits)**

Career development theories and their relevance to persons with disabilities. Identification of values, interests, abilities, and methods for obtaining, organizing, and utilizing career information to enable career success.

**RHAB 714 - Rehabilitation Assessment (3 Credits)**

Vocational assessment instruments, methods, materials, and interpretation are applied to a variety of rehabilitation clients. Concepts, skill development, and application of vocational assessment.

**Prerequisites:** RHAB 702

**RHAB 720 - Group Counseling in Rehabilitation Settings (3 Credits)**

Principles and practice of group counseling applied to persons with a disability, or disadvantaged persons.

**Prerequisites:** RCON 601.

**RHAB 730 - Case Management and Community Resources in Rehabilitation (3 Credits)**

Focuses on factors which facilitate or deter rehabilitation caseload movement. A detailed task analysis of case intake, case study, individualized written rehabilitation program planning, case services, and case closure within agency procedural regulations are emphasized.

**RHAB 750 - Technology and Exceptional Populations (3 Credits)**

The application of microcomputers and other technology in services for special populations. Case management, assessment, and instructional uses of technology are included.

**Cross-listed course:** EDEX 750

**RHAB 752 - Disability and Sexuality (3 Credits)**

Impact of major disabling conditions on sexual functioning; sex education and counseling of disabled persons.

**RHAB 753 - Rehabilitation and Severe Disability (3 Credits)**

Course examines the specialized knowledge and techniques required to rehabilitate persons with severe physical, mental-emotional, and social disabilities.

**Prerequisites:** RCON 700.

**RHAB 754 - Counseling and Death Education (3 Credits)**

Counseling approaches with the terminally ill and surviving family members.

**RHAB 880 - Counseling Practicum I (3 Credits)**

Supervised counseling experience in an approved institution or agency. Official application must be submitted at least one month before the end of the semester preceding enrollment. Supervised counseling experience in an approved institution or agency. Required 150 hours.

**RHAB 883 - Counseling Internship (1-6 Credits)**

Counseling experience will be gained in a work setting similar to that in which a counselor will eventually be employed.

**Prerequisites:** RHAB 880

**RHAB 890 - Independent Study (1-3 Credits)**

## Russian (RUSS)

**RUSS 518 - Medieval Russian Culture (3 Credits)**

An introduction to the culture of medieval Russia through its written records, folklore, icons, and ancient religious chant.

**RUSS 520 - Russian Modernism: Love, Sex and Politics in Revolutionary Russia (3 Credits)**

An exploration of Russian modernist culture, with particular attention to the themes of social and political change. Authors under discussion include Kuzmin, Bely, and Zamyatin.

**RUSS 530 - Homer in Russia (3 Credits)**

An examination of the influence of Homer's epic poems The Iliad and The Odyssey on Russian culture, as seen in works by Russian writers including Tolstoy, Pasternak, and Brodsky.

**RUSS 540 - Writing Russian National Identity (3 Credits)**

An examination of Russian writers reflecting on Russian national identity, including Solzhenitsyn, Dostoevsky, and Grossman.

**RUSS 598 - Selected Topics in Russian (3 Credits)**

Reading and research on selected topics in Russian. Course content varies and will be announced in the schedule of courses by title.

**RUSS 615 - Intensive Readings in Russian (3 Credits)**

Intensive reading course for non-majors. Primarily for graduate students to fulfill the foreign-language reading requirement. It will not be applied toward the degree language requirements nor will it be accepted as a substitute in the course sequence leading to the various degree requirements.

**RUSS 616 - Intensive Readings in Russian (3 Credits)**

Intensive reading course for non-majors. Primarily for graduate students to fulfill the foreign-language reading requirement. It will not be applied toward the degree language requirements nor will it be accepted as a substitute in the course sequence leading to the various degree requirements.

**Prerequisites:** RUSS 615.

**RUSS 777 - Supervised Instruction in Teaching Foreign Languages in College (0 Credits)**

Supervised direction of foreign language teaching in college. Required of all graduate assistants who are teaching. This course will not count toward the MA or PhD degree.

**RUSS 790 - Directed Reading and Research (1-3 Credits)**

CL: 2020.

## School Leadership (EDLP)

**EDLP 517 - Law and Policy Studies in Education (3 Credits)**

Policy issues affecting public and private educational institutions across the PK-20 continuum (pre-school through higher education).

**EDLP 520 - The Teacher as Manager (3 Credits)**

To help teachers, principals, and other personnel solve school problems by identifying and applying selected management techniques.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

**Experiential Learning:** Experiential Learning Opportunity

**EDLP 525 - Resources for Teaching and Learning (3 Credits)**

An introduction to educational technology, its increasing importance in the total school program, and its relationship to learning theories and communication.

**EDLP 601 - The Effective Teacher (3 Credits)**

Use of theory and research to understand and improve classroom teaching. Emphasis on teacher reflection and decision-making. The administrative role in enhancing effectiveness is highlighted.

**EDLP 690 - Independent Study (1-3 Credits)**

**EDLP 700 - Introduction to Educational Administration (3 Credits)**

A survey of basic principles of school administration, the conceptual and structural organization of public education, and the educational governance at the federal, state, and local levels.

**EDLP 701 - School Leadership (3 Credits)**

A study of interpersonal relations and communication within an educational organization and between the school and the community.

**EDLP 702 - School Personnel Administration (3 Credits)**

Personnel management in the public schools with attention to such issues as teacher supply, recruitment, selection, staff development, supervision, teacher welfare, legal rights/liabilities of school personnel.

**EDLP 703 - Supervision of Instruction (3 Credits)**

An introduction to the functioning of an educational supervisor. Emphasis on the improvement of instruction and instructional programs.

**EDLP 704 - School Finance and Business Management (3 Credits)**

Financial and business management functions of school administration. Local/state/national funding issues, economics and politics of school finance, budget preparation, accounting/auditing/plant operation/maintenance from school level.

**Prerequisites:** At least two of the following EDLP 700, EDLP 701, EDLP 702, EDLP 703.

**EDLP 705 - Legal Basis of Educational Organization and Administration (3 Credits)**

Emphasis on techniques of legal research, the legal relationships between the federal and state government as they relate to school district organization and administration, as well as legal case studies in all major areas of administrative concern.

**Prerequisites:** At least two of the following EDLP 700, EDLP 701, EDLP 702, EDLP 703.

**EDLP 706 - The Principalship (3 Credits)**

Principles, problems, competencies, and practices involved in the administration of schools.

**Prerequisites:** Completion 15 hours of EDLP courses prior to enrolling.

**Corequisite:** one of EDLP 707A, EDLP 707B, EDLP 708A, EDLP 708B, EDLP 709A or EDLP 709B.

**EDLP 707A - The Elementary School Principal in Practice I (3 Credits)**

One of two courses in a required two-semester internship in the elementary schools.

**Corequisite:** EDLP 706.

**EDLP 707B - The Elementary School Principal in Practice II (3 Credits)**

One of two courses in a required two-semester internship in the elementary schools.

**Corequisite:** EDLP 706.

**EDLP 708A - The Middle School Principal in Practice I (3 Credits)**

One of two courses in a required two-semester internship in the middle schools.

**Corequisite:** EDLP 706.

**EDLP 708B - The Middle School Principal in Practice II (3 Credits)**

One of two courses in a required two-semester internship in the middle schools.

**Corequisite:** EDLP 706.

**EDLP 709A - The High School Principal in Practice I (3 Credits)**

One of two courses in a required two-semester internship in the high schools.

**Corequisite:** EDLP 706.

**EDLP 709B - The High School Principal in Practice II (3 Credits)**

One of two courses in a required two-semester internship in the high schools.

**Corequisite:** EDLP 706.

**EDLP 734 - Improvement Science and Action Research (3 Credits)**

Using action research strategies and an improving science framework for continuous improvement.

**EDLP 737 - Anti-racist Leadership (3 Credits)**

An introduction to ideas supporting anti-racist educational leadership across the P-20 educational pipeline. Specific topics include contested definitions of racism, policy, praxis, and anti-racist research, scholarship and leadership.

**EDLP 751 - Advanced School Law (3 Credits)**

A seminar designed to give teachers and school administrators an opportunity to explore key legal issues.

**Prerequisites:** EDLP 705.

**EDLP 752 - Computer Management in Educational Institutions (3 Credits)**

Open to advanced graduate students of education. History of the management, movement, and application of techniques and processes for managing the modern educational institution, emphasizing computer technology.

**EDLP 753 - Advanced Methods of Instructional Supervision (3 Credits)**

An analysis of leadership techniques necessary to produce instructional improvement in educational organizations and of the technical methodology that distinguishes instructional supervision from other positions of school leadership.

**Prerequisites:** EDLP 703 or equivalent and employment in a position requiring supervisory responsibilities.

**EDLP 754 - Educational Finance (3 Credits)**

A study of principles of financing public education, analyses of revenue sources from all levels of government, existing plan of financing and possible alternatives for financing schools from district level.

**Prerequisites:** EDLP 704.

**EDLP 755 - Educational Policy Analysis (3 Credits)**

An introduction to policy making in education with emphasis on the local and state levels of policy formation.

**Prerequisites:** EDLP 705.

**EDLP 756 - The Superintendency (3 Credits)**

A two-semester course on the district superintendency.

**Prerequisites:** EDLP 706 and admission to EdS or PhD program.

**Corequisite:** EDLP 757A.

**EDLP 757A - The Superintendent in Practice I (3 Credits)**

The first of two courses in a required two-semester internship in the district superintendency.

**Prerequisite or Corequisite:** EDLP 706, EDLP 756, and admission to EdS or PhD program.

**EDLP 757B - The Superintendent in Practice II (3 Credits)**

The second of two courses in a required two-semester internship in the district superintendency.

**Prerequisite or Corequisite:** EDLP 757A and admission to the EdS or PhD program.

**EDLP 758 - School Building Planning (3 Credits)**

Study of the problems involved and the procedures utilized in a comprehensive approach to planning and constructing school plants, the personnel involved and the roles they play, and the problems related to the long-term financing of such facilities.

**Prerequisites:** Admission to EdS or PhD program.

**EDLP 799 - Thesis Preparation (1-9 Credits)****EDLP 803 - Administrative Evaluation and Decision-Making (3 Credits)**

A study of the requirements, practices, problems, and opportunities of administrative evaluation of programs and personnel as required by state and federal educational legislation.

**Prerequisites:** Admission to EdS or PhD program.

**EDLP 804 - Advanced Educational Finance (3 Credits)**

A study of funding schemes, the economics of financing, and construction and defense of a school district budget. Microcomputers are utilized.

**Prerequisites:** EDLP 704 and EDLP 754 and PhD candidate.

**EDLP 805 - Advanced Educational Policy Analysis (3 Credits)**

Advanced study of policy making at the federal level. The class will include a mandatory week-long stay in Washington, D.C.

**Prerequisites:** EDLP 705 and EDLP 755 and PhD candidate.

**EDLP 806 - Theories of Educational Leadership (3 Credits)**

Organization, leadership, motivation, and change theories as they apply to educational agencies and institutions.

**EDLP 807 - Seminar in Selected Topics in Educational Administration (3 Credits)**

Selected topics in educational administration in either finance, administration, supervision, evaluation, policy, and financial planning/management.

**Prerequisites:** Admission to doctoral program.

**EDLP 808 - Field Problems in Educational Administration: The Literature (1-3 Credits)**

This course is designed to help students identify a research literature that provides the context for their own dissertation research. Students will conduct a systematic review of this literature in order to refine their questions and methods for their dissertation research, and to build towards their own dissertation proposal and literature review chapter.

**EDLP 809 - Field Problems in Educational Administration (1-3 Credits)**

Opportunity for in-depth study of selected field problems in educational administration, utilizing research and other techniques.

**EDLP 890 - Independent Study (3 Credits)**

Independent study form required for authorization.

**EDLP 899 - Dissertation Preparation (1-12 Credits)**

## Science and Math Educ (SMED)

**SMED 510 - Life Science for Teachers I (3 Credits)**

Topics appropriate for elementary and middle-school curricula; phylogenetic organization of major kingdoms, characteristics of plants and animals, including humans; ecological principles; communities; energy needs, resources, flow and balance; heredity and adaptation.

**SMED 586 - Energy, Motion, and Matter (3 Credits)**

Integrated study of the earth's atmosphere for pre-service and in-service middle school teachers combining concepts from earth, life, and physical science leading to an understanding of the interaction of all systems.

**Prerequisites:** introductory-level courses in life, earth, and physical sciences.

**SMED 587 - Interdependence of Living Systems (3 Credits)**

Integrated study of the biotic and abiotic environments combining life, earth, and physical science concepts to understand relationships in living systems. For pre-service and in-service middle school teachers.

**Prerequisites:** introductory-level courses in life, earth, and physical sciences.

**SMED 588 - Origin and Evolution of Living and Non-Living Systems (3 Credits)**

Study of the earth system for pre-service and in-service middle school teachers, with emphasis on the origin, evolution, and interactions of the subsystems of the earth system.

**Prerequisites:** introductory-level courses in life, earth, and physical sciences.

**SMED 591 - Data Analysis for Teachers (3 Credits)**

Introduction to statistics for elementary, middle, and high school teachers. The fundamentals of data collection, descriptive statistics, probability, and inference with special focus on methods of teaching statistical reasoning. For M.A.T. (excluding mathematics) / M.Ed. / M.T. and nondegree credit only. For M.A.T. (excluding mathematics) / M.Ed. / M.T. and nondegree credit only.

**Cross-listed course:** STAT 591

**SMED 729 - Special Topics in Science for Teachers (1-3 Credits)**

Topics not likely to be incorporated into regular offerings, offered as seminars, workshops, and formal courses. Variable credit, depending on contact hours. May be taken more than once.

**SMED 769 - PD: Math for Teachers (1-3 Credits)**

## Secondary Education (EDSE)

**EDSE 500 - Equity and Community Engagement (3 Credits)**

Field-based inquiry into theories of critical multicultural education, culturally relevant and equity pedagogies with an emphasis on middle/high school students and engaging parents and the larger school community.

**EDSE 502 - Teachers and Teaching (3 Credits)**

Teaching as reflective and ethical practice. Professional standards, teacher leadership and school change, and various roles of professional educators.

**EDSE 505 - Source Materials for Geographic Instruction (3 Credits)**

Introduction to selected materials available for all levels of instruction in geography. Emphasis on the substantive nature of the materials.

**Cross-listed course:** GEOG 560

**EDSE 508 - Teaching Middle and High School (Business Education) (3 Credits)**

A study of methods, techniques, and materials of instruction in middle and high school business education.

**EDSE 528 - Study of the Teaching of Business Education in the Secondary School (3 Credits)**

Teaching techniques and methodology related to the business education curriculum, emerging technology and software.

**EDSE 547 - Teaching Middle and High School (English) (3 Credits)**

A study of methods, techniques, and materials of instruction in middle and high school English.

**Prerequisites:** Admission to MAT program for graduate students; EDSE 402 for undergraduate students.

**EDSE 548 - Earth Science for Teachers I (3 Credits)**

Origin, internal structure and internal processes of the earth, including plate tectonics, earthquakes, volcanoes, and mountain building. Required field trips, two lectures, and three lab hours per week. Cannot be used in MS or PhD programs in geology.

**Cross-listed course:** GEOL 540

**EDSE 549 - Earth Science for Teachers II (3 Credits)**

Surface processes acting on the earth; introduction to weather and climate, weathering, erosion, and sedimentary processes; land form evolution; ocean currents and tides, near-shore geologic processes. Required field trips, two lecture, and three lab hours per week. Cannot be used in MS or PhD programs in geology.

**Prerequisites:** EDSE 548/GEOL 540.

**Cross-listed course:** GEOL 541

**EDSE 550 - Teaching Middle and High School (Mathematics) (3 Credits)**

A study of methods, techniques, and materials of instruction in middle and high school mathematics.

**EDSE 551 - Teaching Middle and High School (Health) (3 Credits)**

A study of methods, techniques, and materials of instruction in middle and high school health.

**EDSE 552 - Teaching Middle and High School (Marketing Education) (3 Credits)**

A study of methods, techniques, and materials of instruction in middle and high school marketing education.

**EDSE 553 - Teaching Middle and High School (Science) (3 Credits)**

A study of methods, techniques, and materials of instruction in middle and high school science.

**EDSE 554 - Teaching Middle and High School (Theatre and Speech) (3 Credits)**

A study of methods, techniques, and materials of instruction in middle and high school theatre and speech.

**EDSE 558 - Teaching Middle and High School (History and Social Studies) (3 Credits)**

A study of methods, techniques, and materials of instruction in middle and high school history and social studies.

**EDSE 575 - Teaching Foreign Languages in Secondary Schools (3 Credits)**

Current methods, techniques, and materials of instruction appropriate for secondary schools.

**Cross-listed course:** FORL 511

**EDSE 580 - Teaching Advanced Latin in Secondary School (3 Credits)**

Methods and materials for teaching the Latin Advanced Placement courses in secondary school.

**Corequisite:** LATN 580.

**EDSE 584 - Middle and High School Internship Seminar (3 Credits)**

Classroom management, service learning, legal/professional responsibilities, multicultural perspectives and needs of exceptional children.

**Corequisite:** Internship II.

**EDSE 585 - Secondary Internship Seminar I (1 Credit)**

Integration of content, pedagogy, and disposition knowledge learned during coursework with Internship I field experiences.

**Corequisite:** Students must be enrolled in the Internship I field experiences.

**EDSE 586 - Secondary Internship Seminar II (2 Credits)**

Integration of content, pedagogy, and disposition knowledge learned during coursework with Internship II field experiences.

**Corequisite:** Students must be enrolled in the Internship II field experiences.

**EDSE 660 - Teaching Mathematics with Manipulatives, Grades 7-12 (3 Credits)**

Methods and materials for using manipulative devices to teach middle and high school level mathematics.

**EDSE 670 - Graphics Calculators in High School Mathematics (3 Credits)**

Methods and materials for using graphics calculators to teach algebra, elementary functions, and analytic geometry.

**EDSE 690 - Independent Study (1-3 Credits)**

**EDSE 702 - Teaching Information Management Technology (3 Credits)**  
Development of curriculum and educational materials for middle and high school information technology courses; selection of equipment; techniques of teaching information management technology; practical experience with software and hardware.

**EDSE 703 - Perspectives in Teaching Secretarial Skills (3 Credits)**  
Strengthening the technical competence of the business teacher. Philosophy and psychology of skill development in secretarial subjects.

**EDSE 704 - Perspectives in Teaching Bookkeeping/Accounting and Basic Business (3 Credits)**

Strengthening the technical competence of business teachers in bookkeeping/accounting and basic business, and improving instruction in these areas.

**EDSE 727 - Advanced Principles and Practices of Teaching in High School (3 Credits)**

Study of the problems involved in all teaching in the secondary school.

**EDSE 728 - Advanced Study of the Teaching of English in Secondary Schools (3 Credits)**

A study of historical developments and recent innovations in curricula, resources, and techniques in the field of teaching English in secondary schools. Students will be expected to investigate research as it relates to the improvement of instruction.

**EDSE 729 - Advanced Study of the Teaching of History and Social Studies in Secondary Schools (3 Credits)**

A study of historical developments and recent innovations in curricula, resources, and techniques in the field of teaching history and social studies in secondary schools. Students will be expected to investigate research as it relates to the improvement of instruction.

**EDSE 732 - Advanced Study of the Teaching of Science in Secondary Schools (3 Credits)**

A study of historical developments and recent innovations in curricula, resources, and techniques in the field of teaching science in secondary schools. Students will be expected to investigate research as it relates to the improvement of instruction.

**EDSE 733 - Selected Topics in Social Studies Education (3 Credits)**

Topics will be selected from various social studies education fields, including trends, methods, and materials of social studies education. May be repeated; credit up to six hours may be applied toward a degree.

**Prerequisites:** EDSE 729 or its equivalent.

**EDSE 764 - Advanced Study of the Teaching of Mathematics in Secondary Schools (3 Credits)**

A study of historical developments and recent innovations in curricula, resources, and techniques in the field of teaching mathematics in secondary schools. Students will be expected to investigate research as it relates to the improvement of instruction.

**EDSE 766 - Historical Topics in the Teaching of Mathematics (3 Credits)**

Use of the history of mathematics in middle and secondary school teaching.

**Prerequisites:** EDSE 764.

**EDSE 770 - Technology in Mathematics Education (3 Credits)**

Topics in the use of electronic technology in the teaching of mathematics at the middle and secondary school levels.

**EDSE 773 - Advanced Study of the Teaching of Computer Studies (3 Credits)**

Recommendations for materials, content, and methods for teaching computer-related subject matter at the middle and high school level. Experience in writing computer programs for educational purposes in the Logo, BASIC, and Pascal languages will be given.

