

# Plymouth Public Schools' Science and Technology/Engineering Program

## Human Body Systems Course Syllabus

STE1042 Human Body Systems Honors

STE1043 Human Body Systems CP1

Full year course intended for 10<sup>th</sup> grade students worth 5 credits

### Course Description

In this laboratory course students examine the interactions of human body systems as they explore identity, power, movement, protection, and homeostasis. Exploring science in action, students build organs and tissues on a skeletal manikin; use data acquisition software to monitor body functions such as muscle movement, reflex and voluntary action, and respiration; and take on the roles of biomedical professionals to solve real-world medical cases. The prerequisites include a passing grade in Principles of Biomedical Sciences and Biology; 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 living things from molecules to organisms; the interactions, energy, and dynamics of ecosystems; the inheritance and variation of traits in heredity; matter and its interactions; the motion and stability of forces and their interactions; energy; and engineering design.

### Themes and Topics

1. Identity: what does it mean to be human; commonalities between all humans (e.g., body systems functions); individual differences in tissues (e.g., bone, muscle) and molecules/cells (e.g., DNA)
2. Communication: modes of communication within the human body (e.g., brain, electrical communication, chemical communication); ways the human body communicates with the outside world
3. Power: human body systems that obtain, distribute, or process body's primary resources for energy and power (e.g., food, oxygen, water)

4. Movement: movement of human body (e.g., joints, muscles); movement of substances within the body (e.g., blood flow)
5. Protection: ways in which the human body protects itself from injury and disease (e.g., skin, bones, lymph and blood cells)
6. Homeostasis: connections between all of the human body systems; examination of how systems work together to maintain health and homeostasis

#### Text and Instructional Materials

[My PLTW](#) is used for communications and activities related to this course

#### 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% Homework
- 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

Please note that instructors will differentiate course work for students in Honors and College Prep. This will include, but not be limited to assessments and individual/group assignments.