

Physics in the Universe

Grade: 9-12 Credits: 10 College Recommended? Yes

Physics is a study of Motion and Forces, Conservation of Energy and Momentum, Heat and Thermodynamics, Waves, Electric and Magnetic Phenomena, and Investigation and Experimentation. Physics will use some combination of algebra, geometry, graphing, vector algebra and trigonometric functions. Math involvement will be differentiated based on target student population.

Chemistry in the Earth System

Grade: 10-12 Credits: 10 College Recommended? Yes

Recommended Prerequisites: Algebra I

The course is composed of the following topics. Measurement and calculations; Matter and Change; Atomic Theory; Periodic Law; Bonding; Formula and Equation Writing; Stoichiometry; Gas Laws; Solutions; Kinetics, Equilibrium; Acids/Bases; Oxidation-Reduction.

Biology: The Living Earth

Grade: 11-12 Credits: 10 College Recommended? Yes

Recommended Prerequisites: Chemistry

This course covers all the basics of biology including human physiology, metabolism, photosynthesis, cellular respiration; cellular reproduction, genetics and DNA, evolution and ecology. There is an emphasis on biochemistry and biotechnology, therefore it is recommended that students have successfully completed a chemistry course prior to enrollment.

IB Biology SL /HL I and II

Grade: 11 and 12 Credits: 20 College Recommended? Yes

Recommended Prerequisites: Teacher Recommendation and successful completion of chemistry. This two-year course is designed for those students pursuing the International Baccalaureate diploma or certificate. It is expected that students enrolled in this class will take the IB Biology exam in May of their second year.

IB Biology is a two-year course that combines academic study with the acquisition of practical and laboratory skills. There is an emphasis on open-ended laboratory investigations that the students design themselves. The course will include topics in

cells, biochemistry, genetics, ecology, human physiology, plant physiology, evolution and biotechnology.

IB Environmental Systems and Societies SL

Grade: 11-12 Credits: 10 College Recommended? Yes

Recommended Prerequisites: Either concurrent or past enrollment in Biology or IB Biology

The central concepts of the ES&S course include sustainability, biodiversity and environmental ethics. Students will engage in debate, research and experiments to understand the role humans play in the changing Earth.

AP Physics

Grade: 11-12 Credits: 10 College Recommended? Yes

Recommended Prerequisites: Successfully completed Algebra II, and Physics

Physics covers Newtonian mechanics (including rotational dynamics and angular momentum); work, energy, and power; and will also introduce electric circuits. This is an algebra-based advanced course that is equivalent to a first-semester college course in algebra-based physics. This is a class that will prepare you for Engineering courses in college. Students are expected to take the end of the year exam in May with the college board.

*This course meets the U.C./C.S.U. "d" laboratory science requirement.