

# BIO 163 Basic Anatomy and Physiology

## COURSE DESCRIPTION:

Prerequisites: DRE-097, or ENG-002, or satisfactory score on placement test.

Corequisites: None

This course provides a study of the body systems as well as an introduction to homeostasis, cells, tissues, nutrition, acid-base balance, and electrolytes. Upon completion, students should be able to demonstrate a basic understanding of the fundamental principles of anatomy and physiology and their interrelationships. *This course has been approved for transfer under the Comprehensive Articulation Agreement as a premajor and/or elective course requirement.*

Course Hours Per Week: Class, 4. Lab, 2. Semester Hours Credit, 5.

## LEARNING OUTCOMES:

Upon completing requirements for this course, the student will be able to:

1. Identify basic anatomical and physiological characteristics of each of the organ systems.
2. Explain interrelationships between form and function as related to maintaining homeostasis.
3. Demonstrate basic technical skills in microscopy and dissection.

## OUTLINE OF INSTRUCTION:

- I. Introduction to chemistry, homeostasis, acid-base balance, and electrolytes
  - A. Matter, elements, atomic structure
  - B. Molecules and types of bonds
  - C. Regulation of fluid balance
  - D. Regulation of electrolyte balance
  - E. Regulation of pH
- II. Introduction to cells
  - A. Structure and function
  - B. Transport
  - C. Mitosis and meiosis
- III. Introduction to structure and function of tissues
  - A. Epithelial
  - B. Connective
  - C. Muscle
  - D. Nervous
- IV. Introduction to nutrition
  - A. Basic metabolism of biomolecules (i.e. carbohydrates, lipids, and proteins)
  - B. Vitamins and minerals
- V. Basic study of body systems
  - A. Terminology (i.e. anatomical positions, directional terms, planes of section, body regions and body cavities)
  - B. Integumentary system
    - 1.

- C. Skeletal system
  - 1. Axial and appendicular bones
  - 2. Basic bone development
  - 3. Functions of the skeletal system
- D. Muscular system
  - 1. Major muscles of the body
  - 2. Skeletal muscle contraction
  - 3. Neuromuscular junction
  - 4. Types of movement at joints
- E. Nervous system
  - 1. Central nervous system
  - 2. Peripheral nervous system
  - 3. Autonomic nervous system
  - 4. Neuron anatomy and basic mechanism of neural impulse
  - 5. Sensory structures: eye and ear
- F.

3. [(TTf1 -1.h02 Tw - .4 (c)6CID 60 xTf19T7 (.4 (c)6b.8 (82.ur)-12.k)2>4DC:EMC /LBodo(nd6 4 (.4 (c)6h02 Tw -6 f12.6.) 3