



South Central College

HC 1924 Anatomy & Physiology and Disease Conditions II

Common Course Outline

Course Information

Description This course is a continuation of HC 1914 Anatomy/Physiology/Disease Conditions I with emphasis on the pathophysiology of the human body. The student will apply previous knowledge in medical terminology and structure and function of the human body. This course prepares the student in understanding the abnormalities and diseases the affect the organs and organs systems. (Prerequisites: HC 1000, HC 1914)

Total Credits 4

Total Hours 64

Types of Instruction

Instruction Type	Credits/Hours
Lecture	4/64

Pre/Corequisites

HC 1914, HC 1000

Institutional Core Competencies

Communication - Students will be able to demonstrate appropriate and effective interactions with others to achieve their personal, academic, and professional objectives.

Critical and Creative Thinking - Students will be able to demonstrate purposeful thinking with the goal of using a creative process for developing and building upon ideas and/or the goal of using a critical process for the analyzing and evaluating of ideas.

Course Outcomes

1. Describe the function and composition of blood.

Learning Objectives

- Define terms related to blood.
- Describe three functions of blood.
- Describe the composition and formation of blood.
- Describe the four blood types.
- Describe the Rh factor.
- Discuss common disease conditions of blood.

Explain the composition, characteristics, and functions of red and white blood cells and platelets.

2. Describe the structure and function of the blood vessels.

Learning Objectives

Define terms related to blood vessels.

Describe the structure and function of arteries, capillaries, and veins.

Explain pulse and its use as an assessment tool.

List the major arteries and veins of the systemic circulation.

Discuss blood pressure.

Explain how blood vessels act as exchange vessels.

Explain how the blood vessels respond to changing body needs.

Describe the following special circulations: pulmonary and systemic circulations, blood supply to the head and brain, hepatic circulation, and fetal circulation.

Discuss common disease conditions of blood vessels.

3. Describe the structure of the heart.

Learning Objectives

Label parts of the heart.

Identify the four chambers and great vessels of the heart.

Name the three layers and the covering of the heart.

List the vessels that supply blood to the heart.

Describe blood flow through the heart.

Identify the major components of the heart's conduction system.

4. Describe the structure and function of the lymphatic system.

Learning Objectives

Define terms related to the lymphatic system.

List three functions of the lymphatic system.

Describe the composition and flow of lymph.

State the location of primary lymph nodes.

Describe the other lymphoid organs.

Discuss common disease conditions of the lymphatic system.

5. Describe the structure and function of the immune system.

Learning Objectives

Define terms related to the immune system.

Discuss nonspecific immunity and specific immunity.

Differentiate between specific and nonspecific immunity.

Explain the role of t cells in cell-mediated immunity.

Explain the role of b cells in antibody-mediated immunity.

Differentiate between genetic immunity and acquired immunity.

Describe naturally and artificially acquired active and passive immunity.

Describe immune responses.

Discuss common abnormalities of the immune system.

6. Describe the structure and function of the respiratory system.

Learning Objectives

Define terms related to the respiratory system.

Label parts of the respiratory system.

Describe why lungs collapse or expand and the role of pulmonary surfactants.

Discuss the three steps in respiration.

Describe the relationship of Boyle's law to ventilation.

Explain how respiratory muscles affect thoracic volume.

Explain the neural and chemical control of respiration.

List lung volumes and capacities.

Discuss the voluntary and involuntary control of breathing.

Describe common variations and abnormalities of breathing.

Discuss common disease conditions of the respiratory system.

7. Describe the structure and function of the digestive system.

Learning Objectives

Define terms related to the digestive system.
Label parts of the digestive system.
List four functions of the digestive system.
Explain the processes of digestion and absorption.
Describe the four layers, nerves, and membranes of the digestive tract.
Discuss the structure and functions of the accessory organs of the digestive tract.
Discuss common disease conditions of the digestive system.
Explain the physiology of digestion and absorption.
Discuss basic nutrition concepts.
Discuss common disease conditions of the digestive system.

8. Describe the structure and function of the urinary system.

Learning Objectives

Define terms related to the urinary system.
List and label organs of excretion.
Explain the role of the nephron unit in the formation of urine.
Explain the three processes involved in the formation of urine: filtration, reabsorption, and secretion.
Describe the hormonal control of water and electrolytes by the kidneys.
List the normal constituents of urine.
Describe the structure and function of the ureters, urinary bladder, and urethra.
Discuss common disease conditions of the urinary system.

9. Describe the function of water, electrolyte, and acid–base balance.

Learning Objectives

Define terms related to water, electrolyte, and acid–base balance.
Describe the two main fluid compartments and the composition of body fluids.
Explain the effects of water imbalances, fluid shift, and fluid spacing.
List factors that affect electrolyte balance.
Describe the most common ions found in the intracellular and extracellular compartments.
List three mechanisms that regulate pH in the body.
Discuss acid–base imbalances.

10. Describe the structure and function of the male and female reproductive systems.

Learning Objectives

Define terms related to the reproductive system.
List and label the structures of the male and female reproductive systems.
Describe the hormonal control of reproduction.
Describe the various methods of birth control.
Explain fertilization and prenatal development.
Describe the process of fertilization.
Describe the process of development.
Explain the three periods of prenatal development.
State two functions of the placenta.
Discuss common abnormalities and disease conditions of the male and female reproductive systems.

11. Describe pregnancy and labor, postnatal changes, and heredity.

Learning Objectives

Define terms related to pregnancy and labor.
Explain hormonal changes during pregnancy.
Describe the hormonal changes and stages of labor.
Describe the structure of the breast and lactation.
Describe immediate postnatal changes and lifelong developmental stages.
Discuss heredity and how genetic structures are related.
Describe the relationships among deoxyribonucleic acid (DNA), chromosomes, and genes.
Explain how the gender of the child is determined.
State the difference between congenital and hereditary diseases.

Discuss common abnormalities related to pregnancy and labor.

12. Explain the function of the heart.

Learning Objectives

Define specific clinical vocabulary used to describe cardiac function.

Explain the functions of the four heart valves.

Describe the physiological basis of the heart sounds.

Explain the function of the heart as two separate pumps.

Discuss common disease conditions of the cardiovascular system.

SCC Accessibility Statement

Disability Services provides accommodations and other supports to students with permanent and temporary disabilities that affect their SCC experience. Disabilities may include mental health (anxiety, depression, PTSD), ADHD, learning disabilities, chronic health conditions (migraine, fibromyalgia), sensory disabilities, and temporary disabilities (broken arm, surgery). Common accommodations are extended test time, private room for testing, audiobooks, and sign language interpreter.

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