

Science

Integrated Science

SC1000

1 Credit: Yearlong

Students in this course will use an experimental design, the scientific method, math skills, measuring skills and reasoning skills to investigate physical, earth, and space science concepts. The first term of the course will cover many fundamentals of astronomy including a brief exploration of the universe, our solar system, the sun and other stars and their characteristics. The earth science topics covered are the structure and function of the earth, continental drift and plate tectonics. The second term of the course will cover many fundamental physics concepts: molecular physics, motion and forces, and their application to earth. It will also include the fundamentals of matter, properties, and chemistry of various forms of it. Students explore these scientific concepts through lab exercises, independent work, class activities, discussion, and readings.

Biology 1

SC2000

1 Credit: Yearlong

This course is designed to increase knowledge about yourself and the living world around you. Topics include cells, animal systems, plant development, microbiology, genetics, evolution and environmental attitudes. Lab exercises and class activities are included to increase understanding of the topics.

Biology 1 Honors

SC6000

1 Credit: Yearlong

Prerequisite: Instructor Recommendation

This course places greater emphasis on the development of scientific concepts through independent lab work and class activities at an accelerated pace. Students will complete a large independent research project during the class and will defend their research to an identified panel of judges. This course is designed to increase knowledge about yourself and the living world around you. Topics include cells, animal systems, plant development, microbiology, genetics, evolution and environmental attitudes. Lab exercises and class activities are included to increase understanding of the topics.

Introduction to Chemistry

SC2200

1 Credit: Yearlong

Prerequisite: with instructor recommendation only

Chemistry is needed in all aspects of life. Chemistry deals with the interaction of matter and energy, atomic structure, chemical reactions, and bonding. Chemistry requires good problem-solving skills. General Chemistry explores the topics of the atom, periodic trends, chemical formulas and reactions, the mole, the gas laws, matter, and kinetics. General Chemistry is recommended for students who are interested in chemistry as a third lab science.

Chemistry 1

SC32300

1 Credit: Yearlong

Prerequisite: Successful completion of Algebra 1

Chemistry deals with the interaction of matter and energy, atomic structure, chemical reactions, and bonding. Chemistry requires good problem-solving skills and strong mathematical background. Students with questions about the mathematical skills needed for chemistry are advised to contact their science teacher about any concerns they may have. The course also provides the student with a strong pre-college background. Chemistry is needed in the fields relating to medicine, engineering, manufacturing, environment, and agriculture. Chemistry 1-1 explores the topics of the atom, periodic trends, chemical formulas and reactions, and the mole concept. Chemistry 1-2 completes a general first-year chemistry curriculum. Topics include the gas laws, stoichiometry, solutions, equilibrium, kinetics, and acids and base equilibrium. Note: Completion of Chemistry 1 is recommended for preparation for college-level science. Students who are recommended by Biology 1 or 1A teachers may begin their chemistry studies with Chemistry 1 with the math prerequisites.

Environmental Studies

0.5 Credit: Semester

SC2400

Prerequisite: Integrated Science , Biology or Biology Honors with a grade of C or higher, or consent of instructor

This course is designed to introduce the general field of environmental science and explore the relationship between humans and the world we depend on for survival. Learning will focus on the science behind environmental issues that threaten our land, water, atmosphere, and climate; while gaining an understanding of the role that social, cultural and economic factors play in determining whether environmental solutions are ultimately successful. This course is recommended for those exploring a diverse range of career options including those in environmental and biological sciences, business, and engineering. Note: Many colleges will not accept this course as satisfying their science admission requirements.

Physics 1

1 Credit: Yearlong

SC3400

Prerequisite: Successful completion of Algebra 2 or consent of instructor

This course lays a foundation of the basic mathematics and science principles which will be used to study motion, gravity, force, and energy. The course is a blend of theory, application and lab work, allowing the student to develop creatively within a structured course. Since many of the concepts will be subjected to rigorous mathematical treatment, students taking this course should have a strong background in algebra, geometry, and problem-solving skills. They should have a solid background in solving algebraic equations and second degree polynomials, should be familiar with basic elements of geometry (especially triangles) and trigonometry, should be able to find areas of polygons, should be comfortable making metric conversions and in using scientific notation, and should be able to make graphs and take slopes of lines on graphs. A calculator TI82/83 or better is required. It is recommended students have previously or are concurrently taking College Prep Math, Probability and Statistics, Trigonometry and Pre-Calculus.

Chemistry 2 – Honors

**Prerequisite for all Chemistry 2
Chemistry 1 and completion of Algebra 2**

Honors Chemistry 2 course is recommended for students planning to pursue a career in science, engineering or medicine. The material covered is typical in both content and level of difficulty to material found in a first-year college chemistry course. The mathematical treatment of problems will be challenging and in many cases, one lab experiment will be performed per week with major formal lab reports due at least once each unit.

Chemistry 2: Organic

1.0 Credit: Yearlong

SC6300

Prerequisite: Chemistry 1 and completion of or enrollment in Algebra 2

This course provides the student with an in-depth look at topics introduced in Chemistry 1, such as stoichiometry, thermochemistry, precipitation and oxidation/reduction reactions, kinetics and equilibrium, and acid/base chemistry. There is an emphasis on connections to the relationship between math-based problem solving and student completed lab work.

Physics 2 Honors

Honors Physics 2 courses are recommended for students planning a career in engineering and/or the sciences. The material covered is typical of that found in a first year, non-calculus college physics course. The mathematical treatment of problems and pace will be rigorous research and design activities play an important role in these courses. Students may elect to take one or both courses. They are independent of one another, but taking both students will have covered the material typical of an AP Physics course.

Physics 2: Electricity and Magnetism

SC6400

0.5 Credit: Semester

Prerequisite: Successful completion of Physics 1

This course provides students with an in-depth look at electricity including static and dynamic electricity, design, construct and test circuits, and explore magnetism and characteristics of magnetic materials.

Physics 2: Waves, Sound, and Light

SC6401

0.5 Credit: Semester

Prerequisite: Successful completion of Physics 1

This course provides students with an in-depth look at wave properties, mechanical waves including sound, EM waves, reflection, refraction and diffraction properties.