**Prerequisites:** EDTE 731.

**EDSE 775A - Teaching Internship in Middle or High School (History and Social Studies) (3 Credits)**

Application of effective teaching techniques and organization of instructional settings for middle or high school students.

**Prerequisites:** acceptance to the Professional Program in Education.

**Corequisite:** EDSE 558.

**EDSE 775B - Teaching Internship in High School History and Social Studies (9 Credits)**

Application of effective teaching techniques and organization of instructional settings for high school students.

**Prerequisites:** EDSE 775A.

**Corequisite:** EDSE 584 or EDSE 784.

**EDSE 776A - Teaching Internship in Middle or High School (English) (3 Credits)**

Application of effective teaching techniques and organization of instructional settings for middle or high school students.

**Prerequisites:** acceptance to the Professional Program in Education.

**EDSE 776B - Teaching Internship in High School English (9 Credits)**

Application of effective teaching techniques and organization of instructional settings for high school students.

**Prerequisites:** EDSE 776A.

**Corequisite:** EDSE 584 or EDSE 784.

**EDSE 777A - Teaching Internship in Middle or High School (Business Education) (3 Credits)**

Application of effective teaching techniques and organization of instructional settings for middle or high school students.

**Prerequisites:** acceptance to the Professional Program in Education.

**EDSE 777B - Teaching Internship in Middle or High School (Business Education) (9 Credits)**

Application of effective teaching techniques and organization of instructional settings for middle or high school students.

**Prerequisites:** EDSE 777A.

**Corequisite:** EDSE 784.

**EDSE 778A - Teaching Internship in Middle or High School (Mathematics) (3 Credits)**

Application of effective teaching techniques and organization of instructional settings for middle or high school students.

**Prerequisites:** acceptance to the Professional Program in Education.

**EDSE 778B - Teaching Internship in High School Mathematics (9 Credits)**

Application of effective teaching techniques and organization of instructional settings for high school students.

**Prerequisites:** EDSE 778A.

**Corequisite:** EDSE 584 or EDSE 784.

**EDSE 781A - Teaching Internship in Middle or High School (Science) (3 Credits)**

Application of effective teaching techniques and organization of instructional settings for middle or high school students.

**Prerequisites:** acceptance to the Professional Program in Education.

**EDSE 781B - Teaching Internship in High School Science (9 Credits)**

Application of effective teaching techniques and organization of instructional settings for high school students.

**Prerequisites:** EDSE 781A.

**Corequisite:** EDSE 584 or EDSE 784.

**EDSE 783 - Advanced Study of the Teaching of Mathematics in the Middle or Junior High School (3 Credits)**

Historical developments and recent innovations in curricula, resources, and techniques in the teaching of mathematics in the middle or junior high school. Investigative research into the improvement in instruction.

**EDSE 785 - Seminars on Selected Topics in Foreign Language Education (3 Credits)**

Topics will be identified by title in the schedule of classes. Each topic may be taken only once.

**EDSE 786 - The Teaching of Literature in the Secondary School (3 Credits)**

Subject content of new literature programs; resources and innovative approaches; problems in organizing literature. Emphasis on specific teaching methodology and the development of materials.

**EDSE 787 - The Teaching of Composition in the Secondary School (3 Credits)**

New curricula in the teaching of oral and written composition; issues and problems in the composition phase of English programs; innovative teaching techniques and methodology. Development of materials appropriate to the teaching of oral and written composition.

**EDSE 788 - The Teaching of the English Language in the Secondary School (3 Credits)**

Recent innovations in curricula, resources, and teaching techniques for such topics as dialectology, usage, regional varieties of language, lexicography, language history and development, structural grammar, and transformational grammar.

**EDSE 789 - The English Teacher and Special Problems in Reading (3 Credits)**

Selected problems and solutions in reading at the secondary level. Ways to improve reading skills; research contributions to the improvements of instruction in reading.

**Prerequisites:** EDRD 514 or EDRD 518.

**EDSE 828 - Research in English Education (3 Credits)**

Research methodology and design in the field of English education. Interpretation of data and implications for further research. A preliminary dissertation proposal may be developed.

**EDSE 850 - Advanced Readings in Secondary Education (3 Credits)**

Analyses of select studies in the pertinent field(s) of specialization in secondary education. Consideration is given to implications for needed research in these fields.

**EDSE 851 - Advanced Reading in Mathematics Education (3 Credits)**

Selected topics in mathematics education, including teacher training, evaluation of programs and instruction, in-service programs, and the history of mathematics education. Current research in these areas with implications for needed research.

**EDSE 890 - Independent Study (3 Credits)**

## Social Work (SOWK)

**SOWK 668 - Special Topics in Social Work (1-3 Credits)**

Study of special populations, settings, and/or problems encountered by social workers and other human service professionals, and interventions and skills for dealing with them. May be repeated as content varies by title.

**SOWK 678 - Transforming Health Care for the Future (1 Credit)**

Foundation for beginning health professions students to gain an understanding of the complexities of the health care system through experiential activities conducted in interprofessional teams and the importance of interprofessional collaboration in order to improve the system.

**Cross-listed course:** PUBH 678

**SOWK 679 - Addressing Childhood Obesity through Community Approaches (2 Credits)**

Approaches for prevention of childhood obesity, using perspectives from public health, social work, exercise science, pharmacy, medicine, and behavioral nutrition. Training to teach diet/physical activity lessons in elementary school settings.

**Cross-listed course:** HPEB 679

**SOWK 701 - Professional Development Bridge (3 Credits)**

Bridge course designed to prepare newly enrolled Advanced Standing MSW students for their Advanced Practice year of study for the MSW program. Students must hold a BSW from a CSWE- accredited BSW program and be admitted to the University of South Carolina Graduate School and the College of Social Work's Master's Program as an Advanced Standing Student.

**SOWK 702 - Writing for Professional Social Work Practice (3 Credits)**

Prepare students to write effectively for professional practice in social work.

**SOWK 703 - Richland County Sheriff's Department School Practicum (1 Credit)**

This seminar is part of a collaborative school social work/law enforcement practicum immersion study. Permission of the instructor and concurrent enrollment in an instructor-approved field practicum is required.

**SOWK 704 - Nonprofit Leadership (3 Credits)**

This course provides students with foundational knowledge for leading and managing nonprofit or nongovernmental organizations. The student will learn about governance, human resources, financial management, marketing, and planning and evaluation. In this class, the student will use theory to understand effective organizational practices in a modern era. This course counts as a practice elective.

**SOWK 705 - Family Interventions and Family Therapy (3 Credits)**

Social work practice with families, parents, and couples, focused on family interventions and family therapy with culturally diverse and vulnerable family populations. This course counts as a practice elective.

**SOWK 712 - Human Behavior and the Social Environment I (3 Credits)**

Study of institutions, communities, and organizations as social systems relevant to social work practice.

**SOWK 714 - Diversity and Social Justice Issues for Social Work Practice (3 Credits)**

Diversity, strengths, needs, and responses of oppressed populations from a social justice perspective, with emphasis on experiential learning and implications for social work practice at all system levels.

**SOWK 716 - Human Behavior and the Social Environment II (3 Credits)**

A systems approach is used to study the family and individual development. Cultural and structural variability are emphasized.

**SOWK 718 - Systems Analysis of Social Work Practice (3 Credits)**

Integration and application of social work theories, skills, and values in preparation for the transition to professional practice.

**Prerequisites:** Full-time and Part-time Programs: SOWK 779, SOWK 783, SOWK 792 or SOWK 793; Advanced Standing Program: SOWK 779, SOWK 783, SOWK 792 or SOWK 793.

**SOWK 722 - Social Work Practice with Individuals, Families and Small Groups (3 Credits)**

Methods of social work intervention with individuals, families and groups within the social environment.

**SOWK 724 - Advanced Social Work Practice with Groups (3 Credits)**

Advanced study of social work intervention with groups, including treatment, educational, self-help and mutual aid. This course qualifies as a Practice Elective.

**SOWK 726 - Supervision and Case Consultation (3 Credits)**

An in-depth study of modalities for overseeing the delivery of direct services in social agencies. This course qualifies as a Practice Elective.

**SOWK 727 - Social Work in an Educational Setting (3 Credits)**

Examination of school social work services from a multi-level, ecological approach including the community, the school, the family, and the students. This course qualifies as a Practice Elective.

**SOWK 728 - Social Work Case Management (3 Credits)**

Practice of social work case management with a special emphasis on case management for vulnerable populations. This course qualifies as a Practice Elective.

**SOWK 729 - Cognitive Behavioral Therapies (3 Credits)**

Knowledge and skills for practice with cognitive behavior therapies. This course qualifies as a Practice Elective.

**SOWK 730 - Trauma-informed Social Work Practice (3 Credits)**

Integration and infusion of meaning of trauma into one's practice so as to recognize its prevalence, realize its impact, and respond sensitively and competently. This course qualifies as a Practice Elective.

**SOWK 731 - Motivational Interviewing for Social Work Practice (3 Credits)**

Motivational interviewing strategies and advanced practice competencies within a variety of social work practice settings. This course qualifies as a Practice Elective.

**SOWK 732 - Social Work Practice with Organizations and Communities (3 Credits)**

Social work practice in organizations and communities, especially skills in problem identification and solving.

**SOWK 734 - Advanced Social Work Practice with Organizations and Communities: Community Social Work (3 Credits)**

Pro-active macro practice methods in several areas, including legislative advocacy and skills in persuasive communication. This course qualifies as a Practice Elective.

**SOWK 737 - Overview of Social Work Practice with the Military, Veterans, and their Families (3 Credits)**

Foundation knowledge for practice with military and their families including information about military culture, values. An overview of military knowledge and history essential for working with this population, information about problems unique to the military, and the identification of treatment and community resources.

**SOWK 738 - Military Mental Health and the Impact of Trauma (3 Credits)**

Designed to provide state-of-the-art information about problems and disorders encounter by veterans and military personnel, including information about the signature injuries associated with current and past conflicts, as well as information about problems encountered in family life.

**SOWK 739 - Intervention Strategies in Military Behavioral Health (3 Credits)**

Military social work focuses on social work practice, policy, and advocacy and includes preventive, treatment, and rehabilitative services to uniformed service members veterans, and their families.

**SOWK 740 - International Social Work and Social Justice (3 Credits)**

International aspects of social work in the United States and in a global context.

**SOWK 742 - Social Welfare Policy Analysis (3 Credits)**

Analysis of social welfare policies, including their development, implementation, and evaluation.

**SOWK 743 - Immigration Policy (3 Credits)**

This course examines immigration policy in the contemporary U.S. context. It explores current policy debates in light migration research and theory, and aims to address the following questions: Why do people migrate? How do they adapt once they arrive? How does immigration impact receiving societies?

**SOWK 744 - Grant Writing (3 Credits)**

Planning and program development through grant writing that can be generalized to any setting and relevant to social, community, and economic development as well as other areas of social work practice.

**SOWK 745 - Housing and Community Development (3 Credits)**

Examination of housing and community development in contemporary society. Major issues and debates in the field are considered and critically examined. This course qualifies as a Practice Elective.

**SOWK 746 - Community Mental Health (3 Credits)**

Course develops skills for effective social work practice within dynamic and multifaceted mental health settings. Substantive areas include role play, research informed practice and practice informed research, and reflective/reflexive practice. The primary goal is to produce practitioners capable of influencing mental health related practice paradigms, programs, services, interventions, and policies. This course qualifies as a Practice Elective.

**SOWK 748 - Crisis Intervention (3 Credits)**

This course introduces students to crisis theory and intervention models for response to a variety of individual, family, and community crises. This course focuses on crisis theories, the tasks associated with crisis care, methods of intervention and the responses to specific crises.

**SOWK 749 - Evidence Based Parenting Interventions Child & Adolescent Social, Emotional, & Behavioral Challenges (3 Credits)**

Examines theories of practice and parenting interventions with strong empirical evidence for supporting positive youth development and preventing or ameliorating child and adolescent social, emotional, and behavioral challenges among diverse youth and parents.

**SOWK 751 - Youth and Substance Use (3 Credits)**

Students are introduced to the unique dynamics of substance use among adolescent populations. Students gain foundational knowledge about adolescent development, substance use trends and prevalence among adolescent populations. Risk and protective factors are explored that impact adolescent substance use, and systems of care for this unique group.

**SOWK 752 - Social Work Intervention in Substance Abuse (3 Credits)**

Knowledge and skills for substance abuse treatment for clients from diverse backgrounds with a focus on empirically based methods from a social work practice. This course qualifies as a Practice Elective.

**SOWK 756 - Social Work Practice and Developmental Disabilities (3 Credits)**

Explores values, addresses psychosocial issues and examines assessment and intervention tools important for practice with persons with disabilities, their families and the community.

**SOWK 758 - Family Dynamics and Substance Abuse (3 Credits)**

An examination of the family dynamics of drug abuse, including the etiology, assessment approaches, and prevalent treatment methods. Special emphasis on the role of the family as a contributing factor and vehicle for positive change.

**SOWK 759 - Psychopathology and Psychodiagnostics for Social Work Practice with Children and Adolescents (3 Credits)**

This course introduces students to etiology, assessment, and diagnosis of child and adolescent mental health within the social work person-in-environment framework to understand the critical biopsychosocial influences on incidence and manifestation of the most commonly presented disorders and the differential effect of these factors on diverse and at-risk populations.

**SOWK 760 - Psychopathology and Psychodiagnostics for Social Work Practice with Adults and Older Adults (3 Credits)**

This course introduces students to etiology, assessment, and diagnosis of adult and older adult mental health within the social work person-in-environment framework to understand the critical biopsychosocial influences on incidence and manifestation of the most commonly presented disorders and the differential effect of these factors on diverse and at-risk populations.

**SOWK 762 - Loss, Grief, and Social Work Intervention (3 Credits)**

Losses encountered throughout the life cycle, normal and pathological grieving, and intervention techniques.

**SOWK 764 - Independent Study (3 Credits)**

For advanced graduate students.

**SOWK 765 - Sexuality Issues for Social Work Practice (3 Credits)**

Sexuality in the context of social functioning and its relationship to problems encountered by social work practitioners. Emphasis on problems of sexual oppression.

**SOWK 768 - Special Topics in Social Work (1-3 Credits)**

An in-depth study of selected issues, social concerns, and application of behavioral implications for practice. May be repeated as content varies by title.

**SOWK 769 - Interdisciplinary Perspectives on Child Abuse and Neglect (3 Credits)**

Current knowledge about child abuse and neglect, including typologies, etiology, effects, and current practice interventions.

**SOWK 771 - Psychosocial Approaches to Gerontology (3 Credits)**

Introduction to gerontology from the fields of demography, psychology, sociology, social welfare, and economics.

**Cross-listed course:** PSYC 700

**SOWK 772 - Programs and Services for Older Adults (3 Credits)**

Examination of the policy/planning issues relating to older adults, including current trends in services, base for social service development, and evaluation of services for older adults.

**SOWK 777 - Advanced Theory for Social Work Practice (3 Credits)**

A theoretical background for specialized advanced social work practice incorporating social and behavioral science as a framework for analyzing evidence-based approaches for social work interventions.

**Prerequisites:** Full-time and Part-time Programs: SOWK 712, SOWK 714, SOWK 716, SOWK 781, SOWK 791; Advanced Standing Program: None.

**SOWK 778 - Advanced Analysis of Social Policy, Programs, and Services (3 Credits)**

Overview of the structure and functions of programs, policies, and systems in a specialized area of practice, including the history of policy development, the current policy environment, and the role of social workers and the social work profession in shaping and implementing policy in this area.

**Prerequisites:** Full-time and Part-time Programs: SOWK 777, SOWK 779, SOWK 783; Advanced Standing Program: SOWK 777, SOWK 779, SOWK 783.

**SOWK 779 - Advanced Social Work Interventions (3 Credits)**

Advanced direct practice in a specialized area with a focus on engagement, assessment, intervention planning and implementation, and practice evaluation for diverse client systems at multiple levels. Instructor permission required for non-MSW program students.

**Prerequisites:** Full-time and Part-time Programs: SOWK 722, SOWK 732, SOWK 742, SOWK 777, SOWK 782; Advanced Standing Program: SOWK 777.

**SOWK 781 - Field Instruction I: Generalist Social Work Practice (3 Credits)**

An agency-based study of the community social welfare system and the social agency's place in delivery of services; a beginning involvement in agency practice.

**SOWK 782 - Field Instruction II: Generalist Social Work Practice (3 Credits)**

An agency-based study of the community social welfare system and the social agency's place in delivery of services; a beginning involvement in agency practice.

**Prerequisites:** Full-time and Part-time Programs: SOWK 781; Advanced Standing Program: None.

**SOWK 783 - Field Instruction III: Advanced Social Work Practice (3 Credits)**

Advanced experience in social work practice with individuals, families, and small groups with focus on treatment process and differential use of alternative modalities of intervention.

**Prerequisites:** Full-time and Part-time Programs: SOWK 722, SOWK 732, SOWK 742, SOWK 777, SOWK 782; Advanced Standing Program: None.

**SOWK 784 - Field Instruction IV: Advanced Social Work Practice (3 Credits)**

Advanced experience in social work practice with individuals, families, and small groups with focus on treatment process and differential use of alternative modalities of intervention.

**Prerequisites:** Full-time and Part-time Programs: SOWK 779, SOWK 783, SOWK 792 or SOWK 793; Advanced Standing Program: SOWK 779, SOWK 783, SOWK 792 or SOWK 793.

**SOWK 791 - Social Work Research Methodologies (3 Credits)**

Examination of social work research contexts, designs, and strategies.

**SOWK 792 - Evaluation of Social Work Practice (3 Credits)**

Examines a number of single-system designs that can be used to evaluate practice or practice interventions with clients.

**Prerequisites:** Full-time and Part-time Programs: SOWK 791; Advanced Standing Program: None.

**SOWK 793 - Evaluation of Social Work Programs (3 Credits)**

Examines methods that can be used to evaluate social work programs, policies, and practice.

**Prerequisites:** Full-time and Part-time Programs: SOWK 791; Advanced Standing Program: None.

**SOWK 800 - Intellectual Foundations of Social Welfare and Social Work I: Historical Roots (3 Credits)**

Examines across disciplines the theoretical and empirical foundations for social welfare and social work in historical, economic, social, and political contexts prior to the 20th century.



**SOWK 801 - Intellectual Foundations of Social Welfare and Social Work II: Modern Developments (3 Credits)**

Examines across disciplines the theoretical and empirical foundations of social welfare and social work in historical, economic, social, and political contexts from the early 20th century to the present.

**SOWK 802 - Intellectual Foundations of Social Welfare and Social Work III: Conceptual Model-Building (3 Credits)**

Examines the process of developing theory-based welfare and social work scholarship from a variety of research approaches, focusing on conceptual model-building.

**SOWK 811 - Qualitative Methods of Inquiry for Social Work Research (3 Credits)**

Foundations of qualitative methods in social research with emphasis on intensive interviewing and grounded theory.

**SOWK 822 - Measurement and Instrument Design (3 Credits)**

Advanced study to evaluate and design measurement and instrumentation in social work research. Restricted to social work doctoral students.

**Prerequisites:** SOWK 891, SOWK 892.

**SOWK 830 - Community - Engaged Research for Social Welfare and Social Change (3 Credits)**

Doctoral-level course covering conceptual foundations and key processes and skills of community-engaged research for understanding and promoting social welfare and social change. Emphasis on engagement with community, collaboration, challenges, and ethics. Assignments include practical community-engaged research experience.

**SOWK 831 - Leadership for Social Change (3 Credits)**

Examines theoretical and practical foundations of providing leadership for social change through organizations, communities, public policies, and social norms.

**SOWK 850 - Social Work Doctoral Professional Seminar (1-2 Credits)**

Examines issues related to making a successful transition from doctoral student to professional social work scholar. May be repeated for credit.

**SOWK 872 - Social Work Education Practicum (0 Credits)**

A wide range of supervised classroom, field, and other learning experiences designed to prepare the student for work as a social work educator.

**Prerequisites:** SOWK 871.

**SOWK 889 - Doctoral Social Work Practicum (0 Credits)**

Students acquire practical research experience, based on an individualized learning contract, under the supervision of a faculty member.

**SOWK 890 - Analysis of Social Work Data (3 Credits)**

Approaches to the organization, analysis, interpretation, and utilization of data sets available from social agency records or from existing empirical research.

