

### **Course Description**

#### **BSC2085L | Human Anatomy and Physiology 1 Laboratory | 1.00 credit**

In this laboratory course, students will learn to apply the concepts covered in BSC2085 as it pertains to structure and function of the human body from an experiential approach. This course is the first part of a two-semester sequence in which students examine human anatomy and physiology through a systems approach based on the interaction between form and function, from the microscopic components of cells and tissues to the organismal level. Emphasis is placed on histology and the integumentary, skeletal, muscular, and nervous systems.

### **Course Competencies**

**Competency 1:** The student will apply the basic terminology of human anatomy by:

1. Demonstrating the anatomical position
2. Listing the directional terminology for the human body
3. Identifying the human anatomical regions
4. Differentiating body cavities and organs

**Competency 2:** The student will demonstrate knowledge of the microscope and the cellular and tissue levels of organization by:

1. Identifying the parts of the compound microscope
2. Describing the functions of the parts of the compound microscope
3. Demonstrating the correct use and care of the compound microscope to examine specimens
4. Identifying and describing the different parts of human cells and their functions
5. Differentiating the basic human tissue types in prepared slides
6. Describing the location and function of the basic human tissue types

**Competency 3:** The student will recognize the various components of the integumentary system by:

1. Identifying selected skin tissues and structures from prepared slides
2. Explaining the structures and functions of epidermal and dermal layers of the skin
3. Identifying the accessory structures of the skin and their functions

**Competency 4:** The student will identify the microscopic and macroscopic structures of bones and the structural and functional classification of selected articulations by:

1. Identifying the locations and functions of various types of cartilage in the adult skeleton
2. Distinguishing between compact and spongy bone
3. Identifying the components of the osteon or Haversian system
4. Locating the major anatomical structures of a long bone
5. Identifying the bones of the axial and appendicular skeleton
6. Identifying the bones and sutures of the adult skull and locate fontanelles on a Fetal skull
7. Identifying selected bone markings
8. Listing the subdivisions of the vertebral column
9. Identifying the parts of individual vertebral types
10. Distinguishing among the selected types of body movements
11. Describing the general structure and function of selected articulations

**Competency 5:** The student will be able to understand the gross and microscopic anatomy of muscles and their physiology by:

1. Identifying and describing the locations and morphological and physiological characteristics of the three types of muscle tissue
2. Describing the location and functions of the microscopic structures of skeletal muscle

3. Identifying selected muscles of the axial region and their actions
4. Identifying selected muscles of the appendicular region and their actions
5. Demonstrating the physiological characteristics of motor units and whole skeletal muscle contraction

**Competency 6:** The student will demonstrate an understanding of the structural and functional features of the nervous system, including the unique sense organs, by:

1. Identifying the parts of a neuron
2. Explaining the structural and functional classification of the neurons
3. Describing the structure and functions of the supporting cells of the nervous system
4. Distinguishing between neuron, nerve, and tract
5. Explaining the structure and functions of the central nervous system and the cranial nerves
6. Describing the structure and functions of the spinal cord and the spinal nerves and their plexuses
7. Demonstrating reflex physiology
8. Distinguishing structures associated with vision and explaining their functions
9. Differentiating structures associated with hearing and equilibrium explaining their functions
10. Demonstrating the functions of the special senses and cranial nerves

**Learning Outcomes:**

- Communicate effectively using listening, speaking, reading, and writing skills
- Solve problems using critical and creative thinking and scientific reasoning
- Demonstrate knowledge of ethical thinking and its application to issues in society