

# AOHS Foundations of Anatomy and Physiology II

## Course Scope and Sequence

*July 2016*

Foundations of Anatomy and Physiology II is the second in a set of two semester-long lab courses that introduce students to basic anatomy and physiology. It builds on the knowledge and skills students developed during the first semester as it teaches students about the following body systems: cardiovascular, respiratory, lymphatic system and immunity, digestive, urinary, and reproductive. This course uses a wide range of assessment products in addition to quizzes and exams to evaluate students' mastery of the material.

The course project requires students to build models and conduct demonstrations that illustrate an anatomical or physiological function of the human body that they learned about in A&P I and II. The driving question is, "How can we model or demonstrate a function in human anatomy and physiology?" In small groups, students research the function they chose and use everyday, inexpensive materials to build their models. They also create a trifold display board with text and visuals that describe the anatomy involved in the function, how their model shows the function, and one of several other topics related to the function. Students show their work at an A&P Exploratorium that is attended by invited guests.

This course is expected to take a total of 63 50-minute class periods to complete.

### Lesson 14: The Cardiovascular System

Estimated # of Class Periods: 7

#### Learning Objectives

- Describe the components of blood, the determinants of blood types, and the compatibilities of the different blood types
- Compare and contrast the anatomical and functional differences between arteries, veins, and capillaries
- Identify the major arteries and veins
- Explain the major functions of the cardiovascular system and its structures
- Identify and describe the structures of the heart
- Display understanding of the path by which blood flows through the heart
- List the phases of the cardiac cycle and describe what is happening in each
- Describe blood disorders and major diseases and abnormalities of the cardiovascular system
- Describe how diet and exercise can be used to optimize cardiovascular health

### Lesson 15: The Respiratory System

Estimated # of Class Periods: 5

#### Learning Objectives

- Identify and describe the structures of the respiratory system
- Explain the major functions of the respiratory system and its structures
- Explain the process of gas exchange and respiration

## AOHS Foundations of Anatomy and Physiology II Course Scope and Sequence

- Describe the health effects of smoking
- Explain how common disorders of the respiratory system affect normal function

### Lesson 16: The Immune System

Estimated # of Class Periods: 10

#### Learning Objectives

- Describe the body's defenses that make up nonspecific and specific immunity
- Explain the role of the structures and cells of the lymphatic system in immune function
- Identify the organs of the lymphatic system
- Describe the process of phagocytosis
- Explain how diseases and disorders of the immune system, including AIDS and autoimmunity, affect normal function
- Describe the role of the immune system in allergic reactions
- Identify lifestyle conditions that contribute to the maintenance of a healthy immune system

### Lesson 17: Midterm Exam

Estimated # of Class Periods: 2

#### Learning Objectives

- Identify topics and concepts that he or she needs to study
- Describe effective ways to study for taking an exam
- Describe effective ways to gain greater understanding of a particular concept
- Demonstrate the ability to take an exam

### Lesson 18: The Digestive System

Estimated # of Class Periods: 10

#### Learning Objectives

- Identify the parts of the digestive system
- Explain the major functions of the digestive system and its structures
- Describe the process of digestion
- Describe the roles and metabolism of major nutrients
- Describe the basic food groups and sources of dietary nutrients
- Describe common disorders of the digestive system

### Lesson 19: The Urinary System

Estimated # of Class Periods: 8

#### Learning Objectives

## AOHS Foundations of Anatomy and Physiology II

### Course Scope and Sequence

- Identify the organs and structures of the urinary system
- Explain the functions of the organs and structures of the urinary system
- Summarize the three main renal processes of filtration, reabsorption, and secretion
- Describe fluid and electrolyte balance and the role of the endocrine system
- Describe the common disorders of the urinary system
- Display understanding of the process of kidney dialysis

### Lesson 20: The Reproductive System

Estimated # of Class Periods: 10

#### Learning Objectives

- Identify the organs and structures of the human reproductive system
- Explain the functions of the organs and structures of the human reproductive system
- Summarize the phases of the menstrual cycle
- Describe the process of fertilization, including the roles of cells and chromosomes
- List genetic conditions that are inherited
- Explain various contraceptive methods and how they work
- Characterize common sexually transmitted diseases (STDs) and explain how they are transmitted
- Describe the main characteristics of each phase of the human life span

### Lesson 21: Course Project

Estimated # of Class Periods: 9

#### Learning Objectives

- Demonstrate the ability to conduct informational research on a physiological function
- Demonstrate the ability to create a model or demonstration that illustrates a physiological function
- Demonstrate the ability to present their work to an invited audience

### Lesson 22: Final Exam

Estimated # of Class Periods: 2

#### Learning Objectives

- Monitor how well he or she is prepared to take a final exam in anatomy and physiology
- Demonstrate knowledge of anatomy and physiology through a final exam