

Anatomy & Physiology I (4612) Course Overview Curriculum Document

Course Description

Basic concepts of human anatomy and physiology will be explored in this health (life) science focused course. Using a systems approach, students will learn about the interrelationships between structure and function of the body and the mechanisms needed to maintain homeostasis. Anatomy & Physiology I will cover the following human body systems: muscular/skeletal, nervous, and cardiovascular/respiratory.

Credits

0.5

Prerequisites

4110 Biology

Board Approved

June 2007, June 2023

Revised

May 2023

Required Assessments

District Common Summative Assessments

Textbooks/Resources

Welsh, C. J. (2021). *Hole's essentials of human anatomy and physiology*. [Second Edition]. McGraw Hill Education.
ISBN: 978-1-260-25134-0

Course Essential Understandings

As a result of successfully completing this course, students will understand:

- Form to function - how organs/organs systems are structured allow them to carry out their functions
- Homeostasis - mechanisms for body to maintain proper ranges of internal environmental conditions
- Interconnectedness of systems - no system works in isolation
- Understanding individual health and wellness - how aging, injury, and disease affect the proper functioning of the body

Course Relevance Questions

Why is there a need for homeostasis and how does the structure and function of organs and systems support homeostasis?

Unit Overviews

Unit Name	Unit Description	Unit Relevance Question	Instructional Standards	Assessed Standards
Introduction	This unit introduces students to levels of cellular organization in the human body, the process and purpose of homeostasis, and terminology related to anatomy, direction, and position as used by medical professionals. Students generate models, perform experiments.	How is the body organized? Why does the body need to maintain homeostasis? How would someone in medicine describe location/parts of the human body?	NHSS 1.1. Describe the organization of the human body and directional terms 1	NHSS 1.1.1 Describe the organization of the human body and directional terms
Muscular/Skeletal	Students experiment to identify and describe the function of major muscles, bones, and joints in the human body. Students explain the mechanism of muscle contraction and the effect of aging and injury on the musculoskeletal systems.	How do the muscular and skeletal systems work together to allow for bodily movement? How do muscular and skeletal systems help the body maintain homeostasis? How does skeletal muscle contraction aid in movement?	NHSS 1.1.2a/b Identify basic structures and describe functions of the musculoskeletal system. NHSS 1.2.1 Describe etiology, pathology, diagnosis, treatment, and prevention of common diseases and disorders.	NHSS 1.1.2a/b Identify basic structures and describe functions of the musculoskeletal system. NHSS 1.2.1 Describe etiology, pathology, diagnosis, treatment, and prevention of common diseases and disorders.
Nervous	Students describe the structure and physiology of the major parts of the nervous system and neuron, as well as the effects of injury, disease, and environmental factors on the nervous system.	How does the nervous system help the body to maintain homeostasis? How do the central nervous system and the peripheral nervous system communicate? How does the structure of the neuron relate to its function? What is the connection between the nervous system and the senses?	NHSS 1.1.2g Identify basic structures and describe functions of the nervous system. NHSS 1.2.1 Describe etiology, pathology, diagnosis, treatment, and prevention of common diseases and disorders.	NHSS 1.1.2g Identify basic structures and describe functions of the nervous system. NHSS 1.2.1 Describe etiology, pathology, diagnosis, treatment, and prevention of common diseases and disorders.
Integumentary	Students model and experimentally explore the structure/function of hair, skin, nails and glands. They then explain the effects of aging on the integumentary system.	What is the skin's role in maintaining homeostasis? How does the endocrine and integumentary system work together?	NHSS 1.1.2c Identify basic structures and describe functions of the integumentary system	NHSS 1.1.2d/f Identify basic structures and describe functions of the integumentary system.

		What are the effects of aging and the environment on the integumentary system?	NHSS 1.2.1 Describe etiology, pathology, diagnosis, treatment, and prevention of common diseases and disorders.	NHSS 1.2.1 Describe etiology, pathology, diagnosis, treatment, and prevention of common diseases and disorders.
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