University of South Carolina
Carolina Core

BIOLOGY 244L
HUMAN ANATOMY AND PHYSIOLOGY II LABORATORY

BULLETIN INFORMATION
BIOL 244L: Human Anatomy and Physiology II Laboratory (1 credit hour)
Course Description:
A continuation of BIOL 243L.
Co-requisite: BIOL 244
Note: One three-hour laboratory per week.

SAMPLE COURSE OVERVIEW
The principles of anatomy and physiology are demonstrated by microscopic studies, animal dissection, and physiological experiments. BIOL 244L is the second part of a two part laboratory sequence covering Human Anatomy and Physiology and is the laboratory accompanying BIOL 244. The first part of the sequence is BIOL 243L, Human Anatomy and Physiology Laboratory I. BIOL 244L is designed for pre-pharmacy and pre-nursing students and others seeking a human anatomy and physiology course. BIOL 244L is not available for major credit. The following topics will be covered in BIOL 244L: the digestive, respiratory, circulatory, immune, endocrine, renal, and reproductive systems. Microscope slides, models of human organs and cat dissections will be utilized to facilitate the understanding of important aspects of the topics described above. The construction and testing of hypotheses pertaining to how organ function reflects its anatomical organization at cellular level will be incorporated. The societal implications of human anatomy and physiology as impacted by modern medicine will only be briefly discussed. These topics will be covered in more detail in the accompanying lecture course, BIOL 244.

ITEMIZED LEARNING OUTCOMES
Upon successful completion of Biology 244L, students will be able to:

1. Define, understand, and use scientific, biological, and medical terminology relating to anatomy and physiology.
2. Identify, classify, describe, and explain the structure and function of human cells, tissues, and organ systems, including the digestive, respiratory, circulatory, urinary, reproductive, and endocrine systems.
3. Examine organ morphology and structure through observation of models, animal dissection, and microscope use.
4. Construct hypotheses about how organ morphology and structure optimize organ function.
5. Discuss the impact of modern genomics advances on medical practice, therapeutics, and social issues as they relate to the organ systems under study.

SAMPLE REQUIRED TEXTS/SUGGESTED READINGS/MATERIALS

1. Human Anatomy and Physiology Laboratory Manual, Cat Version by E. N. Marieb

SAMPLE ASSIGNMENTS AND/OR EXAMS

1. **Three (3) practical exams**
2. **Quizzes** at the beginning of each lab session
3. **Student Evaluation**: Quizzes will evaluate the student's understanding of the upcoming laboratory using a simple fill in the blank format. Exams will require the student to demonstrate knowledge of basic scientific terminology relating to anatomy and physiology, and to apply this knowledge by identifying structures in models or dissected animals and answering hypothetical physiological questions. Exam questions will test the student's analytical thinking pertaining to organ structure and function, and hypothesis building and investigation with respect to human physiology and anatomy. Some exam questions require the student to discuss the societal implications of contemporary medical and technological advances, such as those in genomics, on medical practice and therapeutics.

SAMPLE COURSE OUTLINE WITH TIMELINE OF TOPICS, READINGS/ASSIGNMENTS, EXAMS/PROJECTS

Lab 1: Introduction
Digestive System

Lab 2: Respiratory System

Lab 3: Exam I

Lab 4: Handout
Composition of Blood; WBC, RBC, Hematocrit
Hemoglobin, ABO Blood groups

Lab 5: Anatomy of Heart

Lab 6: Handout
Heart, ECG

Lab 7: Blood Vessels

Lab 8: Blood Vessels

Lab 9: Exam II

Lab 10: Urinary System; Reproductive System; Endocrine

Lab 11: Exam III