**SOWK 891 - Advanced Analysis of Social Work Data (3 Credits)**

Analysis of complex data sets from social services agencies and other research sources. Before enrolling in SOWK 891 (Advanced Analysis of Social Work Data), student must demonstrate proficiency in computer applications for statistical analysis using software designated by the Doctoral Program Committee. Typically this will be accomplished by completing an online tutorial (not for credit). Contact the Doctoral Program Director for instructions about the tutorial or contact [coswphd@mailbox.sc.edu](mailto:coswphd@mailbox.sc.edu).

**SOWK 892 - Design and Critical Analysis of Social Work Research (3 Credits)**

Advanced study of research methods commonly employed in the development of knowledge for social work practice and education. Critique of published social work research using a standardized critique model.

**SOWK 894 - Planning and Design of Dissertation Research (1 Credit)**

A seminar designed to provide intensive faculty supervision and peer consultation to the doctoral student in the preparation of the dissertation proposal. Repeatable- 2 credits required for the doctoral program.

**Prerequisites:** SOWK 890, SOWK 891, SOWK 892, SOWK 811.

**SOWK 899 - Dissertation Preparation (1-12 Credits)**

**Prerequisite:** SOWK 894.

## Sociology (SOCY)

**SOCY 500 - Social Networks (3 Credits)**

Analysis of personal, social and organizational networks, their structural patterns, practical consequences, and principles of formation and change.

**SOCY 502 - Political Sociology (3 Credits)**

Theory and research concerning the interrelationship between the polity and social structures.

**SOCY 503 - Family and Social Stratification (3 Credits)**

An analysis of the contemporary American family emphasizing social stratification, mobility, occupations, and urbanization.

**SOCY 504 - Social Stratification (3 Credits)**

Theory and research in social stratification.

**SOCY 505 - Social Structures in Communities (3 Credits)**

Interrelationships of major social structures within communities.

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy

**SOCY 506 - Social Organizations (3 Credits)**

Selected theoretical orientation, methodological procedures, and illustrative substantive issues pertaining to organizations.

**SOCY 507 - Sociology of Social Control (3 Credits)**

Theories and issues relating to the definition of and response to crime and/or deviance.

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy

**SOCY 509 - Advanced Social Structures (3 Credits)**

The analysis of core methodological and substantive issues in the study of social structures.

**SOCY 510 - Life Course Demographics (3 Credits)**

People's demographic lives, structural contexts, and social change. Emphasis on the socioeconomic context in which lives unfold.

**Prerequisites:** SOCY 310.

**SOCY 512 - Internal and International Migration (3 Credits)**

A survey of methods of analysis and research findings with emphasis on the social and economic concomitants of internal migration. Cultural, economic, and historical aspects of international migration. Effects of governmental policies on immigration and emigration. Examination of selected countries.

**SOCY 514 - Urbanization (3 Credits)**

Analysis of urbanization using contemporary and historical data from developing societies. The demographic components of metropolitan growth and the changing structure of metropolitan communities.

**SOCY 515 - Scientific Methods and Sociological Inquiry (3 Credits)**

Introduction to methods used to answer theoretical, empirical, and practical sociological questions, including scientific inquiry and research design.

**SOCY 520 - Advanced Social Psychology (3 Credits)**

Advanced survey of social psychological perspectives and research on inequality, discrimination, power and status, cooperation and collective action, social norm and morality, networks and relationships.

**SOCY 521 - Small Group Analysis (3 Credits)**

A behavioral analysis of small groups.

**SOCY 522 - Power and Authority Structures in Groups (3 Credits)**

An exploration of theoretical perspectives, methodological approaches, and substantive issues in the study of interpersonal power and authority.

**SOCY 523 - Social Processes of Deviance Control (3 Credits)**

A systematic analysis of the interrelation among the creation, involvement, recognition, and control of deviance.

**SOCY 524 - Interpersonal Behavior in Families (3 Credits)**

Social psychological perspectives on family behavior.

**SOCY 525 - Selves and Social Transaction (3 Credits)**

A systematic analysis of interrelationships among social acts, selves, roles, transactions, and language.

**SOCY 540 - Sociology of Law (3 Credits)**

Review of theoretical and empirical developments in the sociology of law, including classical and modern sociological theories of law and selected sociological themes of law in various social settings.

**SOCY 550 - Sociology of Science (3 Credits)**

Interrelationships among society, culture, and contemporary science.

**SOCY 557 - Sociology of Education and Inequality (3 Credits)**

Advanced inquiry into the relationship between education and inequality.

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy

**SOCY 560 - Advanced Sociological Theory (3 Credits)**

Theoretical perspectives on society and social behavior.

**SOCY 561 - Integrative Research Experience (3 Credits)**

Design and conduct of original research using sociological research methods to meet Carolina Core Integrative course requirement for the BA and the BS.

**Prerequisites:** SOCY 101, SOCY 220 and SOCY 300-level or higher course.

**Experiential Learning:** Experiential Learning Opportunity

**SOCY 562 - Advanced Sociological Research Methods (3 Credits)**

Advanced survey of methods used in sociological research.

**SOCY 598 - Selected Topics (3 Credits)**

Readings and research on selected sociological topics. Course and content varies and will be announced in the schedule of classes by title.

**Prerequisites:** SOCY 101.

**SOCY 599 - Advanced Independent Study (3-6 Credits)**

Advanced Independent study. Contract approved by instructor, advisor, and department chair is required.

**Prerequisites:** SOCY 101.

**SOCY 698 - Special Topics (3 Credits)**

Reading and research.

**Prerequisites:** SOCY 101.

**SOCY 710 - Theoretical Foundations of Sociology (3 Credits)**

Survey of theoretical and empirical works of sociological scholars.

**SOCY 711 - Theory Construction (3 Credits)**

Presentation and study of the major theory groups in contemporary sociology, including functionalism, exchange, and consistency theories. Analysis of theoretical perspectives using criteria of logical consistency and adequacy of explanation. Techniques of building formal theory in sociology.

**SOCY 719 - Selected Topics in Sociological Theory (3 Credits)**

Prerequisite: SOCY 710.

**SOCY 720 - Survey of Research Methods (3 Credits)**

Survey of data-gathering techniques used in sociology including questionnaires, interviews, surveys, archival searches, experiments, and observational techniques.

**SOCY 721 - Selected Sociological Topics in Methodology (3 Credits)**

Intensive focus on selected social research methods having applications to the study of sociology.

**SOCY 729 - Selected Sociological Topics in Methodology (3 Credits)**

Prerequisite: SOCY 701.

**SOCY 730 - Statistical Analysis in Sociology (3 Credits)**

Introduction to statistical analysis in sociology, including bivariate and multiple regression, correlation and analysis of variance.

**Prerequisites:** SOCY 700.

**SOCY 731 - Topics in the Quantitative Analysis of Sociological Data (3 Credits)**

Recursive and non-recursive modelling, multiple regression using longitudinal data, event history analysis.

**Prerequisites:** SOCY 515.

**SOCY 732 - Topics in the Analysis of Social Networks (3 Credits)**

Selected topics in the theory, measurement, and analysis of social networks.

**SOCY 733 - Topics in Scaling and Measurement Methods (3 Credits)**

Selected topics in scaling and measurement of social science data emphasizing exploratory and descriptive techniques such as correspondence analysis, proximity scaling and contingency table representations.

**SOCY 734 - Experimental Methods in Sociology (3 Credits)**

Purposes, design and implementation of laboratory experiments in sociology.

**SOCY 739 - Selected Topics in the Quantitative Analysis of Sociological Data (3 Credits)**

Prerequisite: SOCY 700.

**SOCY 745 - Social Demography (3 Credits)**

Classical and contemporary theories and analytical approaches to demography.

**SOCY 746 - Sociology of the Family (3 Credits)**

Sociological theories of the family and social change.

**SOCY 749 - Selected Topics in Demography (3 Credits)**

Introduction to selected research methodologies having applications to the study of demography.

**Prerequisites:** SOCY 515.

**SOCY 755 - Social Structures and Inequality (3 Credits)**

Social inequality and stratification studied from a structural perspective, focusing on patterns in institutions that perpetuate inequality.

**SOCY 756 - Race, Class, Gender, and Sexuality (3 Credits)**

Historical and contemporary dimensions of social inequality centered in race, social class, gender, and sexuality.

**Cross-listed course:** PSYC 751

**SOCY 759 - Selected Sociological Topics in Social Structures (3 Credits)**

Prerequisite: SOCY 700.

**SOCY 765 - Contemporary Group Processes (3 Credits)**

Theories and problems in contemporary groups processes; primary emphasis on theories of status, power, justice, emotion, and legitimacy.

**SOCY 769 - Selected Sociological Topics in Social Psychology (3 Credits)**

Prerequisite: SOCY 700.

**SOCY 775 - Medical Sociology (3 Credits)**

Social and cultural meanings, determinants, and experiences of health and illness; organization of health care delivery system; impact of culture, roles, and relationships on patients and providers.

**SOCY 779 - Selected Topics in Medical Sociology (3 Credits)**

Topics from Medical Sociology theory and research. May be repeated as content varies by title.

**SOCY 780 - Sociology Proseminar (1 Credit)**

This seminar introduces graduate students in sociology to aspects of the sociological profession that are beyond the confines of sociological theory, methodology, and the discipline's substantive interests.

**SOCY 781 - Teaching Sociology (1-3 Credits)**

An exploration of college teaching of sociology, including goals, means, and challenges.

**Prerequisites:** SOCY 515.

**SOCY 790 - Special Topics: Reading and Research (3 Credits)****SOCY 791 - Special Topics: Reading and Research (3 Credits)****SOCY 799 - Thesis Research and Preparation (1-9 Credits)**

CL: 2020.

**SOCY 890 - Special Topics: Reading and Research (3 Credits)****SOCY 891 - Special Topics: Reading and Research (3 Credits)****SOCY 899 - Dissertation Preparation (1-12 Credits)**

CL: 2020.

## Southern Studies (SOST)

**SOST 500 - Topics in the American South (3 Credits)**

Selected topics related to the study of the American South. Course content varies and will be announced in the schedule of classes by title. May be repeated for credit as topics vary.

## Spanish (SPAN)

**SPAN 500 - Contemporary Spain (3 Credits)**

Analysis and discussion of 20th-century Spanish history and the sociocultural forces that have contributed to define this country's national identity. Taught in Spanish.

**Prerequisites:** SPAN 303 for Undergraduates, Phase II placement exam above SPAN 303.

**Graduation with Leadership Distinction:** GLD: Global Learning

**SPAN 501 - Contemporary Spanish America (3 Credits)**

Analysis and discussion of 20th-century Spanish American history and the sociocultural forces that have contributed to define this area's national identities. Taught in Spanish.

**Cross-listed course:** LASP 501

**SPAN 513 - Introduction to Professional and Technical Translation (3 Credits)**

Introduction to translation and practice of skills required for professional and technical Spanish/English translation.

**Prerequisites:** SPAN 409.

**SPAN 515 - Introduction to Spanish Linguistics (3 Credits)**

Phonology, morphology, and syntax of modern Spanish.

**Prerequisites:** SPAN 303, Phase II placement exam above SPAN 303.

**SPAN 516 - The Structure of Modern Spanish (3 Credits)**

Description of the grammatical structures of Modern Spanish. Intensive study of the theory and practice of word formation and sentence structure of Spanish.

**Cross-listed course:** LING 554

**SPAN 517 - Contrastive English-Spanish Phonetics and Phonology (3 Credits)**

Introduction to the study of phonetics and phonology and their application to the sounds and sound systems of English and Spanish. Includes transcription practice and discussion of relevance to teaching.

**Cross-listed course:** LING 514

**SPAN 518 - Introduction to Spanish Medieval Literature (3 Credits)**

Survey of Spanish literature from its first manifestations to La Celestina. Introduction; early works; the epic; 13th- through 15th-century prose and verse; Berceo, Alfonso X, Juan Ruiz, Marques de Santillana; others.

**Prerequisites:** SPAN 312 for undergraduates.

**SPAN 524 - Renaissance and Golden Age Literature (3 Credits)**

Survey of the works of Garcilaso, the Spanish mystics, Lope, Quevedo, Tirso, Calderon, Gongora and others.

**Prerequisites:** SPAN 312 for undergraduates.

**SPAN 534 - Nineteenth-Century Spanish Literature (3 Credits)**

Survey of the works of the major literary figures of the period.

**Prerequisites:** SPAN 312 for undergraduates.

**SPAN 538 - Twentieth-Century Spanish Literature (3 Credits)**

Survey of major peninsular writers from the Generation of '98 to the present.

**Prerequisites:** SPAN 312 for Undergraduates.

**SPAN 541 - Colonial Spanish-American Literature to Neoclassicism (3 Credits)**

Survey of pre-Columbian poetry and of texts dating from the time of Columbus to the end of the Colonial period.

**Cross-listed course:** LASP 541

**SPAN 543 - Spanish-American Literature from the Independence Through Modernism (3 Credits)**

Survey of the most significant works of the Independence through Modernism.

**Prerequisites:** SPAN 312 for Undergraduates.

**SPAN 550 - Advanced Language Study Abroad (3 Credits)**

Intensive language practice in native environment with special emphasis on oral skills. Instruction by native speakers; extensive community contact and home stay. Prior placement test required.

**SPAN 555 - Spanish-American Literature from Modernism Through 1960 (3 Credits)**

Survey of the most significant works of this period.

**Prerequisites:** SPAN 312 for undergraduates.

**SPAN 557 - Contemporary Spanish-American Literature (3 Credits)**

Survey of the most significant works from 1960 to the present.

**Cross-listed course:** LASP 471

**SPAN 575 - Special Topics in Spanish (3 Credits)**

Course content varies and will be announced in the schedule of classes by title. May be repeated as content varies by title.

**Prerequisites:** D or better in SPAN 312 or graduate standing.

**SPAN 615 - Intensive Readings in Spanish (3 Credits)**

Intensive reading for non-majors. Graduate students fulfill their foreign-language requirement with successful completion of the course.

Undergraduates may take the course as an elective only by permission.

**SPAN 700 - Introduction to Graduate Studies in Languages, Literatures, and Cultures (3 Credits)**

An introduction to graduate studies that includes a survey of contemporary literary theory, an overview of the current state of the profession, and instruction in how to carry out research and write at the graduate level.

**Cross-listed course:** CPLT 700, FREN 700, GERM 700

**SPAN 711 - Introduction to Literary Theory and Criticism (3 Credits)**

Overview of the main theories and methods in analyzing Spanish and Spanish-American literature.

**SPAN 715 - History of the Spanish Language (3 Credits)**

Development of the language from its origins to the present day.

**Cross-listed course:** LING 734

**SPAN 722 - Cervantes (3 Credits)**

Selected topics from among the works of Cervantes, including Don Quixote, the Galatea, the Persiles, the Novelas ejemplares, and his dramatic works.

**SPAN 724 - Renaissance and Baroque Poetry and Drama (3 Credits)**

In-depth study of the works of Lope de Vega, Quevedo, Góngora, Calderón, and others.

**SPAN 730 - Contemporary Spanish Prose Fiction (3 Credits)**

Emphasis on the post-Spanish Civil War narrative.

**SPAN 732 - Nineteenth-Century Spanish Prose and Poetry (3 Credits)**

Intensive reading of major works of Spanish Romanticism and Realism.

**SPAN 733 - Trans-Atlantic Perspectives (3 Credits)**

An exploration of the Inter-connection between Spain and the Americas including issues relating to processes of articulation and assimilation between the Spanish legacy and America's cultures, together with the African dimensions.

**SPAN 734 - Spanish Poetry: Generation of '27 (3 Credits)**

Intensive study of the works of Alberti, Aleixandre, Cernuda, Garc a Lorca, Guill n, Salinas and others.

**SPAN 736 - The Generation of 1898 (3 Credits)**

Essay, verse, drama, and fiction of the major writers of this generation.

**SPAN 745 - Seminar in Spanish-American Drama (3 Credits)**

Selected Spanish-American dramatic works from the colonial period to the present.

**SPAN 746 - Post-Baroque Spanish Drama (3 Credits)**

An application of major European stage theories to the Spanish modern stage (1800-2000).

**SPAN 747 - The Modern Spanish-American Novel (3 Credits)**

Seminar on selected Spanish-American novels from independence through the Hispanic Vanguard.

**SPAN 751 - Twentieth-Century Spanish-American Short Story (3 Credits)**

Seminar on selected Spanish-American novels from independence through the Hispanic Vanguard.

**SPAN 752 - Twentieth-Century Spanish Exile Literature (3 Credits)**

Study of the creative works written by high-profile Spanish writers while in exile (in Mexico, Puerto Rico, Argentina, and the United States) during the Spanish Civil War and ensuing Francoist regime.

**SPAN 763 - Contemporary Spanish-American Narrative (3 Credits)**

Study of the Spanish-American narrative of the 20th century (novel and short story).

**SPAN 765 - Contemporary Spanish-American Poets (3 Credits)**

The works of Vallejo, Mistral, Neruda, Borges, Cardenal, Paz, and others.

**SPAN 767 - Spanish-American Testimonial Literature (3 Credits)**

Study of texts revealing patterns of disenfranchisement and human rights violations. All genres, including films.

**SPAN 769 - Hispanic Women Writers (3 Credits)**

The works of significant women authors in Spain and Spanish America.

**SPAN 771 - Spanish-American Modernism (3 Credits)**

Study of the poetry and prose of the most significant authors of the late 19th and early 20th centuries.

**SPAN 775 - Seminars on Selected Topics in Foreign Language Education (3 Credits)**

Topics will be identified by title in the schedule of classes. Each topic may be taken only once.

**SPAN 776 - The Teaching of Foreign Languages in College (3 Credits)**

Basic principles of foreign language teaching in college combined with practical demonstrations Note: Required of all graduate assistants. This course will not count toward the 30-hour M.A. or M.A.T. requirements.

**SPAN 777 - Supervised Instruction in Teaching Foreign Languages in College (0 Credits)**

Supervised direction of foreign language teaching in college. Required of all graduate assistants who are teaching. This course will not count toward the 30-hour M.A. or M.A.T. degree.

**SPAN 780 - Seminars in Hispanic Literature (3 Credits)**

Topics to be announced each semester.

**SPAN 783 - Seminars on Selected Topics (1-3 Credits)**

Topics will be identified by title in the schedule of classes. Course can be repeated for credit for a maximum of 6 hours.

**SPAN 796 - Independent Study (1-3 Credits)**

Up to a maximum of 3 total hours, if repeated.

**SPAN 799 - Thesis Preparation (1-9 Credits)****SPAN 880 - Seminar on Special Topics in Transatlantic Studies (3 Credits)**

Topics will be identified by title in the schedule of classes. Course can be repeated for credit for a maximum of 6 hours.

**SPAN 881 - Seminar on Special Topics in Spanish-American Literatures and Cultures (3 Credits)**

Topics will be identified by title in the schedule of classes. Course can be repeated for credit for a maximum of 6 hours. Restricted to M.A. and Ph.D. students.

**SPAN 882 - Seminar on Special Topics in Peninsular Spanish Literature and Culture (3 Credits)**

Topics will be identified by title in the schedule of classes. Course can be repeated for credit for a maximum of 6 hours. Restricted to Graduate Students.

**SPAN 899 - Dissertation Preparation (1-12 Credits)**

Work on the research and writing of the Ph.D. dissertation.

## Speech (SPCH)

**SPCH 543 - Communication, Law, and Society (3 Credits)**

Examines the role of communication in legal and judicial contexts. Focus on case studies that illustrate the theoretical and practical significance of rhetoric in the work of the courts, lawyers, and public advocacy groups.

**SPCH 700 - Introduction to the Advanced Study of Speech Communication & Rhetoric (3 Credits)**

Introduction to theories, concepts, and analysis in critical rhetorical and communication research. Emphasis on rhetoric, public advocacy and discourse, performance, critical theory.

**SPCH 701 - Pedagogies of Speech Communication & Rhetoric (3 Credits)**

Survey of issues, theories, and methods of pedagogy in speech communication, rhetoric, and performance studies.

**SPCH 734 - Theories of Public Argumentation (3 Credits)**

Advanced study of theories and practices of public and cultural argumentation. Emphasis on critical argumentation theories and analysis of public arguments.

**SPCH 736 - Critical Theory & Rhetoric (3 Credits)**

Examination of the role of language, rhetoric, and argumentation in the historical and contemporary project of critical social theory.

**SPCH 741 - Theory and Practice of Rhetorical Criticism (3 Credits)**

Advanced study of theories of rhetorical criticism and the conceptual assumptions that motivate, compose, and justify critical interpretations of rhetorical acts, performances, and events.

**SPCH 744 - Public Advocacy and Civil Society (3 Credits)**

Examination of the rhetorical operations that define, sustain, and reshape historical and contemporary forms of civil society, including modes of public address, community engagement, non-profit advocacy, and political communication.

