

Course Syllabus

Description: Take a deep breath. Though we may take seemingly effortless functions of the body such as breathing for granted, the human body is constantly working as a system to maintain balance and good health. Anatomy and Physiology will give you a better understanding of the structure and functions of the human body. This course presents topics, such as immunity, reproduction, cardiovascular health, and musculoskeletal functions, using 21st-century content, graphics, interactives, and videos. Students will be inspired by real-world phenomena about health topics and career connections opportunities from entry-level positions to the doctoral level. In each module of Anatomy and Physiology, students explore the organization of the human body and how each organ and body system functions and interacts. Students acquire the knowledge necessary to understand the body's internal functions and interconnections and what is necessary to maintain overall health and wellness.

Estimated Completion Time: 2 Segments / 32–36 weeks

Major Topics and Concepts:

Segment One

- Explain what characterizes science and its methods related to anatomy and physiology
- Compare and classify the four types of tissues
- Describe the function of the vertebrate integumentary system
- Evaluate the impact of biotechnology on the individual, society, and the environment
- Distinguish between bones of the axial skeleton and the appendicular skeleton
- Identify major markings on a skeleton and explain why these markings are important
- Describe the anatomy and histology of muscle tissue
- Explain the physiology of skeletal muscle
- Explore the steps involved in the sliding filament of muscle contraction
- Identify components and functions of the central and peripheral nervous systems
- Identify the major parts of the brain on diagrams or models
- Explore the structure and interactions of vertebrate sensory organs
- Describe the physiology of nerve conduction
- Relate how hormones interact with different body systems
- Describe the anatomy and physiology of the endocrine system

Segment Two

- Explore the anatomy and physiology of the respiratory system
- Analyze how heredity and family history can impact personal health
- Explain the components of an electrocardiogram
- Describe the physiology of the digestive system
- Identify and explore the structures of fatty acids, triglycerides, phospholipids, and steroids
- Explain the structures and reactions of proteins and amino acids in living organisms
- Explain the role of enzymes as catalysts that lower the activation energy of biochemical reactions
- Describe the histology of the alimentary canal and its associated accessory organs
- Explain the basic functions of and biotechnology associated with the human immune system
- Describe the anatomy and the physiology of the lymph system
- Analyze strategies for prevention, detection, and treatment of communicable and chronic diseases
- Describe the basic anatomy and physiology of the reproductive system
- Analyze fetal circulation and changes that occur to the circulatory system at birth
- Describe the basic anatomy and physiology of the human reproductive system

To achieve success, students are expected to submit work in each course weekly. Students can learn at their own pace; however, "any pace" still means that students must make progress in the course every week. To measure learning, students complete self-checks, practice lessons, multiple choice questions, projects, discussion-based assessments, and discussions. Students are expected to maintain regular contact with teachers; the minimum requirement is monthly. When teachers, students, and parents or guardians work together, students are successful.