Plymouth Public Schools' Science and Technology/Engineering Program College Prep 2 Earth Science Course Syllabus

STE0044 Earth Science College Prep 2

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

Course Description

This laboratory course focuses on how the Earth's systems – the rocks beneath one's feet, the oceans in which one swims, and the air surrounding – interact to form the hospitable planet Earth. The course examines how human actions are fundamentally altering the processes, which have shaped the Earth over its 4.5 billion year history. In the first part of the course, students will examine the Earth system and how it has evolved over time. In the second part of the course, students will examine the system's interactions with human society. Students will learn how the actions of one generation will affect the climate during the lifetimes of subsequent generations. Students will also consider the responsibility that each generation has to leave a habitable climate for the next. The prerequisite includes 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 Earth's place in the universe, Earth's systems, and Earth and human activity.

Themes and Topics

1. Astronomy – the study of matter in outer space, including nuclear fusion, composition, energy, and evolution of celestial bodies and phenomena; astronomical evidence for Big Bang Theory; orbiting objects in the solar system, especially the positions, dimensions, distribution, motion, composition, and energy
2. Forces Within – phenomena relative to plate tectonics, mountain ranges, volcanoes, and earthquakes; energy transformations in the Earth's crust; changes in topography and geography of the continents and ocean basins by both constructive and destructive processes
3. Sculpting the Earth's Surface – Earth is a dynamic interconnected system; the chemical and physical properties of water continuously alter the topography and geography of continents

4. Resources and Energy – availability of key natural resources and minimizing impacts of developing and using energy and mineral resources
5. Weather and Climate – societal impacts of climate on activity planning, building and infrastructure design, and anticipation of the effects of adverse conditions caused by changes in climate
6. Human Impact – impacts on biophysical environments, biodiversity, and other resources

Text and Instructional Materials

Tarbuck, Edward J, Frederick K. Lutgens, and Dennis Tasa. *Prentice Hall Earth Science*. Boston, MA: Pearson Prentice Hall, 2009.

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 and Homework
70% Assessments: formal lab reports, major projects and writing assignments, quizzes, unit tests, etc.

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