Miami Dade College

Course Description

BSC2086 | Human Anatomy & Physiology 2 | 3.00 credits

Building on concepts learned in BSC2085, students will learn the structure, function, and physiology of the human body, with an emphasis on the Endocrine, Cardiovascular, Lymphatic, Respiratory, Digestive, Urinary, and Reproductive Systems. Prerequisite: BSC2085; Corequisite: BSC2086L

Course Competencies

Competency 1: The student will be able to understand the structure and function of the endocrine system by:

1. Distinguishing the structure and function of the major endocrine organs
2. Differentiating hormone types and mechanisms of action
3. Explaining hypothalamus-pituitary gland relationships
4. Explaining the homeostatic imbalances of the endocrine system

Competency 2: The student will be able to understand the cardiovascular system by:

1. Describing the general composition and functions of blood
2. Distinguishing the types of blood cells and their functions
3. Contrasting different blood types
4. Analyzing the structure and functions of the organs of the cardiovascular system
5. Contrasting the pulmonary circulation versus systemic circulation
6. Comparing the structures and functions of the major types of blood vessels
7. Describing the events of the cardiac cycle
8. Identifying the factors that affect blood pressure and vascular resistance
9. Explaining the relationship between diet, exercise, and cardiovascular health
10. Explaining the homeostatic imbalances of the heart, blood, and blood vessels

Competency 3: The student will be able to understand the structure and function of the lymphatic and immune systems by:

1. Describing the major lymph organs and their functions
2. Distinguishing between specific and nonspecific defense mechanisms
3. Contrasting active and passive immunity
4. Comparing the functions of cellular and humoral immunity
5. Explaining the homeostatic imbalances of the lymphatic and immune systems

Competency 4: The student will be able to understand the structure and function of the respiratory system by:

1. Describing the structure and functions of the respiratory system organs
2. Explaining how oxygen and carbon dioxide are exchanged in the alveoli of the lungs, and in the tissues of the body
3. Interpreting respiratory control
4. Explaining the homeostatic imbalances of the respiratory system

Competency 5: The student will be able to understand the structure and function of the digestive system by:

1. Describing the structure and function of the digestive system organs
2. Explaining mechanical and chemical digestion
3. Analyzing the role of digestive enzymes and absorption of nutrients
4. Interpreting local and neuroendocrine control of digestive processes
5. Explaining the homeostatic imbalances of the respiratory system

Competency 6: The student will be able to understand the roles of metabolism and nutrition by:

1. Distinguishing nutrition and metabolism, and their roles in homeostasis
2. Describing the major nutrients needed for cellular metabolic processes
3. Differentiating the major sources of carbohydrates, lipids, and proteins, and their metabolism
4. Explaining the primary metabolic roles of vitamins and minerals
5. Analyzing the importance of diet on health
6. Explaining the homeostatic imbalances in metabolism of nutrients

Competency 7: The student will be able to understand the structure and functions of the urinary system, fluid and electrolyte balance by:

1. Describing the structure and function of the organs of the urinary system
2. Distinguishing filtration, reabsorption, and secretion in the kidney
3. Describing neuroendocrine control of fluid and electrolyte balance
4. Describing the chemical composition of urine
5. Contrasting the various fluid compartments of the body and their electrolyte composition
6. Discussing the significance of physiological buffering by the lungs and kidneys
7. Explaining the homeostatic imbalances in the urinary system and fluids and electrolytes

Competency 8: The student will be able to understand the reproductive systems and development by:

1. Describing the structure and function of the reproductive system
2. Comparing spermatogenesis and oogenesis
3. Explaining neuroendocrine control of reproductive function
4. Discussing the relationship of ovarian and menstrual cycles
5. Describing the stages of pregnancy
6. Explaining the process of childbirth
7. Identifying major stages in the human life cycle
8. Explaining the homeostatic imbalances in the reproductive system

General Education Learning Outcomes:

- Use quantitative analytical skills to evaluate and process numerical data
- Solve problems using critical and creative thinking and scientific reasoning
- Describe how natural systems function and recognize the impact of humans on the environment