

**BIO 169**  
**ANATOMY AND PHYSIOLOGY II**

**COURSE DESCRIPTION:**

Prerequisites: BIO 168

Corequisites: None

This course provides a continuation of the comprehensive study of the anatomy and physiology of the human body. Topics include the endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary, and reproductive systems as well as metabolism, nutrition, acid-base balance, and fluid and electrolyte balance. Upon completion, students should be able to demonstrate an in-depth understanding of principles of anatomy and physiology and their interrelationships. Laboratory work includes dissection of preserved specimens, microscopic study, physiologic experiments, computer simulations, and multimedia presentations. *This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.* Course Hours Per Week: Class, 3. Lab, 3. Semester Hours Credit, 4.

**LEARNING OUTCOMES:**

Upon completion of this course, the student will demonstrate basic knowledge in the following:

- a. Basic concepts of endocrinology.
- b. Anatomy and physiology of the reproductive system.
- c. Physiology of blood and defense.
- d. Cardiovascular anatomy and physiological control.
- e. Anatomy and physiology of the respiratory system.
- f. Anatomy and physiology of the urinary system.
- g. Acid-base, fluid and electrolyte balances.
- h. Anatomy and physiology of the digestive system.

**OUTLINE OF INSTRUCTION:**

- I. Endocrine system
  - A. Hypothalamic hormones
  - B. Anterior pituitary hormones
  - C. Posterior pituitary hormones
  - D. Endocrine glands
  
- II. Reproduction
  - A. General terminology
  - B. Male reproductive system
  - C. Female reproductive system

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- III. Blood
  - A. Basic hematology - plasma and cellular components
  - B. Hemostasis
  - C. Blood groupings
  
- IV. Lymphatic system
  - A. Nonspecific and specific defense mechanisms
  - B. Hypersensitivity and tissue rejection
  
- V. Cardiovascular system
  - A. The heart
  - B. Peripheral circulation
  - C. Regulation of cardiovascular system
  
- VI. Respiratory system
  - A. Pulmonary anatomy
  - B. Mechanics of breathing
  - C. Measurement of pulmonary function
  - D. Control of breathing
  - E. Gas laws and gas exchange
  - F. Gas transport mechanisms
  
- VII. Urinary system
  - A. Functions
  - B. Anatomy of urinary system
  - C. The nephron
  - D. Urine formation
  - E. Composition of urine
  - F. Control of urine formation
  - G. Clinical correlations
  - H. Micturition
  
- VIII. Acid-base, fluid and electrolyte balances
  - A. Extracellular and intracellular fluid compartments
  - B. Regulation of electrolytes
  - C. Regulation of body water
  - D. Physiologic buffers
  - E. Respiratory control of pH
  - F. Renal control of pH
  - G. Physiology of acid-base imbalance
  - H. Fluid and electrolyte imbalance

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- IX. Digestive system
  - A. General plan of the alimentary canal
  - B. Organs of digestion
  - C. Metabolism and nutrition

### **REQUIRED TEXTBOOKS AND MATERIALS:**

Saladin, K. S. Anatomy & Physiology. The unity of form and function. 5<sup>th</sup> ed. New York: McGraw-Hill, 2010.

Van De Graaff, K., Morton, D., & Crawley, J. A Photographic Atlas for the Anatomy and Physiology Laboratory. 6<sup>th</sup> ed., Englewood, CO., Morton Publishing Company, 2007.

Amerman, E. Exercises for the Anatomy & Physiology Laboratory, 6<sup>th</sup> ed., Englewood, CO., Morton Publishing Company, 2006

### **SUGGESTED REFERENCES, PERIODICALS, AND VISUAL AIDS:**

Numerous supplementary texts, programmed materials, and audiovisual packages are available in the Educational Resources Center. These materials may be utilized to reinforce the lecture and lab material or to provide material for independent study by the student.

### **STATEMENT OF STUDENTS WITH DISABILITIES:**

Students who require academic accommodations due to any physical, psychological, or learning disability are encouraged to request assistance from a disability services counselor within the first two weeks of class. Likewise, students who potentially require emergency medical attention due to any chronic health condition are encouraged to disclose this information to a disability services counselor within the first two weeks of class. Counselors can be contacted by calling 536-7207, ext 1418 or by visiting the Student Development Office in the Phail Wynn Jr. Student Services Center, room 1309.