

Montclair High School

Course Syllabus

Department: Science

Course: Anatomy and Physiology I

Level: Honors and A&P-SHU

Credits:6

Course Description:

Anatomy and Physiology I (A&P) is a rigorous college-level course designed for students interested in careers in health care or science. The goal of this course is to provide students with a solid foundation of human anatomy and physiology. The course will focus on 1) structure-function relationships of molecules, cells, tissues and organs, 2) homeostasis, and 3) interrelationships of the body's organ systems. Students will research pathological/diseased states of each organ system covered in the course to better understand how the fundamental principles above apply to the human body. Students will also learn histology through observing prepared slides, use anatomical models to learn organ systems, and carry out various lab activities to better understand human physiology. Students have the option of contracting up to A&P-SHU, which is weighted the same as an Advanced Placement course.* Students may enroll in Project Acceleration through Seton Hall University (SHU) to receive four college credits from SHU. In addition, all students earn volunteer hours by organizing a Red Cross blood drive with a focus on education of potential donors as well as volunteer at "Give Kids a Smile Day" through the Kindersmile Foundation.

Standards:

NGSS HS-LS1-1, HS-LS1-2 HS-LS1-3, HS-LS1-4, HS-LS4-4

Anchor Text(s):

Text Title	Publisher/Author	Year/Edition	ISBN	Text Distribution
Human Anatomy & Physiology	Pearson/Elaine N. Marieb, Katja N. Hoehn	10 th edition/2015	0321927028	Hard copy to each student and access to e-text

Supplementary Materials:

Laboratory manuals, educational videos, Internet activities, articles from journals, other textbooks, magazines and newspapers.

Units of Study:

- Anatomical terminology
- Cells and cellular metabolism
- Tissues
- Integumentary system
- Skeletal system/joints
- Muscular systems
- Nervous system (does not include special senses)
- Blood and cardiovascular system
- Respiratory
- Lymphatic and immune system

Proficiencies:

By the end of this course, students will:

1. Use anatomical terms to describe/locate anatomical features.
2. Explain the critical relationship between biology and chemistry.
3. Demonstrate the mastery of safe laboratory techniques including the compound light microscope, model building, investigations, identification and dissection of representative organisms.
4. Explain and compare the various components of the cell in terms of structure and functions and overall cellular processes.
5. Describe the major steps and importance of cellular respiration.
6. Identify the four basic tissue types and subsequent subtypes under a microscope. Refer back to these tissue types in each organ system studied.
7. Identify and describe the anatomical landmarks of the integumentary, skeletal, muscular, nervous, blood/cardiovascular, respiratory, lymphatic and immune system.
8. Describe the physiological functions of the systems listed above and relate form and function.
9. Demonstrate mastery of anatomical features of tissue types, bones, skeletal muscles, the nervous system and cardiovascular system through laboratory practicals using prepared slides, articulated and disarticulated skeletons, models of the arm/leg/brain/heart and images.
10. Research and describe various diseases and pathological conditions of the various systems.
11. Dissect and identify anatomical structures of a sheep heart, brain and fetal pig.

Evaluation & Assessment:

- Test/quizzes 70%
- Lab work, classwork, sprojects 20%
- Homework 10%

Prior to beginning any lab activities, all students must have submitted a Safety Contract which has been duly signed by both the student and their parent/guardian. This contract will be kept on file by the teacher for the duration of the course.