

Moraine Park Technical College

## 806-189 Basic Anatomy

### Course Outcome Summary

#### Course Information

**Description** Examines concepts of anatomy and physiology as they relate to health careers. Students correlate anatomical and physiological terminology to all body systems. This course is intended for programs that involve indirect patient care, i.e., Health Information Technology, Clinical Coding, Medical Transcription, etc. This is not an acceptable course in health-related programs that involve direct patient care, i.e., Nursing, Radiologic Technology, Surgical Technology, etc. This course is not acceptable as a course substitution for 806-177 General Anatomy and Physiology. (Prerequisite: 806-134 General Chemistry or high school or college chemistry with a C or better)

#### **Textbooks Not required to be purchased for exam.**

Valerie C. Scanlon and Tina Sanders. *Essentials of Anatomy and Physiology*. F. A. Davis.

**Edition:** 5th. **Pages:** 603. **ISBN:** 10: 0-8036-1546-9. **Source:** MPTC Bookstore.

**Description** Examines concepts of anatomy and physiology as they relate to health careers.

To schedule an exam: contact Greg Mittelsteadt at 920-924-3215 or [cpl@morainepark.edu](mailto:cpl@morainepark.edu)

An 80% is required to pass the exam

Exam consists of 100 multiple choice questions.

## **Course Competencies**

### **Use online learning tools.**

#### **Learning Objectives**

List the online learning tools available for this course.

Describe the purpose of the Discussion in an online course.

List two ways to find information and directions about using online tools.

Describe the value of sharing information about yourself with your peers by using the Threaded Discussion.

Explain the purpose of a Learning Plan.

Explain the purpose of an Assessment.

### **Explain concept of homeostasis as it relates to anatomy and physiology.**

#### **Learning Objectives**

Compare anatomy and physiology.

Identify anatomical and physiological examples of homeostasis.

### **Relate body structures to body systems and functions.**

#### **Learning Objectives**

Correlate major body tissues and organs to systems of body.

Compare anatomy and physiology.

Outline levels of organization within body from simplest to most complex.

Examine terminology associated with levels of body organization.

Correlate body systems with body functions.

Illustrate correct anatomical position.

### **Relate anatomical terminology to body regions, body and organ planes, and body cavities.**

#### **Learning Objectives**

Illustrate correct anatomical position.

Apply terms used to describe relationships of body structures to one another.

Apply terms used to describe sections and planes of body and body structure.

Correlate components of abdominopelvic cavity to specific abdominal regions.

Correlate components of body to their specific body cavities.

### **Examine basic concepts of chemistry.**

#### **Learning Objectives**

Characterize terminology associated with building blocks of chemistry.

Compare types of chemical bonds.

Examine functions and locations of water.

Characterize components of a solution.

Compare oxygen and carbon dioxide.

Identify trace elements.

Correlate pH of body fluids to concept of homeostasis.

Characterize complex molecules by their structure and functions.

Compare RNA and DNA by structure, location and function.

Examine role of enzymes in body functions.

### **Compare cellular transport mechanisms.**

#### **Learning Objectives**

Analyze components of cell membrane.

Identify intracellular components.

Relate cell structures to cell functions.

Characterize types of transport systems used by cells.

### **Examine major cellular functions.**

#### **Learning Objectives**

Identify steps of protein synthesis

Compare stages of mitosis and meiosis.

Compare outcomes of mitosis and meiosis.

## **Characterize primary tissue types of body.**

### **Learning Objectives**

- Identify primary tissues of body by location.
- Identify primary tissues of body by function.
- Compare components of each type of primary tissue.
- Compare membranes associated with body tissues.
- Compare types of epithelium by structure, location and function.

## **Relate integumentary components to integumentary functions.**

### **Learning Objectives**

- Identify functions of integumentary system.
- Compare layers of skin.
- Characterize hair by structure and location.
- Identify location and functions of integumentary nerve tissue, glands and blood vessels.

## **Evaluate the inflammation process.**

### **Learning Objectives**

- Examine purpose of inflammatory process.
- Analyze role of chemical mediators in the inflammatory process.
- Characterize symptoms of inflammation.
- Correlate anatomical changes of inflammatory process to symptoms.

## **Compare the axial and appendicular portions of human skeleton.**

### **Learning Objectives**

- Examine components of axial and appendicular skeleton.
- Identify bones of axial and appendicular skeleton.
- Compare bones by shape and gross anatomical appearance.
- Compare types of bone cells.
- Examine significance of chemical composition of bone.

