COMPUTER SCIENCE, B.S.C.S.

Degree Requirements (120 hours)

See College of Engineering and Computing (https://academicbulletins.sc.edu/undergraduate/engineering-computing/) for progression requirements and special academic opportunities.

Program of Study

Requirements	Credit Hours
1. Carolina Core	35-41
2. College Requirements	0
3. Program Requirements	46-55
4. Major Requirements	30-33

Founding Documents Requirement

All undergraduate students must take a 3-credit course or its equivalent with a passing grade in the subject areas of History, Political Science, or African American Studies that covers the founding documents including the United State Constitution, the Declaration of Independence, the Emancipation Proclamation and one or more documents that are foundational to the African American Freedom struggle, and a minimum of five essays from the Federalist papers. This course may count as a requirement in any part of the program of study including the Carolina Core, the major, minor or cognate, or as a general elective. Courses that meet this requirement are listed here (https://academicbulletins.sc.edu/undergraduate/founding-document-courses/).

1. Carolina Core Requirements (35-41 hours)

CMW – Effective, Engaged, and Persuasive Communication: Written (6 hours)

Must be passed with a grade of C or higher.

- ENGL 101
- ENGL 102

ARP – Analytical Reasoning and Problem Solving (8 hours)

Must be passed with a grade of C or higher.

- MATH 141
- MATH 142

SCI – Scientific Literacy (8 hours)

Select **all** of **one** of the following:

Either

- CHEM 111 & CHEM 111L - *both must be passed with a grade of C or higher*
- CHEM 112 & CHEM 112L

or

- PHYS 211 & PHYS 211L - *both must be passed with a grade of C or higher*
- PHYS 212 & PHYS 212L

GFL – Global Citizenship and Multicultural Understanding: Foreign Language (0-6 hours)

Score two or better on foreign language placement test; or complete the 109 and 110 courses in FREN, GERM, LATN or SPAN; or complete the 121 course in another foreign language.

- CC-GFL courses (https://academicbulletins.sc.edu/undergraduate/carolina-core-courses/)

GHS – Global Citizenship and Multicultural Understanding: Historical Thinking (3 hours)

- any CC-GHS course (https://academicbulletins.sc.edu/undergraduate/carolina-core-courses/)

GSS – Global Citizenship and Multicultural Understanding: Social Sciences (3 hours)

- any CC-GSS course (https://academicbulletins.sc.edu/undergraduate/carolina-core-courses/)

AIU – Aesthetic and Interpretive Understanding (3 hours)

- any CC-AIU course (https://academicbulletins.sc.edu/undergraduate/carolina-core-courses/)

CMS – Effective, Engaged, and Persuasive Communication: Spoken Component [1] (3 hours)

- any CC-CMS course (https://academicbulletins.sc.edu/undergraduate/carolina-core-courses/)

INF – Information Literacy[1] (0 hours)

- ENGL 102

VSR – Values, Ethics, and Social Responsibility [1] (1 hour)

- CSCE 390 - *must be passed with a grade of C or higher*

[1] **Carolina Core Stand Alone or Overlay Eligible Requirements** — Overlay-approved courses offer students the option of meeting two Carolina Core components in a single course. A maximum of two overlays is allowed. The total Carolina Core credit hours for this program must add up to a minimum of 35 hours.

2. College Requirements (0 hours)

No college-required courses for this program.

3. Program Requirements (46-55 hours)

Supporting Courses (42 hours)

Foundational Courses (16 hours)

Course	Title	Credits
MATH 241	Vector Calculus	3
MATH 344	Applied Linear Algebra	3
MATH 344L	Applied Linear Algebra Lab	1
MATH 374	Discrete Structures (must be passed with a grade of C or higher)	3
STAT 509	Statistics for Engineers	3
ENGL 462	Technical Writing	3

or ENGL 463	Business Writing	
Total Credit Hours		**16**

Laboratory Science Requirement (4 hours)

Course	Title	Credits
Select one of the following:		4
ANTH 161	Human Origins: An Introduction to Biological Anthropology	
ASTR 101	Introduction to Astronomy	
BIOL 101 & 101L	Biological Principles I and Biological Principles I Laboratory	
BIOL 110	General Biology	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Lab	
CHEM 141	Principles of Chemistry I	
ENVR 101 & 101L	Introduction to the Environment and Introduction to the Environment Lab	
ENVR 200	Natural History of South Carolina	
GEOG 201	Landform Geography	
GEOG 202	Weather and Climate	
GEOL 101	Introduction to the Earth	
GEOL 103	Environment of the Earth	
GEOL 201	Observing the Earth	
GEOL 215 & 215L	Coastal Environments of the Southeastern U.S. and Coastal Environments of the Southeastern U.S. (Laboratory)	
GEOL 302	Rocks and Minerals	
MSCI 101	The Ocean Environment	
MSCI 102	The Living Ocean	
MSCI 210 & 210L	Oceans and Society and Oceans and Society Laboratory	
MSCI 215 & 215L	Coastal Environments of the Southeastern US and Coastal Environments of the Southeastern U.S. (Laboratory)	
PHYS 211 & 211L	Essentials of Physics I and Essentials of Physics I Lab	
Total Credit Hours		**4**

Lower Division Computing (22 hours)
Must be passed with a grade of C or higher:

Course	Title	Credits
CSCE 145	Algorithmic Design I	4
CSCE 146	Algorithmic Design II	4
CSCE 190	Computing in the Modern World	1
CSCE 211	Digital Logic Design	3
CSCE 212	Introduction to Computer Architecture	3
CSCE 215	UNIX/Linux Fundamentals	1
CSCE 240	Advanced Programming Techniques	3
CSCE 247	Software Engineering	3
Total Credit Hours		**22**

Electives (4-13)

At least 120 degree applicable credits are required to complete the BSCS in Computer Science. The CS curriculum includes 4-13 hours of electives depending on how students fulfill the Carolina Core requirements and their choice of Concentration. Any course in the university can be used to satisfy the elective requirement, including additional electives in the major.

4. Major Requirements (30-33 hours)
Must be passed with a grade of C or higher.

Major Courses (21 hours)

Course	Title	Credits
CSCE 311	Operating Systems	3
CSCE 330	Programming Language Structures	3
CSCE 350	Data Structures and Algorithms	3
CSCE 355	Foundations of Computation	3
CSCE 416	Introduction to Computer Networks	3
CSCE 490	Capstone Computing Project I	3
CSCE 492	Capstone Computing Project II	3
Total Credit Hours		**21**

Major Electives (9 hours)

Any CSCE course 500 or higher. Students may choose to complete a 12-hour concentration in Artificial Intelligence or Cybersecurity in place of the Major Electives.

Concentrations (12 hours)

Students may choose to complete a 12-hour concentration below in place of the 9 hours of Major Electives.

Artificial Intelligence Concentration (12 hours)

Course	Title	Credits
CSCE 580	Artificial Intelligence	3
Select three courses from the following:		9
CSCE 555	Algorithms in Bioinformatics	
CSCE 567	Visualization Tools	
CSCE 574	Robotics	
CSCE 578	Text Processing	
CSCE 582	Bayesian Networks and Decision Graphs	
CSCE 585	Machine Learning Systems	
CSCE 587	Big Data Analytics	
Total Credit Hours		**12**

Cybersecurity Concentration (12 hours)

Course	Title	Credits
CSCE 201	Introduction to Computer Security	3
CSCE 522	Information Security Principles	3
CSCE 548	Building Secure Software	3
Select one course from the following:		3
CSCE 520	Database System Design	
CSCE 557	Introduction to Cryptography	
Total Credit Hours		**12**