

Anatomy and Physiology

Course Summary:

In this course, the student will learn about anatomical structures and physiology of the human body. Body systems are discussed in terms of how each participates in homeostasis of the body. Students learn about selected major pathologies, including causes, symptoms, diagnostic procedures, and treatments, as well as common changes that occur through the life span.

Course Outline

1. Body Structure and Organization
 - Define homeostasis and its importance to the human body
 - Outline the levels of organization of the body, including the body systems
 - Identify the structures and functions of the organelles of a typical human cell
 - Describe body planes, cavities, regions, and directional terms
2. Integumentary System
 - Explain the functions of the skin, including its contribution to homeostasis
 - Identify the anatomical structures of the skin
 - Describe selected integumentary system diseases
 - Describe issues and changes related to the integumentary system at different points in the life span
3. Skeletal System: Organization, Structure, and Function
 - Describe the organization of the skeletal system
 - Explain the functions of bone, including its contribution to homeostasis
 - Identify the anatomical structures of the skeletal system, including the major bones of the body
4. Skeletal System Disorders
 - Describe selected skeletal system diseases and disorders
 - Describe issues and changes related to the skeletal system at different points in the lifespan
5. The Muscular System
 - Identify the anatomical structures of the muscular system, including the major muscles of the body
 - Explain the basic concept of muscle contraction
 - Describe how the muscular system contributes to homeostasis of the body
 - Describe selected muscular system diseases and disorders
 - Describe issues and changes related to the muscular system at different points in the lifespan
6. The Nervous System and Special Senses
 - Describe the organization of the nervous system and how the nervous system contributes to homeostasis
 - Identify the anatomical structures of the nervous system and special senses and their functions
 - Explain how an electrical impulse is conducted through a nerve
7. The Cardiovascular System: Heart and Blood Vessels
 - Identify the anatomical structures of the cardiovascular system
 - Explain how blood flows through the heart, lungs, and body
 - Describe the electrical conduction system of the heart

- Explain the cardiac cycle, including how the cardiovascular system contributes to the homeostasis of the body
- Describe the different types of blood vessels and their function

8. The Cardiovascular System: Blood and Disorders

- Describe the composition and functions of blood
- Describe selected cardiovascular system diseases and disorders
- Describe issues and changes related to the cardiovascular system at different points in the lifespan

9. The Immune System

- Identify the anatomical structures of the immune system
- Describe how immunity works
- Explain how the immune system contributes to the homeostasis of the body
- Describe selected immune system diseases and disorders
- Describe issues and changes related to the immune system at different points in the lifespan

10. The Respiratory System

- Identify the anatomical structures of the respiratory system and their functions
- Explain the mechanics of breathing and internal and external respiration
- Explain how the respiratory system contributes to the homeostasis of the body

11. Common Disorders of the Respiratory System

- Describe selected respiratory system diseases and disorders
- Describe issues and changes related to the respiratory system at different points in the lifespan

12. The Digestive System

- Identify the anatomical structures of the digestive system and their functions
- Explain the physiology of digestion through the system
- Explain how the digestive system contributes to the homeostasis of the body
- Describe selected digestive system diseases and disorders
- Describe issues and changes related to the digestive system at different points in the lifespan

13. The Urinary System

- Identify the anatomical structures of the urinary system and their functions
- Describe the composition of urine and the physiology of the urinary system
- Explain how the urinary system contributes to the homeostasis of the body
- Describe selected urinary system diseases and disorders
- Describe issues and changes related to the urinary system at different points in the lifespan

14. The Endocrine System, Part 1

- Identify the anatomical structures and the functions of the endocrine system
- Describe selected endocrine system diseases and disorders

15. The Endocrine System, Part 2

- Identify the anatomical structures and the functions of the endocrine system
- Describe selected endocrine system diseases and disorders
- Explain how the endocrine system contributes to the homeostasis of the body

16. The Female Reproductive System

- Identify the anatomical structures of the female reproductive system
- Describe selected female reproductive system diseases and disorders
- Describe issues and changes related to the reproductive system at different points in the lifespan
- Explain the menstrual cycle and the physiology of reproduction
- Explain pathologies and diagnostic procedures related to pregnancy

17. The Male Reproductive System

- Identify the anatomical structures of the male reproductive system
- Describe selected male reproductive system diseases and disorders
- Describe issues and changes related to the reproductive system at different points in the lifespan

18. Anatomy and Physiology Final Exam