

Plymouth Public Schools' Science and Technology/Engineering Program Honors Anatomy and Physiology Course Syllabus

STE1012 Human Anatomy & Physiology Honors

Full year course intended for students in grades 10 through 12 worth 5 credits

Course Description

This laboratory course will focus on all aspects of the human body, with emphasis on their interrelationships and regulation. Normal functioning is studied, as are the diseases that result when such functions break down. There is an extensive laboratory program emphasizing the relationship between structure and function in mammals. This course is recommended for those who desire a career in the medical field and plan on attending a four-year college or university. The prerequisites include successful completion of Biology, completion/enrollment in Chemistry, and departmental recommendation.

Instructional Objectives

Students will independently and collaboratively:

1. Engage in scientific inquiry and engineering design through the use of science and engineering practices.
2. Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to answer a question or solve a problem.
3. Draw evidence from literary or informational texts to support analysis, reflection, and research.
4. Produce clear and coherent writing in which the development, organization and style are appropriate to task, purpose and audience.
5. Demonstrate proficiency in phenomena related to the structures and processes of the human body from molecules to organ systems and the interrelationships between these processes within the human body.

Themes and Topics

1. Structures and Processes of the Human Body
 - A. Cells have specific structures and functions that make them distinctive. Processes in a cell can be classified broadly as growth, maintenance, and reproduction (e.g., organelles, prokaryotes, eukaryotes, ATP, metabolism, mitosis, meiosis, virus). Cells communicate with each other.
 - B. There is a relationship between the organization of cells into tissues and the organization of tissues into organs. The structures and functions of organs determine their relationships within body systems of an organism. Systems include: cardiovascular, digestive, integumentary, muscular, nervous, respiratory, skeletal, urinary, endocrine, lymphatic/immune, and reproductive.

2. Interrelatedness Between Processes

All systems in the body must be in relative balance to perform normal functions.

Homeostasis is based on the properties of matter (specifically molecules, ions, and atoms) and the ability of chemicals to bond with each other.

Text and Instructional Materials

Martini, F., Nath, J., and Bartholomew, E. *Fundamentals of Anatomy & Physiology, 9th Edition*. San Francisco, CA: Pearson Benjamin Cummings, 2012.

Cheating/Plagiarism

The excerpt from the Plymouth Public Schools' Student Handbook on plagiarism and copyright infringement states, "Existing copyright law will govern the use of material accessed through network. The user will not plagiarize works found on the Internet. Plagiarism is taking the ideas or writings of others and presenting them as if they were yours. All copyrighted material used must have the express written permission of the person or organization that owns the copyright. Any student who has cheated on any academic exercise will receive no credit for that exercise. Plagiarism is a form of cheating. A parent/guardian will be notified by the involved teacher in all instances of cheating. The investigation of the claim of cheating and plagiarism will involve the student, teacher, and administration."

Grading Policy and Assessment

Levels of proficiency on various tasks and assignments determine student grades. During each grading term, students' grades will be based upon the following:

30% Class Work

70% Assessments

The final year average will be calculated as follows:

22.5% Term 1 Grade

22.5% Term 2 Grade

22.5% Term 3 Grade

22.5% Term 4 Grade

10% Final Exam