**SPCH 746 - Rhetoric of Movements (3 Credits)**

Advanced study of the rhetoric of political social movements.

**SPCH 747 - Rhetorical Power, Institutional Discourse, and Recognition (3 Credits)**

Advanced study of institutional discourse and the role of institutional argumentation in the formation and critique of power. Includes directed inquiry into the rhetorical dynamics of consensus-formation, dissent, and recognition as they unfold between institutions, publics, and cultures.

**SPCH 749 - Performance and Cultural Studies (3 Credits)**

Theories and research exploring the mutual contributions of performance and cultural studies. Emphasis on performance as both a subject of critical/cultural inquiry as well as a method of critical/cultural invention.

**SPCH 751 - Performance Criticism (3 Credits)**

Study of critical performance methods and the conceptual and paradigmatic assumptions that motivate, compose, and justify performance as a critical act, criticism as a performative act, and performance events as critical objects.

**SPCH 755 - Theories of Performance, Representation, and Advocacy (3 Credits)**

Exploration of performance as a site of and means for representing and creating social change.

**SPCH 761 - Ethics & Politics of Rhetoric (3 Credits)**

Examination of the ethical and political commitments in the rhetorical tradition. Emphasis on the intersection of rhetorical scholarship with issues in communication ethics and their implications for political rhetoric.

**SPCH 762 - Rhetorics of Materiality, Technology, and Science (3 Credits)**

Study of the rhetorical analysis of scientific and technological public discourse, implications of public science and technological changes for the theory and practice of rhetoric, and the rhetorical construction of sciences and technologies.

**SPCH 764 - Rhetoric, Violence, and the Discourse of Human Rights (3 Credits)**

Advanced study of the rhetorical violence that attends the human condition and its attempted redress through discourses of human rights. Special attention devoted to theories of violence and critical interpretation of legal discourse, human rights doctrine, and humanitarian advocacy.

**SPCH 790 - Special Topics in Speech Communication, Rhetoric, and Performance (3 Credits)**

Selected topics in speech communication, rhetoric, and performance studies. May be repeated as content varies by title.

**SPCH 792 - Classical Rhetorical Theory (3 Credits)**

Survey of ancient Greek and Roman rhetorical theory.

**SPCH 793 - Medieval to Modern Rhetorical Theory (3 Credits)**

Survey of important figures, debates, and perspectives in rhetorical theory from the Medieval period to the 19th century.

**SPCH 794 - Contemporary Rhetorical Theory (3 Credits)**

Survey of major figures, debates, and theories in the field of rhetoric from the 19th century to present.

**SPCH 796 - Independent Study in Speech Communication, Rhetoric, and Performance (1-3 Credits)**

Individually arranged studies in specialized areas of speech communication, rhetoric, or performance.

**SPCH 797 - Special Projects in Speech Communication, Rhetoric, and Performance (1-3 Credits)**

Individually research projects focused on a selected area of speech communication, rhetoric, or performance.

**SPCH 799 - Thesis Preparation (1-9 Credits)**

To be arranged by candidates for the Master of Arts degree with the instructor under whose direction the master's thesis is being written.

## Sport & Entertainment Mgmt (SPTE)

### SPTE 501 - Trends and Issues in Sport and Entertainment Management (3 Credits)

Trends and Issues in Sport and Entertainment Management.

### SPTE 545 - Managing Part-Time Employees and Volunteers (3 Credits)

Recruiting, hiring, training, and retaining part-time employees and volunteers in sport and entertainment.

### SPTE 550 - The Business of Esports (3 Credits)

This course is designed to provide students with an overview of the business of esports. It will focus on the history of video games from creation to the present and will also cover the various business elements of the modern, competitive esports environment.

### SPTE 560 - Performing Arts Management and Leadership (3 Credits)

The study of performing arts management as it relates to nonprofits and organizational structure.

**Prerequisites:** C or better in SPTE 202 and SPTE 380.

### SPTE 565 - Business of Broadway (3 Credits)

The study of the management of Broadway productions from script to play, including the creative process, business ventures, production houses, and investor relations.

**Prerequisites:** SPTE 202 and SPTE 380; C or higher for SPTE majors.

### SPTE 570 - Special Topics in Global Sport (3 Credits)

This course examines a variety of global sport and entertainment management issues. The emphasis will be on an understanding of the concepts related to the sport and entertainment management in an international setting. Content varies by title. May be repeated once.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

### SPTE 580 - Business Principles in Sport Management. (3 Credits)

Business principles in the management of public and private sector sport programs.

### SPTE 585 - Sports Economics (3 Credits)

This course focuses on issues relevant to sport, entertainment, and related industries. The goal of the class will be for students to understand both basic and complex concepts within economics in a sport and entertainment context, in order to grasp the importance of economic decision-making.

### SPTE 590 - Special Topics in Live Entertainment and Sport (3 Credits)

Investigation of Special topics pertinent to the sport and entertainment management industry. Content varies by title. May be repeated twice.

### SPTE 635 - Sport and Entertainment Event Development (3 Credits)

Business concepts needed to develop sport and entertainment special events.

### SPTE 640 - Venue Management: Principles and Practices (3 Credits)

Managing public assembly facilities and venues.

**Prerequisites:** SPTE 203 or equivalent.

### SPTE 650 - Integrated Marketing Communication in Sport and Entertainment (3 Credits)

Use of integrated marketing communication concepts, theories, and strategies in sport and entertainment.

**Prerequisites:** MKTG 350.

### SPTE 655 - Social Media in Live Entertainment and Sport (3 Credits)

In-depth investigation of social networks, digital platforms, and online marketing for the live entertainment and sport industries.

### SPTE 701 - Management in the Sport and Entertainment Industry (3 Credits)

Management principles in the sport and entertainment industry.

### SPTE 720 - Advanced Live Entertainment Management (3 Credits)

The advanced study of underlying themes in entertainment management and its application to music, family shows, and other live entertainment business venues.

### SPTE 730 - Advanced Sport and the Law (3 Credits)

Advanced knowledge of the legal issues that frequently arise in the context of sport will be covered. The focus of the course is law as it applies to sport as well as how the law affects participants, spectators, sport organizations, and facility managers, among others.

### SPTE 736 - Sport and Entertainment Event Entrepreneurship (3 Credits)

Process of new venture creation with respect to sport and entertainment events.

### SPTE 746 - Risk and Security Management in Public Assembly Facilities (3 Credits)

The risks and security issues associated with managing public assembly facilities.

### SPTE 750 - Strategic Planning and Policy Development in Sport and Entertainment Management (3 Credits)

Policy development and implementation in the sport and entertainment industry.

### SPTE 760 - Principles of Sport and Entertainment Marketing (3 Credits)

This course is designed to provide a foundation in the principles of sport and entertainment marketing.

**Prerequisites:** Undergraduate marketing class or equivalent.

### SPTE 765 - Advances Sales in Sport and Entertainment Management (3 Credits)

Comparative approaches of revenue generation and sales processes/strategies used by sport and entertainment organizations.

**Prerequisites:** Completion of an introductory marketing course and/or relevant industry marketing experience.

### SPTE 770 - Public Assembly Facility Management Programming and Sales (3 Credits)

Concepts, knowledge, and sales skills involved in programming public assembly facilities.

### SPTE 775 - Event Programming and Production (3 Credits)

This course will examine the critical functions of booking and scheduling a public assembly facility and the production of events in such a venue.

**Prerequisites:** SPTE 640.

### SPTE 780 - Public Assembly Facility Operations and Procedures (3 Credits)

Concepts, knowledge, and operational procedures associated with managing public assembly facilities.

### SPTE 781 - Seminar on the Olympic Games (3 Credits)

Examination of the Olympic Games, a mega sport and tourism event and its impact on the sport, entertainment, hospitality and tourism sectors.

**Cross-listed course:** HRTM 781

### SPTE 790 - Sport and Entertainment Finance (3 Credits)

This course examines financial information necessary to perform the usual duties and responsibilities associated with sport facilities, programs and organizations.

**SPT 798 - Directed Study in Sport and Entertainment Management (3 Credits)**

Independent study for advanced students under faculty supervision. May be taken twice for degree credit.

**SPT 799 - Thesis Preparation (1-6 Credits)**

Thesis preparation in sport and entertainment management.

**SPT 801 - Seminar in SPT Management (3 Credits)**

Acquaints sport management PhD students with advanced principles and applications of the sport and entertainment management discipline. This course will expose the doctoral student to research examining organization, leadership, and strategic management in the sport and entertainment industry and appropriate sub-industries.

**SPT 810 - Seminar in SPT Education (3 Credits)**

Provides Sport and Entertainment Management graduate students with insights that foster professional growth and development as a college instructor. This course examines the scholarship of teaching SPT and developing optimal classroom environments and identification and guided reflective analysis of critical issues in SPT education.

**SPT 830 - Seminar SPT Law & Risk Management (3 Credits)**

Acquaints students with advanced theory and application of law and risk management in sport and entertainment management through the review of scholarship about professional and amateur sport, laws impacting the entertainment industry, and risk management issues within sport and entertainment facilities.

**SPT 860 - Seminar in SPT Marketing (3 Credits)**

Acquaints sport management PhD students with advanced principles and application of the sport and entertainment marketing discipline. The course will take an in-depth look at how amateur/professional sport, and emerging sport business enterprises and trends affect the practice of sport and entertainment marketing. This course is designed for students to study sport and entertainment marketing theories and practical applications and principles by specifically learning about marketing information systems, pricing strategies, media relations, promotional methods and endorsements.

**SPT 880 - Sport and Society (3 Credits)**

When sport is discussed, how we talk about them, and the possible viewpoints are all given beforehand by deeply entrenched social institutions. The objective of this course is to identify how these institutions are constructed, and how sport is an activity that embodies social relations.

**SPT 890 - Seminar in SPT Finance (3 Credits)**

This course covers advanced principles and applications of sport and entertainment finance. The course takes an in-depth look at the theory, concepts, and frameworks of sport and entertainment finance research. The focus will be on the optimum financial policies and decisions of nonfinancial firms in the sport and entertainment industry.

**SPT 899 - Dissertation Preparation (1-12 Credits)**

Assists students through the proposal and dissertation writing process.

## Statistics (STAT)

**STAT 506 - Introduction to Experimental Design (3 Credits)**

Techniques of experimentation based on statistical principles with application to quality improvement and other fields. Full and fractional factorial designs for factors at two levels; dispersion effects; related topics.

**Prerequisites:** C or higher in MATH 122 or MATH 141; or both MATH 111 or higher and any statistical class.

**STAT 509 - Statistics for Engineers (3 Credits)**

Basic probability and statistics with applications and examples in engineering. Elementary probability, random variables and their distribution, random processes, statistical inference, linear regression, correlation and basic design of experiments with application to quality assurance, reliability, and life testing. May not be taken concurrently with or after STAT 513, STAT 515, or STAT 516. Not for C.A.S., M.A.S., or Ph.D credit in Statistics.

**Prerequisites:** MATH 142 or equivalent.

**STAT 511 - Probability (3 Credits)**

Probability and independence; discrete and continuous random variables; joint, marginal, and conditional densities; moment generating functions; laws of large numbers; binomial, Poisson, gamma, univariate and bivariate normal distributions.

**Prerequisites:** C or better in MATH 241.

**Corequisite:** MATH 241.

**Cross-listed course:** MATH 511

**STAT 512 - Mathematical Statistics (3 Credits)**

Functions of random variables, order statistics, sampling distributions, central limit theorem, quality of estimators, interval estimation, sufficient statistics, minimum-variance unbiased estimator, maximum likelihood, large-sample theory, introduction to hypothesis testing.

**Prerequisites:** C or better in STAT 511 or MATH 511.

**STAT 513 - Theory of Statistical Inference (3 Credits)**

Hypothesis testing, Neyman-Pearson lemma, likelihood ratio tests, power, the theory of linear models including multiple linear regression and ANOVA, the Chi-square goodness-of-fit test, Chi-square inference for contingency tables, Bayesian inference, and advanced topics including survival analysis (only if time permits).

**Prerequisites:** C or better in STAT 512.

**STAT 515 - Statistical Methods I (3 Credits)**

Applications and principles of elementary probability, essential discrete and continuous probability distributions, sampling distributions, estimation, and hypothesis testing. Inference for means, variances, proportions, one-way ANOVA, simple linear regression, and contingency tables. Statistical packages such as SAS or R. May not be taken concurrently with or after STAT 509, STAT 513, or STAT 516. Not for CAS, MAS, MS, or PhD credit in Statistics.

**Prerequisites:** C or higher in MATH 122 or MATH 141; or both MATH 111 or higher and any statistics class.

**STAT 516 - Statistical Methods II (3 Credits)**

Applications and principles of linear models. Simple and multiple linear regression, analysis of variance for basic designs, multiple comparisons, random effects, and analysis of covariance. Statistical packages such as SAS. Not for CAS, MAS, MS, or PhD credit in Statistics.

**Prerequisites:** C or higher in STAT 515, STAT 509, STAT 512, or equivalent.

**STAT 517 - Advanced Statistical Models (3 Credits)**

Theory and applications of advanced statistical models. Includes implementation and assessment of generalized linear, nonlinear and nonparametric regression, mixed effect, repeated measures, multivariate regression, and spatial models.

**Prerequisites:** STAT 512 or STAT 516 or equivalent.

**STAT 518 - Nonparametric Statistical Methods (3 Credits)**

Applications and principles of nonparametric statistics. Classical rank-based methods, and selected categorical data analysis and modern nonparametric methods. Statistical packages such as R.

**STAT 519 - Sampling (3 Credits)**

Techniques of statistical sampling in finite populations with applications in the analysis of sample survey data. Topics include simple random sampling for means and proportions, stratified sampling, cluster sampling, ratio estimates, and two-stage sampling.

**Prerequisites:** C or higher in STAT 515, STAT 509, STAT 512, or equivalent.

**STAT 520 - Forecasting and Time Series (3 Credits)**

Time series analysis and forecasting using the multiple regression and Box-Jenkins approaches.

**Prerequisites:** STAT 516 or MGSC 391.

**Cross-listed course:** MGSC 520

**STAT 521 - Applied Stochastic Processes (3 Credits)**

An introduction to stochastic processes, including conditional probability, Markov chains, Poisson processes, and Brownian motion. Incorporates simulation and applications to actuarial science.

**Prerequisites:** C or higher in STAT 511.

**STAT 522 - Financial Mathematics I (3 Credits)**

Probability spaces. Random variables. Mean and variance. Geometric Brownian Motion and stock price dynamics. Interest rates and present value analysis. Pricing via arbitrage arguments. Options pricing and the Black-Scholes formula.

**Prerequisites:** C or better in MATH 241.

**Cross-listed course:** MATH 514

**STAT 523 - Financial Mathematics II (3 Credits)**

Convex sets. Separating Hyperplane Theorem. Fundamental Theorem of Asset Pricing. Risk and expected return. Minimum variance portfolios. Capital Asset Pricing Model. Martingales and options pricing. Optimization models and dynamic programming.

**Prerequisites:** C or better in MATH 514 or STAT 522.

**Cross-listed course:** MATH 515

**STAT 525 - Statistical Quality Control (3 Credits)**

Statistical procedures for process control including CUSUM and Shewhart Control Charts, and lot-acceptance sampling.

**Prerequisites:** STAT 509 or STAT 515 or MGSC 391.

**Cross-listed course:** MGSC 525

**STAT 528 - Environmental Statistics (3 Credits)**

Statistical analysis of environmental data. Review of multiple regression and ANOVA, nonlinear regression models and generalized linear models, analyses for temporally and spatially correlated data, and methods of environmental sampling.

**Prerequisites:** STAT 516.

**STAT 530 - Applied Multivariate Statistics and Data Mining (3 Credits)**

Introduction to fundamentals of multivariate statistics and data mining. Principal components and factor analysis; multidimensional scaling and cluster analysis; MANOVA and discriminant analysis; decision trees; and support vector machines. Use of appropriate software.

**Prerequisites:** C or higher in STAT 515, STAT 205, STAT 509, STAT 512, ECON 436, MGSC 391, PSYC 228, or equivalent.

**STAT 535 - Introduction to Bayesian Data Analysis (3 Credits)**

Principles of Bayesian statistics, including: one- and multi-sample analyses; Bayesian linear models; Monte Carlo approaches; prior elicitation; hypothesis testing and model selection; hierarchical models; selected advanced models; statistical packages such as WinBUGS and R.

**Prerequisites:** C or higher in STAT 512; or CSCE 582 [=STAT 582]; or both STAT 511 and either STAT 509 or STAT 515; or equivalent.

**STAT 540 - Computing in Statistics (3 Credits)**

An introduction to statistical packages such as R and SAS with special focus on data management and computing procedures such as Monte Carlo simulation.

**Prerequisites:** C or higher in STAT 515, STAT 509, STAT 512, or equivalent.

**STAT 541 - Advanced SAS Programming (3 Credits)**

Advanced programming techniques in SAS, including database management, macro language, and efficient programming practices.

**Prerequisites:** STAT 540.

**STAT 582 - Bayesian Networks and Decision Graphs (3 Credits)**

Normative approaches to uncertainty in artificial intelligence. Probabilistic and causal modeling with Bayesian networks and influence diagrams. Applications in decision analysis and support. Algorithms for probability update in graphical models.

**Prerequisites:** CSCE 350, STAT 509, or STAT 515.

**Cross-listed course:** CSCE 582

**STAT 587 - Big Data Analytics (3 Credits)**

Foundational techniques and tools required for data science and big data analytics. Concepts, principles, and techniques applicable to any technology or industry for establishing a baseline that can be enhanced by future study.

**Prerequisites:** STAT 509, STAT 513, or STAT 515.

**Cross-listed course:** CSCE 587

**STAT 588 - Genomic Data Science (3 Credits)**

This course focuses on quantitative knowledge for interdisciplinary applications in genetics as well as hands-on experience in analyzing genetic data. In this course, students will have programming exercises in using analysis tools to conduct genome-wide analysis, annotation, and interpretation of genetic data using R/Bioconductor packages.

**Prerequisites:** C or better in STAT 201 or higher.

**Cross-listed course:** BIOL 588

**STAT 591 - Data Analysis for Teachers (3 Credits)**

Introduction to statistics for elementary, middle, and high school teachers. The fundamentals of data collection, descriptive statistics, probability, and inference with special focus on methods of teaching statistical reasoning. For M.A.T. (excluding mathematics) / M.Ed. / M.T. and nondegree credit only.

**Cross-listed course:** SMED 591

**STAT 599 - Topics in Statistics (1-3 Credits)**

Course content varies and will be announced in the schedule of courses by title.

**STAT 600 - Statistics for Applied Management (3 Credits)**

Introduction to data collection, descriptive statistics, and statistical inference with examples from hospitality, retail, sport, and entertainment management. Focus on selecting, implementing, and interpreting the appropriate statistical methods using software such as Excel and SPSS. Not for minor or degree credit in Mathematics or Statistics. Does not prepare students for STAT 516, STAT 518, STAT 519 or STAT 525.



**STAT 650 - AP Statistics for Teachers (3 Credits)**

A thorough study of the topics covered on the AP Statistics Examination. A non-calculus-based introduction, including descriptive and inferential one- and two-variable statistics, and emphasizing activities illustrating statistical thinking. Current secondary high school teacher certification in mathematics. For I.M.A./M.A.T. (excluding mathematics)/M.Ed./M.T. and nondegree credit only. Restricted to graduate students.

**STAT 700 - Applied Statistics I (3 Credits)**

Introduction to probability and the concepts of estimation and hypothesis testing for use in experimental, social, and professional sciences. One and two-sample analyses, nonparametric tests, contingency tables, sample surveys, simple linear regression, various statistical packages. Not to be used for M.S. or Ph.D. credit in statistics or mathematics. Not to be used for M.S. or Ph.D. credit in statistics or mathematics.

**STAT 701 - Applied Statistics II (3 Credits)**

Continuation of STAT 700. Simple linear regression, correlation, multiple regression, fixed and random effects analysis of variance, analysis of covariance, experimental designs, some multivariate methods, various statistical packages. Not to be used for M.S. or Ph.D. credit in statistics or mathematics.

**Prerequisites:** STAT 700 or the equivalent.

**STAT 702 - Introduction to Statistical Theory I (3 Credits)**

Fundamental theory of statistics and how it applies to industrial problems. Topics include probability, random variables and vectors and their distributions, sampling theory, point and interval estimators, and application to the theory of reliability, regression, process control and quality issues. Not to be used for M.S. or Ph.D. credit in statistics.

