

# Anatomy & Physiology II (4613) 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. Anatomy & Physiology II will cover the following human body systems: Blood/Immune/ Lymphatic, Digestive, Urinary, Endocrine/ Reproductive, and Integumentary.

### Credits

0.5

### Prerequisites

4110 Biology

### Board Approved

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 reviews 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 and 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 1.1.1 Describe the organization of the human body and directional terms  NHSS 1.2.1 Describe etiology, pathology, diagnosis, treatment, and prevention of common diseases and disorders.	NHSS 1.1.1 Describe the organization of the human body and directional terms  NHSS 1.2.1 Describe etiology, pathology, diagnosis, treatment, and prevention of common diseases and disorders.
Cardiovascular/ Respiratory	Students describe the general structure and function of the circulatory and respiratory systems. Students explain the function of these systems in maintaining homeostasis and how the failure of these homeostatic mechanisms can result in damage or disease.	What roles do the respiratory and circulatory systems play in maintaining homeostasis?  How does the structure of the respiratory system relate to its function?  How does the endocrine system affect the respiratory and cardiovascular system?	NHSS 1.1.2d/f Identify the basic structures and describe the functions of the cardiovascular and respiratory systems.  NHSS 1.2.1 Describe etiology, pathology, diagnosis, treatment, and prevention of common diseases and disorders	NHSS 1.1.2d/f Identify the basic structures and describe the functions of the cardiovascular and respiratory systems.  NHSS 1.2.1 Describe etiology, pathology, diagnosis, treatment, and prevention of common diseases and disorders
Blood/Immune/ Lymphatic	Students describe the structure and function of the major parts of the blood, immune and lymphatic systems. Students explain how the organs of the immune and lymphatic systems help maintain homeostasis. Students analyze case studies to argue the health of an individual. Students evaluate an	How do the lymphatic and immune systems help the body maintain homeostasis?	NHSS 1.1.2e Identify basic structures and describe functions of the	NHSS 1.1.2e Identify basic structures and describe functions of the

	epidemic or public health crisis to generate a solution to the problem.	<p>What is the relationship between the lymphatic, immune, and endocrine systems?</p> <p>How do the structures of the lymphatic and immune systems relate to their functions?</p> <p>What are the main components, characteristics and major functions of blood?</p>	<p>Lymphatic/Immune system.</p> <p>NHSS 1.1.2d Distinguish blood components Transports nutrients, waste, antibodies, hormones, and gases</p> <p>NHSS 1.2.1 Describe etiology, pathology, diagnosis, treatment, and prevention of common diseases and disorders.</p>	<p>Lymphatic/Immune system.</p> <p>NHSS 1.1.2d Distinguish blood components Transports nutrients, waste, antibodies, hormones, and gases</p> <p>NHSS 1.2.1 Describe etiology, pathology, diagnosis, treatment, and prevention of common diseases and disorders.</p>
Digestive	Students describe the structure and function of the major parts of the digestive system. Students explain how the organs of the digestive system help maintain homeostasis through experimentation and modeling.	<p>How does the digestive system help the body to maintain homeostasis?</p> <p>What is the relationship between the endocrine and digestive systems?</p> <p>How does the structure of the organs of the digestive system relate to their functions?</p>	<p>NHSS 1.1.2i Identify basic structures and describe functions of the Digestive system.</p> <p>NHSS 1.2.1 Describe etiology, pathology, diagnosis, treatment, and prevention of common diseases and disorders.</p>	<p>NHSS 1.1.2i Identify basic structures and describe functions of the Digestive system.</p> <p>NHSS 1.2.1 Describe etiology, pathology, diagnosis, treatment, and prevention of common diseases and disorders.</p>
Urinary	Students describe the structure and function of the major parts of the urinary system. Through experimentation, students analyze urinalysis results to identify metabolic disorders.	<p>How does the urinary system help the body to maintain homeostasis?</p> <p>What is the relationship between the endocrine and urinary systems?</p> <p>How does the structure of the nephron relate to its function?</p>	<p>NHSS 1.1.2j Identify basic structures and describe functions of the urinary system.</p> <p>NHSS 1.2.1 Describe etiology, pathology, diagnosis, treatment, and prevention of common diseases and disorders.</p>	<p>NHSS 1.1.2j Identify basic structures and describe functions of the urinary system.</p> <p>NHSS 1.2.1 Describe etiology, pathology, diagnosis, treatment, and prevention of common diseases and disorders.</p>
Endocrine/ Reproductive	Students describe the structure and function of the major parts of the endocrine and reproductive systems. Students model and explain how the organs of the endocrine and reproductive systems help maintain homeostasis.	<p>How does the endocrine system help the body maintain homeostasis?</p> <p>What is the relationship between the reproductive and endocrine systems?</p> <p>How do the structures of the reproductive and endocrine systems relate to their functions?</p>	<p>NHSS 1.1.2h Identify basic structures and describe functions of the Endocrine system.</p> <p>NHSS 1.1.2.k Identify basic structures and describe functions of the Reproductive system.</p> <p>NHSS 1.2.1 Describe etiology, pathology, diagnosis, treatment, and prevention of common diseases and disorders.</p>	<p>NHSS 1.1.2h Identify basic structures and describe functions of the Endocrine system.</p> <p>NHSS 1.1.2.k Identify basic structures and describe functions of the Reproductive system.</p> <p>NHSS 1.2.1 Describe etiology, pathology, diagnosis, treatment, and prevention of common diseases and disorders.</p>