Common Course Number: BSC-2086

Course Title: Human Anatomy and Physiology II

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: BSC-2085

Co requisite: BSC-2086-Laboratory

Course Competencies:

Competency 1: The Cardiovascular System: Blood, Blood Vessels and the Heart

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

1.1 Describing the general characteristics of blood and its major functions.
1.2 Listing the types of blood cells and their functions, and blood types.
1.3 Naming the organs of the cardiovascular system and discussing their functions.
1.4 Tracing the pathway of blood through the heart and lungs.
1.5 Comparing the structures and functions of the major types of blood vessels.
1.6 Defining cardiac output and how it is regulated.
1.7 Identifying the factors that affect blood pressure and vascular resistance.
1.8 Explaining the relationship between diet, exercise, and cardiovascular health.
**Competency 2: The Lymphatic and Immune System**

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

2.1 Describing the general functions of the lymphatic and immune systems.
2.2 Listing the major lymph organs and the functions of each.
2.3 Distinguishing between specific and non-specific defenses.
2.4 Distinguishing between primary and secondary immune responses.
2.5 Distinguishing between active and passive immunity.
2.6 Explaining how allergic reactions, tissue rejection reactions, and autoimmunity are related.
2.7 Comparing the functions of cell-mediated immunity and antibody-mediated immunity.

**Competency 3: The Respiratory System**

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

3.1 Listing the general functions of the respiratory system.
3.2 Describing the structure and functions of each organ of the respiratory system.
3.3 Explaining how oxygen and carbon dioxide are carried by the blood and exchanged between the lungs and the tissues.
3.4 Describing the respiratory center and its role in inhalation and exhalation.

**Competency 4: The Digestive System**

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

4.1 Naming and describing the major organs of digestion.
4.2 Explaining how food travels through the alimentary canal and discussing the mechanical and enzymatic activity occurring along the GI tract.
4.3 Listing and describing the factors that regulate food intake.

**Competency 5: Metabolism and Nutrition**

Upon successful completion of this course, the student will be able to understand the roles of metabolism and nutrition by:

5.1 Defining metabolism and nutrition, and their roles in homeostasis.
5.2 Listing six classes of nutrients and distinguish between nutrients and essential nutrients.
5.3 Listing the major sources of carbohydrates, lipids, and proteins and how they are used by the cell(s).
5.4 Listing the fat-soluble and the water-soluble vitamins and stating the general functions of each class.
5.5 Explaining the importance of diet on health.
**Competency 6:** The Urinary System, Fluids, Electrolytes, and Acid-Base Balance

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

6.1 Listing the organs of the urinary system.
6.2 Describing the structure of a kidney and discussing filtration, reabsorption, and secretion.
6.3 Discussing why kidneys are considered to be our most important homeostatic organ.
6.4 Describing the hormones affecting the kidneys, such as erythropoietin, aldosterone and ADH.
6.5 Listing the normal and abnormal components of urine, and discussing the importance of water and electrolyte balance.
6.6 Describing the various fluid compartments of the body and comparing their electrolyte composition.
6.7 Discussing the significance of physiological buffering by the lungs and kidneys.

**Competency 7:** The Reproductive System.

Upon successful completion of this course, the student will be able understand the male and female reproductive systems by:

7.1 Naming the structure and functions of the male and female reproductive systems.
7.3 Comparing and contrasting spermatogenesis and oogenesis.
7.4 Explaining how hormones control the activities of the reproductive organs and discussing the role of hormones in the development of primary and secondary sexual characteristics.
7.5 Discussing the ovarian and menstrual cycles and explaining how they are related.
7.6 Describing the effects of aging on the reproductive systems of males and females.