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.

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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.