

Common Course Number: BSC-2085

Course Title: Human Anatomy and Physiology I

Catalog Course Description:

The structure and function of the systems of the human body, emphasizing those aspects most pertinent to students in the nursing and allied health technology programs.

Credit Hours Breakdown: 3 lecture hours

Prerequisite: None

Co requisite: BSC-2085-Laboratory

Course Competencies:

Competency 1: The Sciences of Anatomy and Physiology

Upon successful completion of this course, the student will be able to understand the meaning of these two terms by:

- 1.1 Defining anatomy and physiology, and explaining how they are related.
- 1.2 Defining homeostasis and its mechanisms, and explaining its importance to survival.
- 1.3 Describing a feedback system and differentiating between positive and negative feedback.

Competency 2: Organization of the Human Body

Upon successful completion of this course, the student will be able to describe how the body is organized by:

- 2.1 Identifying the major regions of the body utilizing appropriate anatomical terminology.
- 2.2 Defining the anatomical planes used to locate parts of the body
- 2.3 Describing the locations of the major body cavities and listing the major organs in each cavity.

Competency 3: Introductory Chemistry

Upon successful completion of this course, the student will be able to understand the basic knowledge of chemistry as it relates to anatomy and physiology by:

- 3.1 Defining the functions of water, acids, bases, and the concept of pH.
- 3.2 Discussing the functions of carbohydrates, lipids, proteins, and nucleic acids.
- 3.3 Explaining the role of enzymes in living systems.

Competency 4: Cells and Tissues

Upon successful completion of this course, the student will be able to understand the major cellular organelles and tissue types, and explain their function by:

- 4.1 Identifying the major cellular organelles.
- 4.2 Explaining how substances move into and out of cells.
- 4.3 Describing how a cell divides.
- 4.4 Identifying the four basic tissue types that comprise the human body: epithelial, connective, muscle, and nervous tissues.

Competency 5: The Integumentary System

Upon successful completion of this course, the student will be able to understand the integumentary system and explain its functions by:

- 5.1 Describing the structure of the skin.
- 5.2 Describing the effects of aging on the integumentary system.

Competency 6: The Skeletal System

Upon successful completion of this course, the student will be able to understand the skeletal system and explain its functions by:

- 6.1 Describing the factors involved in ossification and bone growth.
- 6.3 Identifying the axial and appendicular divisions and their major bones
- 6.4 Describing the effects of aging on the skeletal system.

Competency 7: Joints

Upon successful completion of this course, the student will be able to know the different kinds of joints by:

- 7.1 Defining a joint and describing how the structure of a joint determines its function.
- 7.2 Describing the structure of the different type of joints, and how are their functions related.
- 7.3 Explaining the effects of aging on joints.

Competency 8: The Muscular System

Upon successful completion of this course, the student will be able to understand the muscular system by:

- 8.1 Describing the location, function(s), and characteristics of each type of muscle tissue: smooth, cardiac, and skeletal.
- 8.2 Explaining the major events that occur during muscle fiber contraction.
- 8.3 Describing the sources of ATP and oxygen necessary for muscle contraction.
- 8.4 Describing how exercise affects skeletal muscle.

Competency 9: Nervous Tissue

Upon successful completion of this course, the student will be able to understand the basic structure of nervous tissue by:

- 9.1 Describing the basic components and general functions of the nervous tissue.
- 9.2 Comparing the structure and function of neurons and neuroglia.
- 9.3 Explaining how nerve impulses are transmitted from neuron to neuron and neuron to muscle.

Competency 10: The Control Systems: Nervous and Endocrine

Upon successful completion of this course, the student will be able to understand the nervous and endocrine systems by:

- 10.1 Defining central nervous system.
- 10.2 Naming the major parts of the brain and describing the functions of each.
- 10.3 Describing the spinal cord and its function
- 10.4 Listing and defining the major parts of the peripheral nervous system.
- 10.5 Describing the general characteristics of the autonomic nervous system.
- 10.6 Describing the two general mechanisms of hormone action as they relate to neural transmission.
- 10.7 Explaining the relationship between the hypothalamus and the pituitary.
- 10.8 Describing the function(s) of the major endocrine glands.
- 10.9 Explaining how stress affects the nervous and endocrine systems.