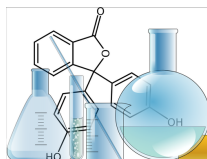


Science Electives 2021-2022

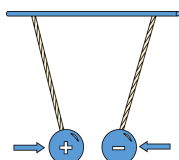
CHEMISTRY (year)

Study the composition, properties, and reactions of substances. Learn how atoms combine to create all matter in the Universe. Learn about states of matter and the structure of the atom. *Prerequisites:* Algebra 1 and Biology



HONORS CHEMISTRY (year)

Study the composition, properties, and reactions of substances. Learn how atoms combine to create all matter in the Universe. Learn about states of matter and the structure of the atom. H. Chem is also based on College Board standards. *Prerequisites:* Algebra 1 and Biology



HONORS PHYSICS (year)

Study of the forces and laws of nature affecting matter, such as equilibrium, motion, momentum, and the relationships between matter and energy. Use the instruments of science and principles of mathematics to learn how matter and energy behave. Topics include forces, electricity and magnetism, heat, waves, and theories of modern physics. *Prerequisites:* Algebra 1

HONORS ZOOLOGY (year)

Gain an understanding of animals, the niche they occupy, life cycles, and evolutionary relationships to other organisms. Study the organisms of the animal kingdom through dissection and comparative analysis.



EARTH SPACE SCIENCE (year)

Introduces students to the study of the earth from a local, global, and astronomical perspective. A study of Earth- a complex and dynamic 4.6-billion-year-old system of rock, water, air, and life. The course is taught using science and engineering practices that expose students to real world problems thus preparing them for success in future science courses or careers.



SCIENCE RESEARCH I (semester)

Use the scientific method to solve problems. Develop skills in designing experiments, collecting, and analyzing data.



Work individually or as part of a team to complete a research project and enter the project in a science competition. Students may go on to take Honors Science Research II

HUMAN PHYSIOLOGY (semester)

Studies the anatomy and physiology of the human body. Examines all major systems, tissues, and muscle groups in the human body to help understand how these systems interact and their role in maintaining homeostasis. *Prerequisites:* Biology



EXERCISE SCIENCE (semester)

Study the body's response to exercise and the role of exercise and sport in individual and societal health. Analyze the body system responses to determine methods for improving exercise performance across ages, gender, and chronic medical conditions. Explore the role of genetics, training, nutrition, and technology in the evolution of sport and fitness in society.



MARINE BIOLOGY (semester)

Students use scientific skills and processes to study the marine world. Students analyze marine organisms and their environment, including the Chesapeake Bay and its tributaries. *Prerequisites:* Biology



FORENSIC SCIENCE (semester)

Use the principles of science, technology, and mathematics to investigate crime scenes. Collect and analyze physical evidence. Builds on a basic knowledge of biology, physical science, and computer technology. Because of the mature nature of crime scene subject matter, this course is recommended for upperclassmen.



AP ENVIRONMENTAL SCIENCE (year)

Explore environmental issues and investigate alternative solutions for resolving and/or preventing them. Provides the opportunity to earn college credit and prepares students for the AP Test in Environmental Science.

Prerequisites: Biology and concurrent enrollment in Chemistry



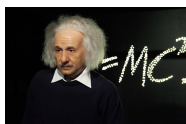
AP CHEMISTRY (year)

AP Chemistry is the equivalent of a general chemistry course taken the first year of college. Students learn chemical principles and use mathematics to solve chemistry problems. AP Chemistry prepares students for the Advanced Placement Test in chemistry and the opportunity to earn college credit. *Prerequisite:* Algebra II



AP PHYSICS 1 & 2 (year, everyday)

Algebra-based, introductory college-level physics course that explores topics such as fluid statics and dynamics; thermodynamics with kinetic theory; PV diagrams and probability; electrostatics; electrical circuits with capacitors; magnetic fields; electromagnetism; physical and geometric optics; and quantum, atomic, and nuclear physics. Incorporates all of AP Physics 1 and 2 topics. *Prerequisites:* Geometry and concurrent enrollment in Algebra 2



AP BIOLOGY (year)

Develop a framework and study biology by using the processes of science. This course focuses on broad concepts of biology and lab investigation. It is the equivalent of an introductory college biology course and prepares students for the Advanced Placement Test in Biology and the opportunity to earn college credit. *Prerequisite(s):* Biology (Honors Biology Highly Recommended) and Chemistry



AP PHYSICS 1 (year)

Learn the principles of physics equivalent to a first-semester algebra-based college physics course. Topics include Newtonian mechanics; work, energy, and power. This course prepares students for the Advanced Placement Test in AP Physics 1 and the opportunity to earn college credit. *Prerequisites:* Geometry and concurrent enrollment in Algebra 2

AP PHYSICS C (year)

Learn the principles of physics equivalent to a second-semester college course in calculus-based physics. The course covers mechanics and electricity & magnetism. This course prepares students for the Advanced Placement Tests in AP Physics C and the opportunity to earn college credit. *Prerequisite(s):* Calculus or concurrent enrollment in Calculus

*HIGH ENGAGEMENT/PASSION COURSES**

The following classes are **quarter-long courses** that are scheduled together as a semester course.

Cleaner Energy through Plants for a Cleaner World: address your community's growing energy needs through clean renewable sources

Growing Organically: A Little Dirt Never Hurt: design and plan a plot that incorporates sustainable water use, the local environment, and supports the health of the whole system