**Prerequisites:** MATH 142.

**STAT 703 - Introduction to Statistical Theory II (3 Credits)**

Continuation of STAT 702. Topics include discussion of theoretical properties of point estimators and tests of hypotheses, elements of statistical tests, the Neyman-Pearson Lemma, UMP tests, likelihood ratio and other types of tests, and Bayes procedures in the decision process. Not to be used for M.S. or Ph.D. credit in statistics.

**Prerequisites:** STAT 702.

**STAT 704 - Data Analysis I (3 Credits)**

Primarily for graduate students in statistics and the mathematical sciences. Probability concepts, inferences for normal parameters, regression, correlation, use of computer statistical packages.

**Prerequisite or Corequisite:** STAT 712.

**STAT 705 - Data Analysis II (3 Credits)**

Continuation of STAT 704. Analysis of variance (fixed and random effects), analysis of covariance, experimental design, model building, other applied topics, and use of computer statistical packages.

**Prerequisites:** STAT 704 and STAT 712.

**STAT 706 - Experimental Design (3 Credits)**

Specialized experimental design:  $2n$  and  $3n$  factorials; fractional replication; confounding; incomplete block designs, including split-plot, split-block, and Latin square designs; general principles of design.

**Prerequisites:** STAT 701 or STAT 705.

**STAT 708 - Environmetrics (3 Credits)**

Statistical methods for environmental and ecological sciences, including nonlinear regression, generalized linear models, spatial analyses/kriging, temporal analyses, meta-analysis, quantitative risk assessment.

**Prerequisites:** STAT 701 or STAT 705 or BIOS 757.

**Cross-listed course:** BIOS 808

**STAT 709 - Environmetrics II (3 Credits)**

Theoretical underpinnings of environmetrics. Spatial statistics, temporal and longitudinal analysis, hierarchical modeling, and Bayesian inferences for environmental data.

**Prerequisites:** STAT 708 or BIOS 808; STAT 714.

**Cross-listed course:** BIOS 809

**STAT 712 - Mathematical Statistics I (3 Credits)**

Sample spaces, probability and conditional probability, independence, random variables, expectation, distribution theory, sampling distributions, laws of large numbers and asymptotic theory, order statistics, and estimation.

**Prerequisites:** advanced calculus.

**STAT 713 - Mathematical Statistics II (3 Credits)**

Further development of estimation theory and tests of hypotheses, including an introduction to Bayes estimation, sufficiency, minimum variance principles, uniformly most powerful and likelihood ratio tests, and sequential probability ratio tests.

**Prerequisites:** STAT 712.

**STAT 714 - Linear Statistical Models (3 Credits)**

A study of the general linear statistical model and the linear hypothesis. Topics include the multivariate normal distribution, distributions of quadratic forms, and parameter estimation and hypothesis testing for full-rank models, regression models, and less than full-rank models.

**Prerequisites:** STAT 513 and MATH 544 or STAT 712 or equivalent.

**STAT 715 - Nonlinear Statistical Models (3 Credits)**

Inference for general nonlinear parametric statistical models for univariate and multivariate response; linear and quadratic estimating equations; models for covariance structure; effects of model misspecification and robustness.

**Prerequisites:** STAT 713, STAT 714.

**STAT 716 - Selected Topics in Probability (1-3 Credits)**

Special topics in probability theory and stochastic processes not offered in other courses.

**STAT 718 - Selected Topics in Statistics (1-3 Credits)**

Special topics in statistics not offered in other courses.

**STAT 720 - Times Series Analysis (3 Credits)**

Stochastic properties, identification, estimation, and forecasting methods for stationary and nonstationary time series models.

**Prerequisites:** STAT 704 and STAT 512.

**STAT 721 - Stochastic Processes (3 Credits)**

Theory of stochastic processes, including branching processes, discrete and continuous time Markov chains, renewal theory, point processes, and Brownian motion.

**Prerequisites:** STAT 711 or STAT 712.

**STAT 730 - Multivariate Analysis (3 Credits)**

A survey of the theory and applications of the fundamental techniques for analyzing multivariate data.

**Prerequisites:** STAT 713.

**STAT 740 - Statistical Computing (3 Credits)**

A survey of current algorithms and software for solving fundamental problems of statistical computing with emphasis on computer generation of random variates.

**Prerequisites:** STAT 713 and knowledge of a computer programming language.

**STAT 750 - Response Surface Methodology (3 Credits)**

Methods for fitting (regression) response surfaces and interpreting them subject to random error. Includes designs and industrial process optimization methods.

**Prerequisites:** STAT 701 or STAT 705.

**STAT 761 - Reliability and Life Testing (3 Credits)**

The various statistical and probability models in reliability and life testing and inference procedures for such models, including life distributions, parametric and nonparametric inference methods, hazard and failure rate functions, plotting methods, analysis of mixtures, censoring.

**Prerequisites:** STAT 703 or STAT 713.

**STAT 770 - Categorical Data Analysis (3 Credits)**

Advanced methods for analysis of discrete data. Higher-order contingency tables, log-linear and other generalized linear models. Multivariate methods for matched pairs and longitudinal data.

**Prerequisites:** STAT 704 or BIOS 759.

**Cross-listed course:** BIOS 805

**STAT 771 - Applied Longitudinal Data Analysis (3 Credits)**

Modern methods for the analysis of repeated measures, correlated outcomes, and longitudinal data, including repeated measures ANOVA, generalized linear models, random effects, and generalized estimating equations.

**Prerequisites:** BIOS 757 or BIOS 758 or STAT 701 or STAT 705.

**Cross-listed course:** BIOS 770

**STAT 772 - Binary Dose Response Theory and Methods (3 Credits)**

Threshold, mass action, and target theory; empirical dose response functions; methods in current use among health science researchers.

**Prerequisites:** STAT 512.

**STAT 775 - Generalized Linear Models (3 Credits)**

Statistical theory and applications extending regression and analysis of variance to non-normal data. Encompasses logistic and other binary regressions, log-linear models, and gamma regression models.

**Prerequisites:** STAT 713 or STAT 513, and STAT 705 or BIOS 757.

**Cross-listed course:** BIOS 815

**STAT 777 - Statistics Phylogenetics and Molecular Evolution (3 Credits)**

Theory and applications of phylogenetics; estimation via Markov models, likelihood, distances and parsimony; hypothesis testing of evolutionary trees and parameters; related topics including molecular divergence time inference.

**Prerequisites:** B or better in MATH 241 or STAT 510.

**STAT 778 - Item Response Theory (3 Credits)**

Statistical models for item response theory, Rasch and other models for binary and polytomous data, and applications. Use of statistical software.

**Prerequisites:** EDRM 711 or PSYC 710 or STAT 701 or STAT 704.

**Cross-listed course:** EDRM 828

**STAT 790 - Seminar in Statistical Consulting (1 Credit)**

An exposure to the techniques of statistical consulting through discussion and analysis of actual statistical problems which occur in fields of application.

**Prerequisites:** STAT 700 or equivalent.

**STAT 791 - Practicum in Statistical Consulting (1 Credit)**

Experiences in actual statistical consulting settings; participation and critiques.

**Prerequisites:** STAT 790.

**STAT 798 - Independent Study (1-6 Credits)****STAT 799 - Thesis Preparation (1-9 Credits)**

CL: 2020.

**STAT 810 - Probability Theory I (3 Credits)**

Probability spaces, random variables and distributions, expectations, characteristic functions, laws of large numbers, and the central limit theorem.

**Prerequisites:** STAT 511, STAT 512, or MATH 703.

**Cross-listed course:** MATH 710

**STAT 811 - Probability Theory II (3 Credits)**

More about distributions, limit theorems, Poisson approximations, conditioning, martingales, and random walks.

**Cross-listed course:** MATH 711

**STAT 822 - Advanced Statistical Inference (3 Credits)**

The advanced theory of statistical inference, including the general decision problem; Neyman-Pearson theory of testing hypotheses; the monotone likelihood ratio property; unbiasedness, efficiency, and other small sample properties of estimators; asymptotic properties of estimators, especially maximum likelihood estimators; and general sequential procedures.

**Prerequisites:** STAT 713.

**STAT 823 - Large Sample Theory (3 Credits)**

Modes of convergence, limit theorems, and the asymptotic properties of estimators and tests.

**Prerequisites:** STAT 713.

**STAT 824 - Nonparametric Inference (3 Credits)**

The general theory of nonparametric statistics, including order statistic theory, theory of ranks, U-statistics in nonparametric estimation and testing, linear rank statistics and their application to location and scale problems, goodness-of-fit, and other distribution-free procedures.

**Prerequisites:** STAT 713.

**STAT 890 - Doctoral Seminar (3 Credits)**

For doctoral candidates.

**STAT 898 - Directed Readings and Research (1-12 Credits)**

CL: 2020.

**STAT 899 - Dissertation Preparation (1-12 Credits)**

For doctoral candidates.

## The Graduate School (GRAD)

**GRAD 701 - Graduate Teaching/Instructional Assistant Development (0 Credits)**

An introduction to skills and strategies for graduate teaching and instructional assistants at the University of South Carolina.

**GRAD 720 - Graduate Civic Scholars Seminar I (0 Credits)**

Key principles and approaches to community-engaged research and teaching, and civic scholarship.

**GRAD 721 - Graduate Civic Scholars Seminar II (0 Credits)**

Advanced principles, concepts, and approaches to community-engaged research and teaching, and civic scholarship. For Graduate students admitted to the Civic Scholars Program.

**Prerequisites:** GRAD 720.

**GRAD 722 - Graduate Civic Scholars Seminar III (0 Credits)**

Application of advanced principles and approaches to community-engaged research and civic scholarship. For Graduate students admitted into the Graduate Civic Scholars Program.

**Prerequisites:** GRAD 721.

**GRAD 800 - The Graduate Student as Instructor (0-3 Credits)**

Workshop in teaching skills sponsored by The Graduate School to enhance teaching experiences for graduate students who are involved in formal or informal teaching. Not for degree credit. May be repeated for up to 6 credits.

**GRAD 801 - Graduate Student as Scholar (0-3 Credits)**

Seminar examining scholarly growth and professional productivity. Not for degree credit.

**GRAD 802 - The Graduate Student as Leader (0-3 Credits)**

Seminar examining topics related to professional development. Not for degree credit.

## Theatre (THEA)

**THEA 500 - Selected Topics in Theatre (1 Credit)**

A series of courses, each lasting one-third of a semester. Topics and **Prerequisites:** are announced in the class schedule for each semester.

**THEA 510 - Rendering Techniques for the Theatre (3 Credits)**

Rendering techniques for the communication of concepts and mood in the design process.

**THEA 520 - Playwright's Workshop (3 Credits)**

Principles and practice of playwriting. Writing, adapting, and revising plays. May be repeated with consent of department chair.

**THEA 522 - Drama in Education (3 Credits)**

Comprehensive review of drama strategies, methods and pedagogical practices to be applied to non-drama learning contexts. Practical experience with the necessary skills, philosophies and techniques of drama in education.

**THEA 526 - Children's Theatre (3 Credits)**

Special problems in producing plays for child audiences.

**Prerequisites:** THEA 170 and THEA 253.

**THEA 527 - Applied Theatre Arts (3 Credits)**

Principles and practices of theatre-making within community contexts to address local issues and to provide aesthetic strategies for creative problem solving through theatre.

**THEA 529 - Theatre Management (3 Credits)**

Problems involved in organizing, administering, and promoting the non-professional theatre.

**THEA 530 - Period Styles for Wig and Hair Design (3 Credits)**

Research and execution of period styles for wigs, hair, and facial pieces as related to theatrical and media design.

**Prerequisites:** THEA 230 and THEA 550.

**THEA 531 - Theatre Graphics (3 Credits)**

Specialized graphic techniques used in the preparation of a theatrical production. Practice in the execution and interpretation of working drawings, perspective sketches, color renderings, scale models, etc.

**THEA 540 - Voice and Movement: Practice and Performance (3 Credits)**

A variety of vocal and movement techniques that apply to acting and coaching with special emphasis on the physical and vocal processes in performance.

**THEA 547 - Global/Contextual Issues in Theatre Education Practice and Performance (3 Credits)**

Survey and analysis of current drama teacher practice across international contexts in relationship to global, social and educational change.

**THEA 550 - History of Costume (3 Credits)**

A survey of clothing through the ages with emphasis on the dress of the actor in significant periods of theatrical activity. From ancient times to present day.

**THEA 552 - Stage Costume Pattern Drafting and Drawing (3 Credits)**

The principles of pattern making for costume construction using flat-pattern and draping techniques.

**THEA 553 - Advanced Stagecraft (3 Credits)**

Advanced principles and practices of stagecraft.

**Prerequisites:** THEA 253 or equivalent.

**THEA 554 - Performing Arts Safety (3 Credits)**

Study of health and safety hazards for actors, technicians, and audience members.

**THEA 555 - Scene Painting for the Stage (3 Credits)**

Techniques of scene painting. Application of principles of painting to the stage.

**THEA 556 - Stage Design (3 Credits)**

Survey of the history and principles of scene design. Assignments will involve drawings, watercolor sketches, and scale models.

**THEA 557 - Advanced Scenic Design (3 Credits)**

Advanced procedures and techniques of scenic design.

**Prerequisites:** THEA 556.

**THEA 558 - Draping for the Modern Silhouette (3 Credits)**

Apparel design through basic draping techniques on industry standard dress forms. Analysis of fit and design, problem solving and interaction of fabric characteristics with style features.

**Prerequisites:** B or better in THEA 551.

**THEA 559 - Introductory Methods for K-12 Theatre Certification (3 Credits)**

Developmental approaches to drama instruction in K-12 classroom settings.

**THEA 561 - History of the Theatre I (3 Credits)**

A survey of plays, playwrights, actors, production, and the physical development of theatres from the time of the Greeks to 1660; reading of representative plays required.

**THEA 562 - History of the Theatre II (3 Credits)**

A survey of plays, playwrights, actors, production, and the physical development of theatres from 1660 to the present; reading of representative plays required.

**THEA 563 - History of Modern Theatre (3 Credits)**

History of Western Theatre since the early 20th century. Students will be introduced to major figures, plays, and movements and explore influences from the broader culture on theatrical expression.

**THEA 565 - African American Theatre (3 Credits)**

The major movements, figures, plays, and critical strategies that have marked the development of African American theatre in the 19th, 20th, and 21st centuries.

**Cross-listed course:** AFAM 565, ENGL 565

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy, GLD: Professional and Civic Engagement Leadership Experiences

**THEA 567 - Dramatic Theory I (3 Credits)**

A survey of the major works of dramatic theory and criticism, with emphasis on theories of theatrical performance. from Aristotle through 18th-century neo-classicism.

**THEA 568 - Dramatic Theory II (3 Credits)**

A survey of the major works of dramatic theory and criticism, with emphasis on theories of theatrical performance from the 18th century to the present.

**THEA 569 - Dramaturgy (3 Credits)**

A study of dramatic structure as it relates to theatrical production. Emphasis on script reading and analysis. Production and new-works dramaturgy will be covered.

**THEA 570 - Advanced Acting I (3 Credits)**

Theory and practice in the development of a role and an understanding of the psychology of the audience-actor relationship.

**Prerequisites:** B or better in THEA 240 and THEA 372 and THEA 370.

**THEA 571 - Advanced Acting II (3 Credits)**

Technique of performing play scripts with heightened language and styles other than naturalism/realism. Some examples of genres that may be taught are Classical Greek, Elizabethan, absurdist.

**Prerequisites:** B or better in THEA 240 and THEA 372 and THEA 370.

**THEA 572 - Advanced Makeup for Theatre and Film (3 Credits)**

Makeup design for specific character types, prosthetics and three-dimensional makeup effects. Special attention to the process of sculpting and modeling for makeup prosthetics.

**Prerequisites:** THEA 230.

**THEA 575 - Rehearsal and Performance (3 Credits)**

An intensive laboratory course in theatrical and media performances.

**THEA 576 - Rehearsal and Performance (3 Credits)**

An intensive laboratory course in repertory theatre.

**THEA 577 - Special Topics in Physical Theatre (3 Credits)**

Research and performance training in selected topics related to physical theatre. Course content varies and will be announced in the schedule of classes by title. May be repeated as topics vary.

**THEA 578 - Play Direction I (3 Credits)**

A study of the principles, procedures and practice of stage direction, with the selection, analysis, casting, and rehearsal of a one-act play to be presented in the laboratory theatre.

**Prerequisites:** THEA 270, THEA 280, and 6 hours from 300 level or above.

**THEA 579 - Play Direction II (3 Credits)**

A continuation of THEA 578.

**Prerequisites:** THEA 578.

**THEA 581 - Film as Performance (3 Credits)**

Study and analysis of film production, performance, and aesthetics.

**THEA 582 - Costume Design (3 Credits)**

Theory and practice in the design of theatre costumes.

**THEA 583 - Advanced Practice in Sound Design (3 Credits)**

Advanced study in sound, production and design. Emphasis will be on mounting designs and refining design skills for Theatre, Music, and Media Arts students.

**THEA 585 - Design for Communications Media Production (3 Credits)**

The study and application of techniques in theatrical stagecraft, design, lighting, costuming, and makeup applicable to specialized fields of communication media.

**Prerequisites:** THEA 253, THEA 351.

**THEA 586 - The Articulate Body (3 Credits)**

Theoretical and experimental exploration of the major body systems and developmental movements to bring more articulation to the body and more awareness and physical ease in performance.

**Cross-listed course:** DANC 586

**THEA 587 - Film and Television Acting (3 Credits)**

Theory and practice of film and television acting.

**Prerequisites:** THEA 170.

**THEA 588 - Stage Light Design I (3 Credits)**

The interrelationship of stage lighting and other production elements. Design techniques, equipment, and script analysis. Laboratory work on department productions. Restricted to theatre majors or those having special permission of instructor.

**THEA 589 - Adv. Stage Lighting Des. II (3 Credits)**

Stage lighting equipment and design techniques. Laboratory work on departmental productions.

**THEA 599 - Special Topics in Theatre (3 Credits)**

Reading and research on selected topics. Course content varies and will be announced in the schedule of classes by title. May be repeated once as topics vary.

**THEA 701 - Research Methodology (1 Credit)**

Introduction to research methods, sources, and practices for graduate work in theatre and theatre studies. Concentration on preparing for paper writing and thesis production.

**THEA 710 - Graduate Design Studio (3 Credits)**

The collaborative process between directors and theatrical designers.

**THEA 720 - Dramatic Literature for Youth (3 Credits)**

This course is designed to expand pre-service theatre teachers' exposure to the canon of plays written for young audiences and actors. Students will gain insight into issues surrounding creating plays for young audiences.

**THEA 721 - M.F.A. Practicum, Technical Direction (1-6 Credits)**

A studio workshop for advanced study of theatre arts and crafts.

**Prerequisites:** admission into MFA program.

**THEA 721A - M.F.A. Practicum, Technical Direction (1-6 Credits)**

A studio workshop for advanced study of theatre arts and crafts.

**Prerequisites:** admission into MFA program.

**THEA 721B - M.F.A. Practicum, Management (1-6 Credits)**

A studio workshop for advanced study of theatre arts and crafts.

**Prerequisites:** admission into MFA program.

**THEA 721C - M.F.A. Practicum, Costuming (1-6 Credits)**

A studio workshop for advanced study of theatre arts and crafts.

**Prerequisites:** admission into MFA program.

**THEA 721D - M.F.A. Practicum, Lighting (1-6 Credits)**

A studio workshop for advanced study of theatre arts and crafts.

**Prerequisites:** admission into MFA program.

**THEA 721E - M.F.A. Practicum, Acting (1-6 Credits)**

A studio workshop for advanced study of theatre arts and crafts.

**Prerequisites:** admission into MFA program.

**THEA 721F - M.F.A. Practicum, Scenery and Properties (1-6 Credits)**

A studio workshop for advanced study of theatre arts and crafts.

**Prerequisites:** admission into MFA program.

**THEA 721G - M.F.A. Practicum, Directing (1-6 Credits)**

A studio workshop for advanced study of theatre arts and crafts.

**Prerequisites:** admission into MFA program.

**THEA 730 - Stage Management (3 Credits)**

The aim of this course is to train graduate students in the requirements of stage management production meetings, assisting the director, and running the show. Professional, community, and academic theatre will be covered.

**THEA 731 - Technical Drawing for the Theatre (3 Credits)**

Advanced training in the technique and practice of technical drawing for the theatre.

**THEA 741 - Advanced Voice Lab (1-3 Credits)**

Advanced training in vocal skills needed by actors. (A) Techniques of Berry and Linklater, (B) Technique of Skinner. May be repeated for a total of 15 hours.

**THEA 741A - Advanced Voice Lab (1-3 Credits)**

Advanced training in vocal skills needed by actors. Techniques of Berry and Linklater. Note: May be repeated for a total of 15 hours.