## **Assess growth of bone tissue.**

### **Learning Objectives**

- Characterize steps involved in bone growth.
- Identify cells involved in bone growth.
- Analyze factors that affect bone growth and maintenance.
- Contrast osteoporosis disease process and bone growth.

## **Correlate activities at neuromuscular junction with the sliding filament theory.**

### **Learning Objectives**

- Identify structure of a muscle fiber.
- Characterize muscles as antagonistic or synergistic.
- Compare isotonic and isometric muscle contractions (exercise).
- Analyze role of nerve tissues (e.g. brain structures, nerve receptors, etc.) in regulating muscle function.
- Break down sliding filament theory into steps.
- Identify major muscles of body.

## **Compare divisions of nervous system by location, structure, and functions.**

### **Learning Objectives**

- Identify divisions of nervous system.
- Compare cells of nerve tissue.
- Characterize actions at a synapse.
- Compare types of neurons and nerves.
- Analyze structure of spinal cord.
- Correlate components of nervous system to a reflex arc.
- Compare structures of brain by location and function.
- Compare spinal and cranial nerves.
- Compare sympathetic and parasympathetic divisions.

## **Compare sensory receptors of body tissues.**

### **Learning Objectives**

- Characterize sensory receptors by sensations.
- Explain referred pain.
- Compare senses of thirst, hunger and taste.
- Examine physiology of vision.
- Examine sound pathway.
- Correlate major structures of the eye and ear with their respective functions.
- Examine anatomy of the eye.

## **Relate hormone actions to tissues.**

### **Learning Objectives**

- Examine role of hormones in homeostasis.
- Identify components of endocrine system.
- Compare mechanisms of hormone action.
- Compare anterior and posterior pituitary.

## **Analyze composition and functions of blood.**

### **Learning Objectives**

- Identify characteristics and normal values of blood.
- Examine formed elements of blood.
- Compare blood types.
- Assess stages of hemostasis.

## **Analyze regulation of blood flow.**

### **Learning Objectives**

- Contrast arteries, veins and capillaries.
- Compare pulmonary and systemic circulation.
- Identify major blood vessels of body.
- Identify body systems involved in maintaining and regulating blood pressure.

## **Evaluate mechanisms that regulate heart rate.**

### **Learning Objectives**

- Identify structures of the heart.
- Map blood flow through heart.
- Characterize sequence of events in the cardiac cycle.
- Analyze cardiac conduction pathway.

## **Analyze components of lymphatic system.**

### **Learning Objectives**

- Characterize composition of lymph.
- Identify areas of lymphatic nodes and lymphatic nodules.
- Correlate structure of spleen with its functions.
- Correlate structure of thymus with its functions.

## **Compare types of immunity.**

### **Learning Objectives**

- Identify cells of immunity.
- Compare antigens and antibodies.
- Compare acquired and genetic immunity.
- Analyze actions of cell-mediated and humoral immunity.

## **Evaluate ventilation.**

### **Learning Objectives**

- Identify structures of upper and lower respiratory tracts.
- Identify location and functions of lung serous membranes.
- Characterize mechanisms of air movement during inspiration and expiration.
- Analyze terminology associated with measuring pulmonary volumes.

## **Analyze digestion and absorption.**

### **Learning Objectives**

- Map pathway food products take from the oral cavity to the rectum.
- Compare divisions of digestive system.
- Compare functions of structures within the digestive system.
- Identify layers of alimentary canal wall.
- Compare functions of liver.
- Compare functions of large and small intestines.

## **Assess the urinary system's role in maintaining homeostasis of blood volume, blood pressure, and blood pH.**

### **Learning Objectives**

- Identify functions of urinary system.
- Identify gross anatomical and microscopic appearance of urinary system components.
- Analyze urine formation.
- Compare mechanisms that regulate urine formation.
- Analyze clinical relevance of urine composition.
- Evaluate urination reflex.

## **Differentiate between stages of menstrual cycle.**

### **Learning Objectives**

- Identify structures of female reproductive system.
- Compare interactions between pituitary hormones and the ovaries and mammary glands.
- Relate changes in endometrium to ovarian cycle.
- Analyze follicular changes during menstrual cycle.

## **Analyze stages of spermatogenesis.**

### **Learning Objectives**

- Map spermatozoa movement through male reproductive system.
- Identify structures of male reproductive system.
- Relate accessory reproductive glands to spermatogenesis.
- Identify cells of spermatogenesis.

## **Correlate microbiology terminology with human disease processes.**

### **Learning Objectives**

- Compare different types of microorganisms.
- Classify terminology associated with reservoirs of infection and spread of infection.
- Compare portals of entry and portals of exit.
- Examine relationship between disease and specific types of microorganisms.