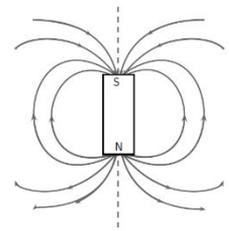




11th & 12th Grade Science Options at PSHS



Anatomy & Physiology - Anatomy & Physiology is a fast-paced, project based science course that requires independent learning, strong time management skills and memorization. Students describe the structures and functions of each body system independently in order to integrate each system and explain their interdependent relationships. Assessments are a mixture of projects, labs, reading comprehension questions, online quizzes and dissections.

AP Biology - This class is designed to be the equivalent of an introductory college-level biology course. It is the study of cellular processes, DNA interactions, evolution, biodiversity and animal form and function. Laboratory investigations include DNA recombination (making a bacteria glow like a jellyfish), gel electrophoresis, studying animal behavior and dissection. Requires 2-3 hours per week outside of class time for additional studying. *(This is an advanced course that does not have a lower level option to drop down to. It is taught over two class periods each day.)*

AP Chemistry - This course is the first year of college chemistry with all the expectations that a college chemistry course demands. Some topics included are thermochemistry, chemical bonding, kinetics, equilibrium, and electrochemistry. Taught from a “lab first” point of view, usually in lab based activities 3 hours per week. Requires 2-3 hours per week outside of class time for additional studying. *(This is an advanced course that does not have a lower level option to drop down to. It is taught over two class periods each day.)*

ENVIRONMENTAL SYSTEMS - Environmental Systems is designed to give students an introduction to the major environmental problems facing the world and their causes. Students become more aware of the environment and how they are part of the problem and the solution. Emphasis on people and society, including cultural perspectives and pollution problems will be made.

AP Environmental Science - APES is a project based course where students will conduct field and laboratory investigations and make informed decisions using critical thinking and scientific problem solving, perform mathematical calculations, write analytical essays and research and discuss current happenings dealing with the environment. APES is interdisciplinary, focusing on many branches of science as well as sociological, economic and political aspects.

Earth & Space Science - Earth and Space Science is based on Earth's system in space and time. The approach has three themes- Earth in space and time, solid Earth, and fluid Earth. Natural and human events and their effect on Earth's systems will be studied within the context of the three themes and strands. *(Recommended for students who have taken Physics.)*

Food Science – Food Science is a laboratory course exploring the biochemistry of foods. The course covers fundamental chemistry practices and relates that to food chemistry. Other topics include microbiology, proteins, nutrition, digestion, enzymes, energy and more. Cooking is limited to 3-4 times per nine weeks. Students will explore and learn the value of a properly written lab report. *(Space is limited, choose a backup science class in case this one doesn't fit your schedule.)*

Physics - Students are introduced to concepts in the areas of mechanics, light, sound, heat, electricity, magnetism, and nuclear phenomena. Student investigations emphasize accurate observations, collection of data, analysis of data, and the safe manipulation of laboratory materials. There is math involved, we recommend you be in Algebra 2 or higher. (*Students planning to attend a 4-year college or university should strongly consider taking Physics before graduation.*)

Physics Honors - Students are introduced to concepts in the areas of mechanics, light, sound, heat, electricity, magnetism, and nuclear phenomena. Student investigations emphasize accurate observations, collection of data, analysis of data, and the safe manipulation of laboratory materials. Emphasis will be placed on the use of mathematics in formulating physical principles and in problem solving; thus a strong math background is necessary. We recommend you be enrolled in Precalculus.

AP Physics 1/2 - This course is designed to be the college freshman level physics 1st and 2nd semester courses for non-engineering and non-physics majors (including pre-med students or non-science degrees). Instruction includes lecture, collaborative and independent problem solving, hands-on and inquiry based laboratory investigations. We recommend that you be enrolled in Calculus or Statistics and must have credit for Physics 1. (*This is an advanced course that does not have a lower level option to drop down to.*)

AP Physics C- This course is designed to be the college freshman level physics 1st and 2nd semester courses for engineering and/or physics majors. Instruction includes lecture, collaborative and independent problem solving, hands-on and inquiry based laboratory investigations. We recommend that you be enrolled in Calculus BC and must have credit for Physics 1 completed.

Engineering Design & Problem Solving - Developed the University of Texas faculty, this course engages learners in authentic engineering experiences through hands-on projects. Students will complete projects that empower them to think like engineers, to adopt engineering processes, and to research engineering disciplines for the betterment of our world. Students will be able to pursue dual enrollment opportunities within this course to receive credit from The University of Texas. We recommend you be enrolled in Pre-Calculus and have finished Physics.

Engineering Science - Learn many first year college engineering concepts and skills through team-based hands-on activities that link the theoretical, analytical and practical aspects of engineering. Math and science skills are critical for success, it's recommended to take physics and Algebra 2 previously or concurrently.

Scheduling Reminders:

- One science course cannot be dropped for another one (for example, you can't go from AP Biology to Anatomy & Physiology- they are two different classes.)
- In order to earn your science credit, you must complete the entire year in the same class- you can't change to a different one at the semester.
- Be aware that some of the AP courses do not have an on-level option to drop down to.
- Though not required for graduation, Physics is recommended for students who want to be competitive in the college admissions process.