**THEA 741B - Advanced Voice Lab (1-6 Credits)**

Advanced training in vocal skills needed by actors. (A) Techniques of Berry and Linklater, (B) Technique of Skinner. Note: May be repeated for a total of 15 hours.

**THEA 752 - Advanced Costume Construction (3 Credits)**

Advanced procedures and techniques of drafting, draping, pattern making, and wig making. Fabrics, their selection and modification for stage use.

**THEA 754 - Theatrical Rigging and Mechanics (3 Credits)**

Traditional and modern techniques for solving problems from actual theatrical productions.

**Prerequisites:** THEA 553.

**THEA 755 - Advanced Scene Painting for the Stage (3 Credits)**

Advanced techniques in scene painting. Application of principles of painting to the stage.

**THEA 756 - Advanced Costume Design (3 Credits)**

Advanced procedures and techniques of costume design: includes color theory, fabric potentiality, theatrical use of line, mass, and color.

**THEA 757 - Problems in Theatre Practice I (3 Credits)**

Analysis of selected problems in theatrical design, technical execution, or performance techniques. May be repeated once for credit.

**THEA 758 - Problems in Theatre Practice II (3 Credits)**

Analysis of selected problems in theatrical design, technical execution, or performance techniques. May be repeated once for credit.

**THEA 759 - Design Motifs (3 Credits)**

Practical and research projects on identification, isolation, and selection of historic motifs for theatrical purposes.

**THEA 760 - Graduate Text Analysis (3 Credits)**

Analytical skills, a shared vocabulary, and techniques for interpreting the dramatic text for the purposes of staging and performance. For theatrical collaborators.

**THEA 761 - Studies in Theatre History (3 Credits)**

May be repeated as topics vary for a total of 12 hours.

**THEA 765 - Staging in the Non-Traditional Theatre (3 Credits)****THEA 770 - Problems in Acting, Rehearsal, and Performance (3 Credits)****THEA 771 - Problems in Acting, Rehearsal, and Performance (3 Credits)****THEA 773 - Performing in Period Plays I (3 Credits)**

A synthesis of literary, critical, historical, and acting problems of selected period pieces with public performance providing the laboratory for testing alternative solutions. Registration by audition only.

**THEA 774 - Performing in Period Plays II (3 Credits)**

A synthesis of literary, critical, historical, and acting problems of selected period pieces with public performance providing the laboratory for testing alternative solutions. Registration by audition only.

**THEA 775 - Advanced Methods in Drama Education (3 Credits)**

Focus on dispositions and experiences applicable to developing comprehensive theatre arts programs in K-12 schools.

**Prerequisites:** THEA 559.

**THEA 777 - Advanced Movement and Dance (1-3 Credits)**

Advanced training in movement skills needed by actors. May be repeated for a total of 15 hours.

**THEA 778 - Directorial Workshop I (3 Credits)**

Principles and practice of directing for the stage. The advanced study of the director's role in patterning the auditory stimuli for arena and proscenium theatres.

**THEA 779 - Directorial Workshop II (3 Credits)**

A continuation of THEA 778.

**Prerequisites:** THEA 778.

**THEA 782 - Professional Costume Design Practices I (3 Credits)**

Rendering techniques, script study, color, and textile applications, prepared for presentation.

**THEA 783 - Professional Costume Design Practices II (3 Credits)**

Complex design projects, advanced rendering techniques, and translation to stage.

**THEA 784 - Teaching Internship in Theatre I (3 Credits)**

A practical teaching experience in K-12 theatre classrooms consisting of a minimum of seven and a half to ten hours per week.

**THEA 785 - Teaching Internship in Theatre B (9 Credits)**

Practical experiences in observing, teaching lessons, and applying theory and student-centered approaches in order to implement K-12 theatre classroom strategies.

**Prerequisites:** THEA 784 and Acceptance to the Professional Program in Education and Internship as MAT Student.

**THEA 786 - Professional Scene Design Practices I (3 Credits)**

Production-related scene design problems and projects.

**Prerequisites:** THEA 557.

**THEA 787 - Professional Scene Design Practices II (3 Credits)**

Responsibilities of the professional scene designer; analysis of problems and preparation of projects.

**Prerequisites:** THEA 786.

**THEA 788 - Professional Stage Lighting Practices I (3 Credits)**

Large scale projects, such as musical theatre, ballet and multi-set plays, prepared with appropriate professional techniques for presentation and critique.

**Prerequisites:** THEA 589 or equivalent.

**THEA 789 - Professional Stage Lighting Practices II (3 Credits)**

Continuation of THEA 788, to include complex stage lighting problems as well as projects involving related lighting fields.

**Prerequisites:** THEA 788 or equivalent.

**THEA 790 - Professional Theatre Internship (3-9 Credits)**

CL: 2020.

**THEA 796 - Special Projects (1-3 Credits)****THEA 797 - Special Projects (1-3 Credits)****THEA 799 - Thesis Preparation (1-9 Credits)**

## Women & Gender Studies (WGST)

**WGST 515 - Race, Gender, and Graphic Novels (3 Credits)**

Representations of race and gender in comics with a special emphasis on the experiences of African Americans.

**Cross-listed course:** AFAM 515

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

**WGST 525 - The Psychology of the Midlife Woman (3 Credits)**

Biological, social, and psychological aspects of the midlife woman.

**Cross-listed course:** PSYC 525

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

**WGST 535 - Ecofeminism (3 Credits)**

An exploration of the connections between oppression of women and oppression of nature.

**Prerequisites:** 3 hours in philosophy beyond the 100 level.

**Cross-listed course:** PHIL 535

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy, GLD: Professional and Civic Engagement Leadership Experiences

**WGST 541 - Issues in Women's Health (3 Credits)**

An exploration of women's health and health care concerns from multiple perspectives.

**Cross-listed course:** NURS 541

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

**WGST 554 - Women and Crime (3 Credits)**

Impact of gender-based relations on crime and the criminal justice system.

**Cross-listed course:** CRJU 554

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy, GLD: Global Learning, GLD: Professional and Civic Engagement Leadership Experiences

**WGST 555 - Language and Gender (3 Credits)**

Approaches to gender and language emphasizing the social grounding of both; how language reflects sociocultural values and is a tool for constructing different types of social organization.

**Cross-listed course:** ANTH 555, LING 541

**Graduation with Leadership Distinction:** GLD: Diversity and Social Advocacy, GLD: Professional and Civic Engagement Leadership Experiences

**WGST 598 - Special Topics in Women's & Gender Studies (3 Credits)**

Course content varies and will be announced in the schedule of courses by title. May be repeated as content varies by title.

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

**WGST 621 - Maternal and Child Health (3 Credits)**

Public health issues, social and behavioral science, policies, programs, and services related to maternal and child health in the United States and other countries.

**Cross-listed course:** HPEB 621

**Graduation with Leadership Distinction:** GLD: Professional and Civic Engagement Leadership Experiences

**WGST 701 - Feminist Theories and Epistemologies (3 Credits)**

Examination of feminist theories and epistemologies from diverse disciplines and intellectual movements, providing an overview of historical developments in feminist discourse. Emphasis on debates surrounding such concepts as gender, identity, difference, power, and embodiment.

**WGST 704 - Political Theory and Feminism (3 Credits)**

How contemporary feminist theory has responded to and reformulated traditional theories about the role and nature of women.

**Cross-listed course:** POLI 704

**WGST 705 - Race, Class, Gender and Sexuality (3 Credits)**

Historical and contemporary dimensions of social inequality centered in race, social class, gender, and sexuality.

**WGST 706 - Engendering Global Capitalism (3 Credits)**

The origins of global capitalism, the nature of money and debt, the roles of gender, race and class in social formations, and the relationship between production and reproduction.

**Cross-listed course:** ANTH 706

**WGST 708 - Women in American Politics (3 Credits)**

Impact of gender in American politics; elections, representation, rights, social movements, legal institutions, and public policy. Explores class, race, and sexuality issues within gender.

**Cross-listed course:** POLI 708

**WGST 709 - Women Explorers and Travelers (3 Credits)**

Examines in geographical and historical contexts the activities of various women travelers and explorers.

**Cross-listed course:** GEOG 709

**WGST 714 - Nutrition in Women's Health (3 Credits)**

An examination of the particular nutritional needs of women through the life cycle with emphasis on disease prevention and how nutrition is related to a woman's health and wellness.

**WGST 716 - Women's Studies Workshop (1 Credit)**

Selected topics in women's studies that are grounded in community concerns with an emphasis on individual action-research. May be repeated for a total of 2 hours credit.

**WGST 736 - Women, Work and Health: Global Perspectives (3 Credits)**

Intersections of women's work and women's health in diverse social, cultural, economic, geographic, and political contexts.

**WGST 737 - Topics in British Women Writers (3 Credits)**

Selected topics related to works by British women authors from various periods, regions, or genres. May be repeated for credit as topics vary.

**WGST 738 - Topics in American Women Writers (3 Credits)**

Selected topics related to works by American women authors from various periods, regions, or genres. May be repeated for credit as topics vary.

**WGST 750 - Psychology of Women (3 Credits)**

Women's diversity explored through research on personality, stereotypes, status and power, biological aspects, socialization, sexuality, relationships, mothering, work and achievement, violence against women, psychological disorders, and feminist therapies.

**Cross-listed course:** PSYC 750

**WGST 757 - African American Women in Nineteenth and Twentieth Centuries (3 Credits)**

This course will acquaint students with some of the secondary literature in African American women's history from the late nineteenth century through the twentieth century. The course examines the impact of race, gender, and class on the lives of black women and explores the historical relationship between African American women, work, family, community, and politics.

**Cross-listed course:** HIST 757

**WGST 764 - History of American Women (3 Credits)**

Selected research topics on the cultural, social, economic, and political roles and contributions of American women.

**Cross-listed course:** HIST 764

**WGST 767 - Feminist Perspective in Social Work Practice (3 Credits)**

Examines the application of feminist theories, concepts, and principles to social work practice. Assesses women's experiences in society and the impact of social, political, and economic structures. Investigates feminist interventions pertaining to individuals, families, organizations, communities, and the larger social environment.

**WGST 772 - Gender and Culture (3 Credits)**

Different cultures' ideas about gender and use of gender to organize social groups in a wide range of societies, including American subcultures.

**Cross-listed course:** ANTH 772

**WGST 790 - Directed Reading and Research (1-3 Credits)**

Directed research and reading in subjects to be individually assigned.

**WGST 796 - Special Topics in Women's Studies (3 Credits)**

A special topic focusing on an area within women's studies not usually covered in other graduate courses in women's studies.

**WGST 797 - Seminar in Women's Studies (3 Credits)**

A capstone seminar applying women's studies theories and methodologies to professional or discipline-based research projects.

**Prerequisites:** WGST 701 and WGST 702.

# POLICIES AND REGULATIONS

Here you will find helpful information concerning graduate admissions and academic regulations for the University of South Carolina System.

## Graduate Academic Regulations

All graduate students are subject to the academic policies, regulations, and academic standards of both The Graduate School and the department, school and/or college in which enrolled. Graduate programs may have more stringent standards and additional regulations and requirements than that of The Graduate School. Program academic policies, regulations, and standards are available from the graduate director of the program. Contact information for academic programs is available on the website of The Graduate School.

It is the responsibility of all students to be aware of USC academic standards and their own academic record. At the very least, students should check their Record of Academic Work in Self Service Carolina ([https://ssb.onecarolina.sc.edu/BANP/twbkwbis.P\\_GenMenu/?name=homepage](https://ssb.onecarolina.sc.edu/BANP/twbkwbis.P_GenMenu/?name=homepage)) at the conclusion of each semester. The academic record will list any academic or registration issues or probationary status that requires attention by the student.

Graduate students are bound by the academic policies, regulations, standards, and degree requirements found in the Graduate Studies Bulletin (p. 7) in effect at the term of enrollment. With approval of the academic program in which enrolled and the dean of The Graduate School, a student may elect during the course of a program of study to change to standards, regulations, and requirements found in a subsequent Graduate Studies Bulletin. However, the student may not pick and choose from different Bulletins, but must select one Graduate Studies Bulletin during the period of the student's graduate enrollment and conform to all policies, regulations, and degree requirements of the selected Bulletin.

Graduate students in Master's, specialist, and certificate programs have a period of six years, inclusive and continuous, in which to claim the rights of a specific Graduate Studies Bulletin. Doctoral students have a period of 10 years. Any student whose admission lapses for three years loses the right to claim a previous Bulletin and becomes bound to the Bulletin in force when readmitted.

Students are advised that there are no guarantees that a particular course or program of study can be delivered by the University at a time convenient for every student. Unforeseen circumstances may interfere with the scheduling of any given course or degree offering. Students must be prepared for such occurrences even if students experience delays in fulfilling academic goals or require modification of those goals. Academic units and The Graduate School will work closely with students to resolve academic issues.

**Note:** For detailed information on Degree Requirements (p. 10) see that section of the *Graduate Studies Bulletin* which is arranged by certificate or specialist degree requirements, Master's degree requirements, and doctoral degree requirements.

## Academic Personnel Policies

### Graduate Faculty

Faculty members holding the Ph.D. or other terminal degree in a discipline are, upon appointment to a tenure-track position at the

University of South Carolina, Columbia campus, eligible to become members of the Graduate Faculty. Specifically, The Faculty Manual (<http://www.sc.edu/policies/facman/#current>) defines those eligible to be regular members of the graduate faculty on the Columbia campus as the president; provost; dean of The Graduate School; associate deans of The Graduate School; and chairs of academic departments offering degrees conferred by The Graduate School.

Nominations of eligible faculty for such appointments are made by the appropriate academic unit (college, school, or department) to the dean of The Graduate School. Each academic unit must have on file with The Graduate School the process and criteria (<http://gradschool.sc.edu/forms/G-TAN.term.appointment.nomination.GS58.pdf>) used by the unit to nominate and review faculty for appointment as regular Graduate Faculty. Academic units will notify the dean of The Graduate School when nominations to regular Graduate Faculty status are reviewed and either retained or revoked by the academic unit.

Faculty members and scholars not otherwise eligible for regular membership on the graduate faculty may be appointed to term appointments. Term appointments are appropriate for USC faculty in the School of Law and the School of Medicine, emeriti USC professors, clinical faculty, research professors, faculty members at other institutions (including other campuses of the USC system), and others holding an appropriate terminal degree or other credentials. With the approval of the dean of The Graduate School, persons with term appointments to the graduate faculty may serve on, but may not chair, doctoral committees. Nominations to term appoint as graduate faculty are nominated by the chair and dean of the academic unit to the dean of The Graduate School using the Graduate Faculty Term Appointment Form (G-TAN (<http://gradschool.sc.edu/forms/G-TAN.term.appointment.nomination.GS58.pdf>)). The Graduate School maintains a database (<http://gradschool.sc.edu/facstaff/gfd.asp?page=gf&sub=gfd>) of persons with term appointment to graduate faculty status.

## Teaching and Committee Personnel

All faculty teaching graduate level course work, courses numbered 500 - 899, must be either a regular member of the Graduate Faculty or must hold a term appointment as graduate faculty. Accreditation standards state that faculty teaching graduate courses have earned the terminal degree in the field. Occasionally, a person having extensive and/or specific career experience may, with written justification from the program, be approved by the dean of The Graduate School to teach graduate courses.

Membership on doctoral committees (see Doctoral Degree Requirements), excluding the outside member, is limited to regular members of the Graduate Faculty and those who hold special term appointments with approval to serve as a regular member of a doctoral committee. Only a regular member of the Graduate Faculty may serve as chair of a doctoral committee. Service as an outside member of a doctoral committee requires only the approval of the dean of The Graduate School, not a term appointment as graduate faculty.

Membership on a thesis committee (see Master's Degree Requirements (p. 18)) is composed of regular graduate faculty of any rank who hold the doctorate or the discipline's terminal degree and tenured faculty at the rank of full professor who do not hold the terminal degree. Research, clinical, and adjunct faculty at any rank who hold the terminal degree may serve on and chair a thesis committee with approval of the program and the dean of The Graduate School. Instructors and lecturers who do not hold the terminal degree may serve as members of thesis committees



with justification from the program and approval of the dean of The Graduate School.

## Advisor

Every graduate student admitted to a degree program is entitled to an advisor. The academic program graduate director is the default academic advisor for graduate students until another academic advisor is assigned or an advisory committee is formed. Students are urged to consult with an advisor prior to enrollment.

## Graduate Assistant

A graduate assistant (GA) is a student enrolled in The Graduate School and a special category part-time employee of the University paid by the University's Payroll Department. Graduate assistants may serve as teaching assistants (GTA or ITA), research assistants (RA), or perform administrative duties (GA). In addition to receiving a stipend, non-South Carolina residents who are graduate assistants are assessed the in-state rate for tuition purposes. Graduate assistants are expected to devote full-time effort to their studies and assistantship responsibilities and are discouraged from having additional employment on or off campus. For the complete text of USC Policy on Graduate Assistants, see academic policy ACAF 4.00 (<http://www.sc.edu/policies/ppm/acaf400.pdf>).

To be eligible for employment as a graduate assistant, a graduate student must:

1. be enrolled in a degree program and in good standing; and
2. be registered for at least six graduate credits during a major semester.

Programs are encouraged to provide competitive GA stipends and tuition remission to attract the most highly qualified graduate students. The maximum stipend amount cannot exceed the amount paid to a first-year postdoctoral fellow in the academic unit. The minimum stipend is \$1,200 for fall or spring semester for not more than 10 hours per week, and \$600 per summer session for not more than 10 hours per week. Appointments for more hours per week should provide proportionately higher stipend.

Graduate assistants may not work more than 20 hours per week. Rare exceptions to the maximum 20 hour per week work limit may be granted by the dean of The Graduate School when justification from the student's academic program demonstrates the student will derive direct academic benefit from the additional time. Exceptions will not be granted for any reason other than academic benefit.

Graduate Assistants must enroll in 6 to 12 credit hours in the Fall and Spring terms and 1 to 6 hours in the summer terms. Enrollment load exceptions must be approved by The Graduate School.

Accreditation standards require the University to monitor the quality of instruction provided by graduate assistants hired as teaching assistants (ITA or GTA). In order to perform teaching duties, a graduate assistant (GTA) must attend the University-sponsored teaching skills workshop (TA Training) offered by The Graduate School before the start of the Fall term prior to beginning teaching duties. Students need only attend the workshop once and will be placed in the trained GTA database (<http://gradschool.sc.edu/facstaff/trained.asp?page=ta>) when all requirements have been met.

In order to teach as an ITA (instructor of record) the student must attend the teaching skills workshop (TA Training) offered by The Graduate School before the start of each Fall term prior to beginning teaching duties, have at least 18 semester hours of graduate work in the discipline

being taught, and must work under the supervision of a faculty member. Graduate teaching assistants must be monitored and regularly assessed for teaching effectiveness by the supervising faculty member and the academic program. Students need only attend the workshop once and will be placed in the trained ITA database (<http://gradschool.sc.edu/TATRAN/tatrained.asp>) when all requirements have been met.

The South Carolina Legislature (<http://www.scstatehouse.gov/CODE/t59c103.htm>) mandates that all instructors at the University have adequate proficiency in English. International graduate students for whom English is not the primary language can be appointed as teaching assistants only if oral proficiency in English has been evaluated as satisfactory by the faculty of the English Programs for Internationals (<http://www.epi.sc.edu/>) (EPI). Mandatory for all international students appointed as graduate teaching assistants, the evaluation workshop is held prior to the start of each Fall term, three days before the teaching skills workshop (TA Training) offered by The Graduate School that all prospective GTAs and ITAs must complete. Students who demonstrate sufficient English proficiency and complete all other requirements, including the TA Training workshop, will be placed in the GTA/ITA database (<http://gradschool.sc.edu/facstaff/trained.asp?page=ta>).

## Academic Credit and Course Policies

The credit value of each course is usually equal to the number of hours the class meets each week in a major term (fall or spring). Courses are required to have 700 minutes of instructional contact time for each course credit hour.

Courses numbered 700-899 are restricted to graduate students; courses numbered 500-699 are open to upper-level undergraduate and graduate students. Graduate students registered for courses numbered 500-699 must complete graduate level course work and will receive graduate credit. The course syllabus for 500-699 courses must differentiate the workload and rigor of assessment for graduate students and undergraduates.

From time to time graduate students may need to enroll in undergraduate courses. The courses will be posted at the undergraduate level on the USC transcript in the manner that the student registered for the course (credit, audit, pass-fail, etc.) and used in enrollment verification calculations.

Graduate students may not enroll for undergraduate credit in courses numbered 500-699 without the permission of their academic advisor and the dean of The Graduate School.

