South Central College

ICP 1005 Applied Anatomy and Physiology for EMS

Course Outcome Summary

Course Information

Description	This course is designed as an introduction to body structure and function. An emphasis will be placed on body systems specifically related to paramedicine and how that knowledge can be applied to EMS care.
Total Credits	3
Total Hours	48

Types of Instruction

Instruction Type	Credits/Hours
Classroom Presentation	

Pre/Corequisites

Admission into the Paramedic Program. All Classes must be taken in sequence.

Institutional Core Competencies

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 Competencies

1. **Apply the general concepts of pathophysiology for the assessment and management of emergency patients.**

   Learning Objectives
   Apply concepts to scenario based testing.
   Describe assessment in practical anatomical terms

2. **Integrate the physiological, psychological, and sociological changes throughout human development with assessment and communication strategies for patients of all ages.**

   Learning Objectives
   Apply concepts to scenario based testing.
   Compare assessment differences in various age groups.

3. **Discuss the relevance of understanding human body system function and structure to conditions commonly found in the field.**

Learning Objectives
Describe basic descriptive terms, key positional terms and definitions of anatomy and physiology
Name the body cavities, their membranes, and examples of organs within each cavity
Explain the four quadrants of the abdomen and name the organs in each
Apply anatomical concepts and pathophysiology to scenarios.

4. Discuss the relevance of understanding cell function and structure to conditions commonly found in the field.

Learning Objectives
Explain isotonic, hypotonic, and hypertonic solutions and their effects on the cell
Define each of these cellular transport mechanisms.
Describe four major categories of tissues and give general characteristics of each
Apply anatomical concepts and pathophysiology to scenarios.

5. Discuss the relevance of understanding skeletal system function and structure to conditions commonly found in the field.

Learning Objectives
Explain how bones are classified and give an example of each
Identify the two major subdivisions of the skeleton and list the bones in each area
Explain how joints are classified; give an example of each and describe the movement possible
Apply anatomical concepts and pathophysiology to scenarios.

6. Discuss the relevance of understanding the muscle system function and structure to conditions commonly found in the field.

Learning Objectives
Explain polarization, depolarization, and repolarization in terms of ions and charges.
State the major muscles of the body and their functions.
Describe the difference between antagonistic and synergistic muscles.
Apply anatomical concepts and pathophysiology to scenarios.

7. Discuss the relevance of understanding the circulatory system function and structure to conditions commonly found in the field.

Learning Objectives
Describe the location and parts of the heart in terms of body cavities and relationship to other structures and function.
Explain stroke volume, cardiac output, and Starling's law of the heart
Describe systemic, coronary, and pulmonary circulation.
Apply anatomical concepts and pathophysiology to scenarios.

8. Discuss the relevance of understanding The Lymphatic and Immune system function and structure to conditions commonly found in the field.

Learning Objectives
Describe the functions of the lymphatic system
Define types of immunity
List some important infectious diseases found in prehospital care
Apply anatomical concepts and pathophysiology to scenarios.

9. Discuss the relevance of understanding The Respiratory system function and structure to conditions commonly found in the field.

Learning Objectives
State the general function and structure of the respiratory system
Describe how oxygen and carbon dioxide are transported in the blood
Explain the nervous and chemical mechanisms regulating respiration
Apply anatomical concepts and pathophysiology to scenarios.

10. Discuss the relevance of understanding The Nervous system function and structure to conditions commonly found in the field.

Learning Objectives
Name the divisions of the nervous system and state the general functions of each
Describe the electrical nerve impulse and impulse transmission at the synapse
State the functions of the parts of the brain and locate each part on a diagram
Apply anatomical concepts and pathophysiology to scenarios.

11. Discuss the relevance of understanding The Gastrointestinal system function and structure to conditions commonly found in the field.

Learning Objectives
Describe the general function of the digestive system
Describe the structure and function of the teeth and tongue
Identify the accessory organs of digestion
Apply anatomical concepts and pathophysiology to scenarios.

12. Discuss the relevance of understanding Body Fluids Balance, Metabolism, and Urinary System function and structure to conditions commonly found in the field.

Learning Objectives
Describe the location and general function of each urinary system
Describe how the kidneys help to maintain normal blood pH and electrolyte balance
Define metabolism, catabolism, anabolism, basal metabolic rate, kilocalories, and glomerular filtration rate
Apply anatomical concepts and pathophysiology to scenarios.

13. Discuss the relevance of understanding Human Genetics and The Reproductive System function and structure to conditions commonly found in the field.

Learning Objectives
List the essential and accessory reproductive organs of the male and female, and give the general functions of each
Describe the stages of labor
Explain how genes can cause disease.
Apply anatomical concepts and pathophysiology to scenarios.

14. Discuss the relevance of understanding The Endocrine system function and structure to conditions commonly found in the field.

Learning Objectives
Define endocrine glands, exocrine glands, hormone, and prostaglandin
Describe the relationship between insulin and glucagon
Explain how protein hormones and steroid hormones are believed to exert their effects
Apply anatomical concepts and pathophysiology to scenarios.

15. Discuss the relevance of understanding Integumentary system function and structure to conditions commonly found in the field.

Learning Objectives
State the three functions of the integumentary system
Describe how the arterioles in the dermis respond to heat, cold, and stress
Name the tissues that make up the subcutaneous tissue and describe their functions
Apply anatomical concepts and pathophysiology to scenarios.

16. Discuss the relevance of understanding Special Sensory system function and structure to conditions commonly found in the field.

Learning Objectives
Name the parts of the sensory pathway and the general functions of each part
Explain referred pain and its importance to out-of-hospital care
Name the parts of the eye and ear and explain their function.
Apply anatomical concepts and pathophysiology to scenarios.

SCC Accessibility Statement

South Central College strives to make all learning experiences as accessible as possible. If you have a disability and need accommodations for access to this class, contact the Academic Support Center to request and discuss accommodations. North Mankato: Room B-132, (507) 389-7222; Faribault: Room A-116, (507) 332-7222.

Additional information and forms can be found at: www.southcentral.edu/disability

This material can be made available in alternative formats by contacting the Academic Support Center at 507-389-7222.