

## 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:

1. Describe the major anatomical components of each human body system studied, describe briefly their anatomical locations and general structures, and explain their physiological functions at both the organ and cellular levels.
2. Describe the regulation of the human body and explain how body systems studied are integrated.
3. Apply the concepts learned in the lecture to understand and analyze laboratory activities and observations.

### 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

- 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

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

**REQUIRED TEXTBOOKS AND MATERIALS:**

To be selected by Instructor/Discipline Chair.