## Distance Education Courses

Many academic programs offer courses and degree programs via distance education using multiple delivery methods, both in synchronous and asynchronous modes. Courses are offered during fall, spring, and summer terms. All courses delivered through distance education are approved by the appropriate academic authority as suitable for distance delivery, are subject to the same academic policies and regulations, and meet the same University standards of rigor, prerequisites, sequence, etc., that are required in residence course work. Students should consult with the individual academic programs for courses and degrees offered via distance education.

## Course Syllabus

The course syllabus is a summary for a specific course which includes an outline of the content to be covered, the assignments and how

the student's work will be assessed, and the materials needed for it. Graduate course syllabi are required to contain the title and description of the course, course objectives stated as student learning outcomes, recommended and/or required texts or readings, the instructional delivery strategy, the grading scheme to include weights and scale, course requirements/assignments/exams, a topical outline of content to be covered, and an attendance policy. It is also recommended that a disability accommodation statement be included. The instructor is responsible for assuring that the course syllabus contains all elements required by The Graduate School. Students should receive the syllabus prior to or at the first class session.

**Note:** For 500-600 level courses adequate differentiation between the workload and rigor of assessment for graduate and undergraduate students must be explicitly stated in the syllabus. The instructor is responsible for ensuring that all graduate students meet the requirements for graduate credit.

## Attendance

Students are expected to complete all assigned work, to attend all class meetings, and to participate in class. Instructors should notify students, specifically in the course syllabus, of the attendance policy for the course by the first day of class. Students with special attendance requests (such as observation of major religious holidays or participation in University or professional events) should meet with the instructor early in the term to make arrangements.

Students who are auditing a graduate course are expected to conform to the same attendance requirements as students registered for credit, but must attend at least 75 percent of scheduled class meetings to receive audit credit.

A graduate student registered for courses numbered 500-699, or for any undergraduate course for credit, is required to satisfy undergraduate attendance regulations and conform to the "10 percent rule." The Undergraduate Attendance Policy (<https://academicbulletins.sc.edu/undergraduate/policies-regulations/undergraduate-academic-regulations/>) states that absence from more than 10 percent of the scheduled class sessions, whether excused or unexcused, is excessive and the instructor may choose to exact a grade penalty for such absences.

## Prerequisites

Course prerequisites are listed to inform students about the academic background required for satisfactory course completion. The instructor may approve the enrollment of students who have acquired the equivalent knowledge or skills through other courses or experiences. Special permission from the instructor to enroll should be requested prior to registration. Students without the required prerequisites who do not receive prior permission of the instructor to enroll may be dropped from the course and become subject to any applicable financial penalties.

## Course Enrollment Load

### Special Enrollment (Z-status)

The dean of The Graduate School, under certain circumstances, may certify that a student's full time enrollment is less than the normal requirement of 9 hours for graduate students or 6 hours for students serving as graduate assistants. This is known as Z-Status. Students seeking an exception to minimum enrollment requirements (Z-Status) should submit a written request to the dean of The Graduate School with acceptable justification from the student's academic advisor or the

graduate director of the academic program. International students must also submit the approved Exemption from Full-time Enrollment ([http://iss.sc.edu/?option=com\\_docman&task=doc\\_view&gid=550&Itemid=](http://iss.sc.edu/?option=com_docman&task=doc_view&gid=550&Itemid=)) form from International Programs for Students.

For a student whose need for under-enrollment results from an internship, practicum, or field experience required by the graduate program, a justification indicating the term requested and the nature of the experience should be submitted in a written memo to the dean of The Graduate School by the student's academic advisor or the program's graduate director.

Students nearing completion of a doctoral or Master's degree requiring a dissertation or thesis may be granted special enrollment status and certified as half-time or full-time if the student has completed course work required for the degree except thesis (799) or dissertation preparation (899).

Eligibility requires verification of three conditions by the student's academic advisor or program graduate director. The memo requesting Z-status must indicate that:

1. all course work on the program of study has been completed except for thesis (799) or dissertation preparation (899);
2. the student is working on the dissertation or thesis full-time, or if applicable, at least half-time; and
3. the student is not employed outside their graduate assistantship or, if applicable, employed no more than half-time if not on a graduate assistantship.

A Z-status request for under-enrollment privilege must be term-specific and is limited to two terms. Z-status for under-enrollment privilege may be extended beyond two terms with the approval of and justification from the academic unit and with the approval of the dean of The Graduate School.

Students who request exemption from full-time enrollment for financial aid purposes must submit the Special Academic Enrollment Release form (F 6.2) ([https://www.sc.edu/study/colleges\\_schools/graduate\\_school/documents/gs-zs\\_may20.pdf](https://www.sc.edu/study/colleges_schools/graduate_school/documents/gs-zs_may20.pdf)) from the Office of Financial Aid.

### Family Leave (Z-Status)

A graduate student who is the primary child-care provider is eligible to take a one major term of family leave from graduate study the major term during or following the event for the birth of a child or adoption of a child less than 6 years old. The graduate student taking family leave will receive a one year extension of all academic responsibilities, including time to degree, removal of incomplete grades, and course in-date time. During family leave the graduate student will be on special enrollment (Z-status) status and must have health coverage. The student may waive out of University-sponsored health insurance if covered by other insurance or may elect to continue enrollment in the University-sponsored student health insurance plan. The student is responsible for submitting required waivers and/or for contacting the student health insurance contactor directly to enroll in the health insurance program and for paying premiums by the deadline. Students should be aware that a graduate assistantship position or other financial support may not be available upon return from family leave.

**Note:** While this policy does not mandate that programs continue financial support during family leave and/or guarantee student support

or resumption of an assistantship after returning from family leave, programs are strongly encouraged to do so whenever possible.

Students contemplating family leave must advise their academic unit of the intention to take family leave and begin the family leave planning process at least six (6) weeks before the leave start date. Once planning has been completed at the unit level, a written petition for family leave with required supporting documentation and signatures must be submitted as a single packet to the dean of The Graduate School for approval at least three (3) weeks before the start of the leave. The petition must contain evidence of consultation and planning with the student's academic advisor(s) and a memo of support from the academic unit signed by the program's graduate director, a leave timeline, and appropriate documentation. Appropriate documentation for a female student for childbirth includes written certification from the student's health care provider confirming the pregnancy and anticipated due date or the baby's birth certificate and for a male student either certification confirming the anticipated due date or the baby's birth certificate. For adoption of a child less than 6 years old, a written certification of adoption from a certifying individual or agency specifying the date of adoption and the age of the child is the appropriate documentation.

This planning process with the academic unit should also be used to determine if any additional length of time beyond the one year extension of academic responsibilities period will be needed for the student opting for family leave to complete degree requirements. While a one year extension of academic responsibilities will be granted to any student on approved family leave, academic units often have specific timelines for exams, fieldwork, course sequences, etc., which may necessitate extension beyond the one year period. Graduate students with such circumstances may petition The Graduate School for extension of leave time. Academic unit requirements or limitations are a valid justification to petition for the extension. Petitions for extension of time beyond the one year family leave should be supported by the student's academic unit and will be reviewed by The Graduate School on an individual basis.

**Note:** Medical complications or other extenuating circumstances are not included in this policy. Such situations are more appropriately covered by the University's current policies regarding course incompletes and withdrawal and/or leave of absence due to extenuating circumstances.

The family leave policy is also intended to allow an international student to be coded as a "special enrollment" student and not affect current visa status. However, immigration regulations might dictate a different definition of enrollment than that defined as "special enrollment" for this policy. The Office of International Student Services is the authority on campus for interpreting current enrollment regulations for international students, so international students contemplating family leave must consult the Office of International Student Services to address proactively any individual or unique visa issues and/or to consider how the latest applicable regulations would affect eligibility for family leave. International students applying for family leave must discuss the intended leave period with the Office of International Student Services at the beginning of the six (6) week planning period and **must** include a signed memo from the Office of International Student Services detailing immigration status and any consequences of taking family leave in the written petition packet submitted to the student's program graduate director for signature and to the dean of The Graduate School for approval.

Once the family leave has been approved, a memo will be placed by The Graduate School in the student's academic file indicating the leave dates and the extension date for academic responsibilities. It is the student's

responsibility to communicate with their academic unit while on leave. It is also the student's responsibility to work with faculty and program administrators on arrangements for course completion, achievement of degree requirements, and for continuation of research and/or teaching activities before and following the period of the leave.

## Enrollment in Courses Outside Major

Students wishing to enroll in courses outside the area to which they have been admitted should do so only with the permission of their academic advisor and should consult the department offering the course regarding eligibility and prerequisites. An individual who has been declined admission or had their admission cancelled to a program may not continue to enroll in or audit courses in that area without special permission of that program even if the student has subsequently been admitted to another program. Programs have the right to limit enrollment in program courses to students in the program and/or to decline admission to program coursework to a student that has registration eligibility through another program. Issues related to course enrollment or registration eligibility may be referred to the dean of The Graduate School.

## Enrollment in Courses for Audit

A student must be eligible to register as a graduate student and go through the regular registration process to be eligible to audit a graduate-level course. Some departments do not permit auditing at the graduate level, and if space in the class is limited, degree-seeking students always are given priority over students who are auditing. Students wishing to audit graduate courses are advised to obtain permission from the appropriate department chair or graduate director. No record of audit shall appear on a transcript unless a student attends 75 percent of the classes. A course taken for audit cannot be used on a program of study to satisfy degree requirements unless it has been retaken for credit.

Students who have registered for a course on an audit basis and who wish to change their registration to take the course for credit (or who wish to change from credit to audit) must do so no later than the last day to change course schedule or drop without a grade of W being recorded, as published in the Academic Calendar (<http://registrar.sc.edu/html/calendar/5YrCalendar3.stm>).

**Note:** No credit may be earned for an audited course by examination.

## Independent Study

The purpose of an independent study is to allow the student to pursue an area of academic interest not adequately covered by the regular course structure. Therefore, an independent study course cannot be used to fulfill a core requirement.

Prior to enrolling in a graduate independent study course, a student must complete a graduate Independent Study Contract form (G-ISC (<http://gradschool.sc.edu/DocLibrary/documents/G-ISC.independent.study.contract.GS50.pdf>)). The approval of the instructor, advisor, and the graduate director of the program is required. Students send an approved copy of the G-ISC to the Office of the University Registrar before registering for the course.

**Note:** Not more than 6 hours of independent study may be used on a Master's program of study and no more than 9 hours of independent study may be used on a doctoral program of study.

## Transfer of Course Credit

Course work not part of a completed certificate program or graduate degree from USC or another institution may be transferred for credit toward a Certificate of Graduate Study, a master's or doctoral degree. Course work transferred from another institution must be relevant to the program and have course content and a level of instruction equivalent to that offered by the University's own graduate programs. Approval for acceptance of transfer credit to a student's program of study must be approved and justified by the student's academic program and submitted to the dean of the Graduate School for final approval on the Request for Transfer of Academic Credit (G-RTC (<http://gradschool.sc.edu/DocLibrary/documents/G-RTC.pdf>)) form.

No more than 12 semester hours of graduate credit may be transferred into a master's program that requires 30-36 hours; no more than 15 semester hours of graduate credit may be transferred into a master's program that requires 37-45 hours; and no more than 18 semester hours of graduate credit may be transferred into a master's program that requires 46 or more semester hours. Only credits with grades of B or better (equivalent to a 3.0 on a 4.0 scale) may be transferred from another institution into any graduate degree program. Course work transferred for credit toward a Master's degree, Graduate Certificate or Specialist Program must be from an accredited institution and must be no more than six years old at the time of graduation and coursework transferred into a doctoral degree program must be no more than ten years old at the time of graduation.

## Revalidation of Out-of-Date Courses

Students enrolled in a doctoral program at the University of South Carolina may, with permission of the academic program, request revalidation of USC graduate courses over 10 years old for inclusion on the doctoral program of study. Each academic unit will determine whether a course is appropriate for revalidation. All instructions for revalidation (<http://gradschool.sc.edu/forms/pre.pdf>) must be followed and the Permit for Revalidation Examination (PRE (<http://gradschool.sc.edu/forms/pre.pdf>)) form must be completed and submitted to the dean of The Graduate School for approval prior to revalidation. Proof of payment of revalidation fees must be submitted with the Permit for Revalidation Examination form.

**Note:** Coursework taken at other institutions may not be revalidated.

## Correspondence Course Credit

The University neither offers correspondence courses for graduate credit nor accepts correspondence work as applicable toward any graduate degree.

## Credit by Examination

No graduate credit is offered by examination only.

## Retroactive Graduate Credit

The Graduate School does not retroactively award graduate credit for graduate-level (course number 500 and above) USC courses previously taken for undergraduate, continuing education, or audit credit. The academic policy of The Graduate School also stipulates that no graduate-level USC course taken for undergraduate or continuing education credit or as an audit may be repeated for graduate credit at a later date.

## Dropping a Course

A graduate student may drop a course using Self Service Carolina.

Beginning with the Fall 2013 term, graduate students will visit Self Service Carolina to drop a course. Courses dropped before the drop/add date found on Academic Calendar (<http://registrar.sc.edu/html/calendar/5YrCalendar3.stm>)(usually within the first week of class) can be dropped without academic or financial penalty.

Courses dropped during the second through the sixth week of a regular semester (see date on the Academic Calendar) are recorded with an academic nonpenalty grade of **W**. After the first six weeks of the semester, any courses dropped will appear on the permanent record with a grade of **WF**. A **WF** is treated as an **F** in the evaluation of the student's eligibility to continue and is computed into the student's graduate cumulative grade point average. Graduate students who stop attending a class without officially dropping it remain on the final grade roll and must be assigned a grade by the professor of record. A grade of **F** is appropriate, unless a higher grade has been earned by partial submission of the required course work, and that assigned grade is included in all calculations and totals. In summer sessions and other shortened terms, the period for withdrawal with a grade of **W** will be 43 percent of the total number of class days (see date on the Academic Calendar (<http://registrar.sc.edu/html/calendar/5YrCalendar3.stm>)). A course cannot be dropped after the last day of classes specified for the session in which the course is scheduled.

Students are responsible for consulting the academic calendar for each term in which they are enrolled for the applicable dates. Students should also consult their academic advisor and graduate director for advisement before withdrawing from course work.

## Dropping a Course for Extenuating Circumstances

A student who wishes to drop a course for medical reasons or other acceptable cause after the session penalty date specified on the Academic Calendar for that term (last day to receive a **W**), may petition for assignment of **W** by submitting a Request for Assignment of **W** for Extenuating Circumstances form (AS-122A) available from the Office of the University Registrar (<http://registrar.sc.edu/html/forms/>) with the appropriate documentation of circumstances, (e.g., a letter from a physician or health care provider). The petition requires the approval of the student's graduate director, the instructor of each course, and the dean of The Graduate School. A request for partial reduction (rather than complete) withdrawal for extenuating circumstances must include evidence (i.e., a written statement from a physician, counselor, or other qualified professional; or other documentation of extenuating circumstances) that a reduction in, rather than complete withdrawal from, student course work is appropriate. Students must be aware that liability for repayment of student loans and other financial obligations may apply.

## Withdrawal from All Courses

A student who wishes to withdraw from all courses should consult their academic advisor and graduate director for advisement before withdrawing from course work. The date of withdrawal affects the grades assigned (**W** or **WF**), as do valid, supported claims of extenuating circumstances (see previous section). If applicable, Form AS-122A available from the Office of the University Registrar (<http://registrar.sc.edu/html/forms/>) must be approved by the graduate director and a student's instructors prior to withdrawal. Grades assigned to students who withdraw from all courses are determined in the manner

described in the previous section. Students who withdraw should be aware of the ramifications of that action with respect to grades assigned, program status, liability for repayment of student loans, and financial obligations to the University.

## Financial Obligations to the University

Any student withdrawing from the University within the scheduled refund period can expect to receive a refund in approximately four to six weeks. If, at the time of withdrawal, the student has any financial obligations to the University, these amounts will be deducted from any refund due. Refunds for students who received and used financial aid to pay academic fees may be applied toward repayment of financial aid.

Students who have received long-term loans through the University must contact the Student Loan Accounting Office for an exit interview. Failure to participate in this exit interview may result in a hold being placed on transcripts.

## Grading Policies

The letter grades **A, B, C, D,** and **F** are employed to designate excellent, good, fair, poor, and failing work, respectively. The grades **B+, C+,** and **D+** also may be recorded. Courses graded **D+** or lower cannot be applied to graduate degree programs. The letter grades **S** (satisfactory) and **U** (unsatisfactory) are assigned only in courses that have been approved for Pass-Fail grading or in a standard graded course where the student, with the approval of the dean of The Graduate School, has elected an individual Pass-Fail Option. Courses completed with an **S** may be counted in total credits earned. Grades of **T** (satisfactory progress) or **U** (unsatisfactory progress) are given for thesis (799) and dissertation (899) preparation. Grades of **T** in thesis (799) and dissertation (899) preparation are not computed in the cumulative graduate grade point average. Graduate-level courses completed with the grade of **U** are calculated as an **F** in the cumulative graduate grade point average. In certain circumstances, grades of **I** (incomplete) or **NR** (no record) may be assigned by the instructor.

**Note:** Retaking a graduate course does not delete the original grade.

The grade of **I** (incomplete) is assigned at the discretion of the instructor when, in the instructor's judgment, a student is prevented from completing a portion of the assigned work in a course because of an illness, accident, verified disability, family emergency, or some other unforeseen circumstance. The student should notify the instructor without delay and request an extension of time to complete the course work, but the request for a grade of incomplete must be made to the instructor before the end of the term. The instructor will determine, according to the nature of the circumstance and the uncompleted requirements, how much additional time, up to 12 months, will be allowed for completing the work before a permanent grade is assigned. The justification for the incomplete grade, conditions for make-up, a deadline for completion, and a back-up grade if the course work is not completed by the deadline must be included on the form. Re-enrolling in a course will not make up an incomplete grade. A grade of **I** is not computed in the calculation of a student's cumulative grade point average until the make-up grade is posted.

There is no automatic time period for completion of the work for which a grade of incomplete is given. The instructor should give the student a reasonable deadline, up to one year after the scheduled end of the course, to complete the work. After 12 months an **I** (incomplete) grade that has not been replaced with a letter grade is changed permanently to a grade of **F** or to the backup grade indicated by the faculty member on the

Assignment of Incomplete Grade form. In the rare instance the instructor believes there is justification for an extension beyond the 12 month limit, a request for extension of incomplete time should be submitted to the dean of The Graduate School before the expiration of the 12 month period on the Extension of Incomplete Time Period Authorization (GS-47 (<http://gradschool.sc.edu/forms/eia.pdf>)) form for approval. The Graduate School does not approve the make-up of **I** grades in courses which are already out-of-date for use on a student's program of study or extensions of time without sufficient justification and/or supporting documentation.

Graduate students cannot register for additional coursework if there are 3 or more temporary grades of incomplete (**I**) that have not yet been replaced with a permanent grade on their academic record. Student enrolled in graduate study may not graduate with a temporary grade of **I** on their record, even if that course is not listed on the Program of Study.

**NR** (no record) is a temporary mark on the transcript assigned by the Office of the University Registrar if a grade has not been submitted by the instructor at the proper time or if any grade not approved for a particular course has been submitted. As a temporary mark on the transcript the **NR** must be replaced by a grade. If the **NR** is not resolved or replaced by the instructor with a valid end-of-term grade before the end of the major (Fall or Spring) term following the term for which the grade of **NR** was recorded, a grade of **F** will be assigned.

## Pass-Fail Option

Unless there is an academic program exception explicitly approved by the Graduate Council, a graduate student may elect Pass-Fail grading in a course only if the content is outside the student's major area of study and is not required on the program of study. This option permits enrichment of the student's learning experience and a grade of either **S** (satisfactory) or **U** (unsatisfactory) will be awarded. Courses completed with a satisfactory grade may be counted toward total credit hours earned. A grade of **U** received under the individual Pass-Fail Option will be calculated into the cumulative grade point average as a grade of **F**. Students must have the approval of their academic program advisor and the dean of The Graduate School prior to registration.

## Academic Standard for Grade Point Average

The cumulative grade point average (GPA) is defined as the GPA of all graduate credit courses recorded on the official USC transcript. In-date courses are ten or fewer years old for doctoral students and six or less years old for Master's, specialist, graduate certificate, and nondegree students. Revalidated courses are also included in the cumulative GPA calculation. Grades earned for graduate credits transferred from other colleges or universities are not included in the cumulative GPA.

## Academic Standard for Progression

Graduate courses may be passed for degree credit with a grade as low as **C**, but a degree-seeking student must maintain at least a **B** (3.00 on a 4.00 scale) cumulative grade point average. Some programs stipulate that no grade below **B** can be applied to a core course. Programs may cancel a student's registration privilege if the student fails to make adequate progress toward degree as defined by the program's academic policies. A student's registration privileges may also be cancelled for failure to meet academic standards as defined by The Graduate School.

## Academic Standard for Graduation

At the time of graduation, the student's graduate cumulative grade point average (GPA) must be at least 3.00 (B) on a 4.00 scale. Additionally, the student's average on all grades recorded on the program of study for courses numbered 700 or above must be at least 3.00 and all courses listed on the program of study must be at least 3.00.

## Academic Suspension Policy

Graduate degree-seeking students whose cumulative grade point average (GPA) drops below 3.00 (B) will be placed on academic probation by The Graduate School and allowed one calendar year in which to raise the cumulative GPA to at least 3.00. In the case of conversion of grades of incomplete that cause a cumulative GPA to drop below 3.00, a degree-seeking student will be placed on academic probation at the end of the semester in which the grade is posted. Students whose cumulative GPA falls below the required minimum of 3.00 by receiving a grade for a course in which they received a grade of Incomplete will, instead of a one-year probationary period, be granted only one major semester of probation dating from the semester in which the Incomplete conversion grade is received by the registrar in which to raise their cumulative GPA to 3.00 or above. Students who do not reach a cumulative 3.00 grade point average during the probationary period will be suspended from graduate study and will not be permitted to enroll for further graduate course work as a degree or a nondegree student.

Colleges, schools, and/or departments may have a more stringent policy than The Graduate School's academic suspension policy. Students are also responsible for knowing program policies.

## Reinstatement After Suspension

The Graduate School's Policy on Academic Probation and Suspension stipulates that when a degree-seeking graduate student's cumulative graduate grade point average (GPA) falls below 3.0 the student is placed on academic probation. The student has one calendar year, or in the case of an Incomplete conversion one major term, from the academic probation term to increase his/her cumulative graduate GPA to at least 3.0. Failing to meet this condition will result in academic suspension from all graduate study at the University of South Carolina.

After suspension, reinstatement to graduate study or nondegree enrollment status cannot be granted for one calendar year following the term of suspension. To appeal for reinstatement the student must submit through the student's academic program a completed petition packet to the dean of The Graduate School following the guidelines below. Appeals may be initiated at any point following suspension, but petition packets must be received by The Graduate School at least 45 days before the start of the term for which the student wishes to be readmitted.

A student must contact the academic program and ask for support for reinstatement to graduate study. The department must recommend reinstatement for an appeal to go forward. Only packets containing all of the required letters, documentation, and recommendations and forwarded to the dean of

The Graduate School from the graduate director of the academic program will be considered. Appeal packets must contain all of the following:

1. A letter from the student that explains the factors that resulted in his/her academic suspension.
2. An explicit plan written by the student and endorsed by the graduate director showing how the student will overcome the extenuating

circumstances noted in the student's letter of appeal (e.g., medical treatment, change of major, adjustment of work demands, etc.) and raise his/her GPA. Supporting documentation of extenuating circumstances must be included.

3. A feasible projection of what grades will be required in what courses and which semesters to yield the requisite overall cumulative GPA of 3.0.
4. A letter from the appropriate department chair or graduate director to confirm that all materials for this appeal are in order and that the appeal is supported by faculty of the academic program.

Complete packets may be delivered in person, by U.S. mail, or by campus mail to:

Dean of The Graduate School  
The Graduate School  
901 Sumter Street  
Byrnes Building, Suite302  
Columbia, SC 29208

**Note:** Students who have not been enrolled for three or more years must reapply to The Graduate School.

## Academic Forgiveness Policy

The Academic Forgiveness Policy is intended to assist former University of South Carolina graduate students whose cumulative USC graduate grade point average (GPA) is below 3.00 to reenroll in graduate study without having to overcome the burden of previous unsatisfactory academic performance. Any former USC graduate student who has not been enrolled in graduate study for at least 24 consecutive months is eligible to apply for academic forgiveness. Academic forgiveness sets aside all former grades earned as a USC graduate student so that previous grades will not be calculated into the student's cumulative graduate GPA. Once academic forgiveness is granted courses taken during and prior to the term elected cannot be revalidated or count toward the completion of a graduate degree.

A student who seeks academic forgiveness must submit a written petition for academic forgiveness to the dean of The Graduate School. That petition must include:

1. A letter from the student that explains the factors that resulted in the student's previous academic record.
2. An explicit plan written by the student and endorsed by the graduate director showing how the student will address those factors in future graduate study if academic forgiveness is granted.
3. A letter from the appropriate department chair or graduate director in support of granting academic forgiveness and recommending reinstatement.
4. Notice of the specific term for which courses taken during and prior to that term are to be segmented on the student's academic record as forgiven.

Each appeal for academic forgiveness will be considered on a case-by-case basis. If granted, the registrar's office will upon notification from the dean of The Graduate School segment the student's academic record showing all courses and grades to be included in academic forgiveness and will recalculate the USC graduate cumulative GPA accordingly. The courses and grades will remain a part of the student's academic record. A notation will appear on the transcript indicating the student was approved for academic forgiveness.

## Academic Exception Petitions

The academic policies and regulations of The Graduate School and the graduate programs generally serve as purposeful guidelines and standards for graduate students as they pursue graduate degrees. Occasionally, individual students may feel there are grounds to seek an exception from the uniform application of an academic regulation, requirement, or policy and may file a petition for exception.

The Graduate School accepts petitions for exception to an academic regulation, requirement, or policy only with sufficient justification and/or documentation and only if the exception is endorsed by the student's academic advisor and the program's graduate director. A complete petition including the signature of the graduate director and any necessary supporting documentation is sent by the academic program graduate director to the dean of The Graduate School. Once received a petition is reviewed by the dean, who may act on the request or refer the matter to the Graduate Council for review and recommendation.

## Appeal of Academic Decisions

Appeals seeking to reverse or modify decisions made at a lower level of authority should be filed according to the established procedures with the student's academic unit. Students should file appeals with the dean of The Graduate School only after the internal processes for appeals and grievances within the academic program, school and/or college have been exhausted.

The Graduate School will accept appeals on academic matters only. Disagreement with a grade assigned in a course is not a basis for appeal to The Graduate School, but should be directed to the course instructor.

Appeals to the dean of The Graduate School must be submitted in writing and must include the name, student number, the signature of the appellant, and a full description of the circumstances of the appeal. Student appeals for reversal of departmental decisions are only accepted for consideration when questions such as inequitable application of regulations, bias, conflict with regulations, or extenuating circumstances are cited as grounds for appeal.

The dean of The Graduate School will attempt to resolve appeals filed with The Graduate School and will refer unresolved issues to the Graduate Council, whose decision will be the final action taken within The Graduate School. Any further appeal must be directed to the Office of the Provost. Graduate student appeals of disciplinary decisions reached under the Rule of Academic Responsibility procedures of the University must be made to the University Committee on Academic Responsibility.

## Academic Documents and Student Records

Students are responsible for checking the accuracy of their academic records. Students may check their academic record in Self Service Carolina.

University policy ACAF 3.03 (<http://www.sc.edu/policies/ppm/acaf303.html>) states that The University of South Carolina complies with The Family Educational Rights and Privacy Act (FERPA), which affords students certain rights with respect to their education records.

1. The right to inspect and review their records.
2. The right to request an amendment of records that the student believes are inaccurate or misleading.

3. The right to consent to disclosures of personally identifiable information contained in the student's education records, except to the extent that FERPA authorizes disclosure without consent (outlined in the Annual Notification of Student Rights under FERPA.)
4. The right to file a complaint with the U.S. Department of Education concerning alleged failures by the University of South Carolina to comply with the requirements of FERPA.

The University of South Carolina has designated the following items as directory information: a student's name, electronic mail address, local and permanent mailing addresses and telephone numbers, semesters of attendance, enrollment status (full- or part-time), date of admission, date of graduation, school, major and minor fields of study, whether or not currently enrolled, classification (freshman, etc.), type of degree being pursued, expected graduation date, degrees, honors, and awards received (including scholarships and fellowships), weight and height of members of athletic teams, and whether the student has participated in officially recognized activities and sports sponsored by the University. The University may disclose any of these items without prior written consent, unless the student has submitted a written request to the Office of the University Registrar (<http://registrar.sc.edu/>) not to release directory information pertaining to the student. The student must submit the written request no later than May 31 in order to prevent disclosure in the student directory.

The University of South Carolina reserves the right to refuse to permit a student to inspect the following records:

1. Parents' financial records.
2. Confidential letters of recommendation requested by the student and filed before November 19, 1974, or letters written after that date for which the student has waived access. Students may request the names of those who have submitted confidential recommendations.
3. Documents revealing non-directory information about other students (such as class rolls).

The University of South Carolina may refuse to release transcripts and verification of records for students who have a financial obligation to the University (ACAF 3.09 (<http://www.sc.edu/policies/ppm/acaf309.html>)). Students should contact the Office of the University Registrar (<http://registrar.sc.edu/>) for additional information about official records and/or filing appeals for correction of University records.

## Copy of Student Graduate Admission File

Graduate students who want copies of documents in admission files to which they have not waived access, such as letters of recommendation, should complete the Document Copy Request form (DCR (<http://gradschool.sc.edu/DocLibrary/documents/dcr.pdf>)) available on The Graduate School's website. A fee of \$10 is charged for researching and copying releasable information from a student's file.

**Note:** Test scores and transcripts obtained through this process are considered "unofficial" documents.

## Transcripts

A transcript of a student's record carries the following information: current status; a detailed statement of the scholastic record showing courses taken with semester hours carried, semester hours earned, grades, grade points, grade point average, and system of grading; a permanent record of all failures, Incomplete grades, and penalties (such as suspension or probation); cumulative USC grade totals; and references to other college or universities attended, dates attended, and the total

transfer credits accepted by the University of South Carolina. Copies of transcripts are available from the Office of the University Registrar and must be requested in writing by memo or form. Each transcript request must include a written statement of consent to release the transcript, full name or names used, student number, current mailing address, dates of attendance, location of attendance, and date of birth to assure proper identification of the record requested.

Any student who needs a transcript or a certified copy of the end-of-semester grade report should complete a transcript request (AS-25 ([http://registrar.sc.edu/pdf/trf\\_3.pdf](http://registrar.sc.edu/pdf/trf_3.pdf))) form or send a signed and dated letter containing all pertinent identifying information as listed above to the Office of the University Registrar. (<http://registrar.sc.edu/>) Official transcripts may also be requested online through Self Service Carolina. The nonrefundable transcript processing fee is \$12 unless the transcript is for use with a current application to The Graduate School.

With the exception of copies made for internal use, (including the State Department of Education) no copy of a student's permanent record (transcript) will be released to anyone without the student's written consent. No transcript will be issued to a student who is indebted to the University. No partial transcript will be issued. Students may print unofficial copies of their academic record for personal use from Self Service Carolina.

## Other Graduate Credit Courses and Special Undergraduate Programs

### Graduate School (GRAD) Courses

Course	Title	Credits
GRAD 800	The Graduate Student as Instructor	3
GRAD 801	Graduate Student as Scholar	3

### International (INTL) Courses / Study Abroad

Study abroad can provide students with the opportunity to add an international dimension to their education. Contact the Study Abroad Office (<http://www.studyabroad.sc.edu/>) for information.

- INTL 501
- INTL 502
- INTL 503

### Special Programs

For information on contract courses and degree programs offered by the University contact the Office of Educational Outreach (OEO (<http://www.ed.sc.edu/o eo/>)) administered by the College of Education.

### Accelerated Bachelor's/Graduate Study Plan (G-BGPA)

Admission to an Accelerated Bachelor's/Master's Plan allows the student to apply graduate credits to a baccalaureate program. This form is to be completed by the student in consultation with his/her academic advisor and the Graduate Director of the proposed master's program.

Students must have completed at least 90 hours of undergraduate coursework and have a minimum GPA of 3.40 overall as well as in their undergraduate major.

Endorsements should be obtained in the order indicated on the form.

A Bachelor's/Master's Degree Accelerated Plan Course Work Authorization form (G-BMCA) must be processed for all graduate courses

at the time of registration, in order for the Registrar's Office to properly enroll the student.

Application of graduate credits earned under the Bachelor's/Master's Degree Accelerated Plan to the student's baccalaureate program should be noted by the student's college dean at the time the student's record is cleared for award of the baccalaureate.

Admission to a the Bachelor's/Master's Degree Accelerated Plan does not require application for nor admission to a master's program, nor does it guarantee admission to the proposed master's program.

The student who wishes to be considered for admission to a Master's program must also submit a completed application (<http://www.gradschool.sc.edu/futurestudents/OnlineApplication.html>) and any additional credentials (GRE scores, recommendations, etc.) which are required by that Master's program.

Undergraduate students participating in Senior Privilege or the Accelerated Bachelor's/Master's Plan may opt for only one program. If a student has been approved to participate in one of these programs, he or she is prohibited from applying for, or taking courses under, the other.

### Senior Privilege Coursework

Senior Privilege permits undergraduate seniors in their final semester (who need less than a normal course load to complete their baccalaureate requirements) to earn up to six hours of graduate credit.

Overload enrollment that includes one or more courses under senior privilege is not allowed.

Courses for graduate credit under senior privilege cannot be used toward undergraduate degree requirements.

Undergraduate students must be a senior, have at least a 3.00 overall GPA, and have approval of their undergraduate advisor, the Graduate Director of the relevant program, the dean of The Graduate School, and the instructor for each course to be taken.

Endorsements should be obtained in the order indicated on the form.

Grades earned in senior privilege classes do not affect undergraduate or graduate GPA; the credit is added to the undergraduate record but not the graduate record. A comment is posted to the graduate record.

Undergraduate students participating in Senior Privilege or the Accelerated Bachelor's/Graduate Plan may opt for only one program. If a student has been approved to participate in one of these programs, he or she is prohibited from applying for, or taking courses under, the other.

This form must be processed at the time of registration to permit the Registrar's Office to properly enroll the student for graduate credit.

This form may not be used retroactively for courses already taken or courses in which the student is currently enrolled. That is, the form must be endorsed and on file before the first day of the relevant semester.

Undergraduate students interested in Senior Privilege enrollment or the Accelerated Bachelor's/Graduate program (<http://gradschool.sc.edu/forms/G-BGCA.pdf>) should consult their academic advisor.



## Graduate Admissions

### Admission Standards

For admission to The Graduate School, a baccalaureate or higher degree from a college or university accredited by a regional accrediting agency is required. Applicants' academic records should demonstrate adequate preparation in the field in which graduate work is to be undertaken. Standardized test scores, letters of recommendation, and other materials specified by the individual academic program may also be required. The dean of The Graduate School admits applicants on the recommendation of the department or college concerned after an appraisal of the credentials submitted.

Applicants whose educational preparation is equivalent to that represented by a baccalaureate degree and who have sufficient maturity to undertake advanced study may be admitted after submitting their credentials, including appropriate test scores, for review by the dean of The Graduate School.

**Note:** Individual programs may have special application requirements in addition to those of The Graduate School. These requirements range from personal interviews to statements of purpose and employment histories to auditions and portfolios. Applicants should consult the appropriate college or department to learn what these requirements are. However, all materials must be submitted directly to The Graduate School to ensure that they are included in the applicant's file.

### Categories of Admission

The Graduate School provides prospective students with two categories of admission: *Degree-seeking Admission* and *Nondegree-Seeking Admission*.

For information about these categories of admission, visit the following links:

- Degree-Seeking Admission (<https://academicbulletins.sc.edu/graduate/policies-regulations/graduate-admissions/degree-seeking-admissions/>) (including transfer admission)
- Nondegree-Seeking Admission (<https://academicbulletins.sc.edu/graduate/policies-regulations/graduate-admissions/nondegree-seeking-admissions/>)

## University Registration Requirements

### Immunization Requirements

The University of South Carolina requires all students, regardless of birthdate, to contact the Immunization Office at 803-777-9511. Students born after December 31, 1956 need to be immunized against, or provide proof of immunity to, measles (rubeola) and German measles (rubella). Proof of immunity and/or immunization requires documentation of one of the following:

- two measles and one German measles (MR or MMR) shot after 1967 (not before first birthday)
- positive serum titers (blood antibodies) to measles and German measles
- physician-diagnosed measles illness and either shots or positive serum titer for German measles. (A history of German measles illness does not meet requirements.)

### Mandatory Health Insurance

Mandatory health insurance is not required of nondegree students unless the student is enrolled in full time credit hours. Nondegree graduate students affected by this mandatory health insurance (<http://www.sa.sc.edu/shs/tshc/insurance.shtml/>) requirement will be automatically enrolled in the University Plan (with the cost included in students' bills for tuition and fees) unless documentation of comparable alternative health insurance coverage is on file in the Health Insurance Assistance Office at the Thomson Student Health Center (<http://www.sa.sc.edu/shs/tshc/>).

### Citizenship Verification

USC students must present proof of citizenship or lawful presence in the U.S. before enrolling. This policy has been adopted by the University in order to comply with section 59-101-430 of the South Carolina Code of Laws, as amended, which requires that lawful presence in the United States is verified before enrollment at any public institution of higher education. Verification of immigration status for non-citizens will be conducted by International student officials. For other students, a proof of citizenship verification process has been adopted to deter and prevent false claims of citizenship by unlawful aliens attempting to evade the eligibility requirements of section 59-101-430. Students who are not verified as citizens during the Federal Financial Aid Application (FAFSA) process must present the USC's Citizenship Status Verification form (<http://registrar.sc.edu/pdf/citizenshipverificationform.pdf>) and one of the following acceptable documents:

- Copy of the South Carolina driver's license if the student first became a licensed driver in the state after January 1, 2002;
- A Certified Birth Certificate indicating that you were born in the United States or a territory of the United States;
- Current U.S. Passport or U.S. Passport that has not been expired more than 10 years;
- Certificate of Naturalization – USCIS Form (N-550 or N-570);
- U.S. government issued Consular Report of Birth Abroad;
- Certificate of Citizenship (N-560 or N-561);
- Unexpired U.S. Active Duty/Retiree/Reservist Military ID Card (DOD DD-2)

The University can accept photocopies of birth certificates and other citizenship documents so long as we reserve the right to demand production of the certified original in the event there are any questions about whether the copy is true and accurate, or in the event any of the information on the copy is unreadable.

For more information: <http://registrar.sc.edu/html/citizenshipverification.stm>

## Course Registration

### Course Enrollment

Courses numbered 700-899 are restricted to graduate students; courses numbered 500-699 are open to upper-level undergraduate and graduate students. Graduate students registered for courses numbered 500-699 must complete graduate level course work and will receive graduate credit. Graduate students may not enroll for undergraduate credit in courses numbered 500-699 without the permission of their academic advisor and the dean of The Graduate School.

**Access to Courses and Prerequisites**

Access to graduate courses is always subject to departmental consent. Courses numbered 700-899 are restricted to graduate students; courses numbered 500-699 are open to upper-level undergraduate and graduate students. Graduate students registered for courses numbered 500-699 must complete graduate level course work and will receive graduate credit. Graduate students may not enroll for undergraduate credit in course numbered 500-699 without permission of the dean of The Graduate School.

Course prerequisites are listed to inform students about the academic background required for satisfactory course completion. The instructor may approve the enrollment of students who have acquired the equivalent knowledge or skills through other courses or experiences. Special permission to enroll should be requested from the instructor prior to registration.

**Course Loads**

A graduate student may enroll for a semester load not to exceed 15 graduate hours. Some programs limit students to a 12-hour maximum semester load. A student with a load of 9 or more hours during a fall or spring term is classified as full-time for academic purposes.

Graduate assistants carrying 6 or more hours for graduate credit are classified as full-time students. Graduate assistants are required to carry a minimum of 6 hours of graduate credit during the fall and spring terms and if employed during summer session are required to carry a minimum of 1 credit per session.

A student must be enrolled for at least 1 credit during any semester in which thesis or dissertation progress is made and such University resources as the library, computer facilities, or faculty time are used.

Students requesting an overload exception must submit the required Course Overload Enrollment Authorization (CEO) Form to the dean of The Graduate School for approval prior to the beginning of the term for which the exception is requested. Students seeking enrollment exceptions (Z-status) should contact their academic program for processing.

**Right to an Advisor**

Students permitted to enroll as nondegree students are not entitled to an advisor, but may consult an academic program's graduate director for information or approvals as needed.

**Transient Nondegree-Seeking Students**

Students enrolled in or admitted to graduate degree programs at other accredited institutions may seek permission to attend The Graduate School of the University of South Carolina as transient students for a limited number of hours. Students wishing to be admitted as transient students must follow the application process and requirements for nondegree-seeking students.

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