

Science

General Science

This course presents current knowledge in Biology. The material covered will help you better understand yourself and the world around you. It will also strengthen your scientific literacy and laboratory skills required to succeed in higher level science classes.

Living Environment

This course explores the basic functions of living things and how they interact with the world around them, including topics such as Cells, Body Systems, Life Processes, Genetics, Evolution, and Ecology. This course will cover everything necessary to pass the Regents Living Environment Exam and beyond. This course presents current knowledge in biology using the latest New York State Curriculum. The material covered will help you better understand yourself and the world around you. The major topics will be human biology, including anatomy and physiology, reproduction and development, genetics, change of organisms over time, and ecology. You must pass the class, acquire 1200 lab minutes, and pass the Regents exam at the end of the year to receive credit.

Earth Science

Earth Science is a broad course that explores our planet from the following perspectives: Formation of Earth, Earth's place in the universe, Earth's structure and composition, dynamic geological processes, energy in the Earth system, history of life on Earth, and human effects on the Earth system.

The concepts presented in this course will increase your knowledge of the physical world you live in and the natural processes going on around you. This course includes all Earth Science topics as required by the New York State learning standards for science. These topics can be divided into three major areas of study:

1. *Geology*: The study of the solid Earth.
2. *Meteorology/ Weather & Climate*: The study of the changing conditions of the atmosphere over short and long periods of time.
3. *Astronomy*: The study of the motions of objects in space and Earth's position in the universe.

Chemistry

Chemistry is the study of the atom and the chemical reactions that result from the interaction of atoms. The Regents Chemistry course includes chemical concepts encompassing lab safety, development of Atomic theory, periodicity and the development of the Periodic Table, Moles & Stoichiometry, Chemical Equations/Reactions with Formula Math, Chemical Bonding and Intermolecular Forces, Physical Behavior of Matter, Energy, Kinetics &

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Equilibrium, Organic Chemistry, Oxidation & Reduction (REDOX), Solution, Acids, Bases, & Salts, and Nuclear Chemistry. The student will learn how to better visualize the structure of an atom through the use of diagrams, models, and molecular kits. Mastery in Regents Chemistry will provide an excellent foundation for any college chemistry course. The curriculum follows the NYS Education Department Regents Chemistry Standards. Each student must earn at least 1200 minutes in the laboratory setting in order to be eligible to sit and take the NYS Regents Chemistry Examination. The cadet earns one full science credit for one full year of classes. Classes meet every day for one period and every other day for lab.

General Chemistry

This course is a general chemistry class. In this class we will explore the fundamentals of chemistry and will incorporate real-life science examples on a daily basis. General areas of study will include, but are not limited to the structure of matter, states of matter, chemical reactions, descriptive chemistry. The format will include weekly assignments, videos, group work, discussion and class projects.

Physics

Physics is an introductory course in high school physics. Students should be familiar with basic algebra, geometry, and trigonometry in preparation for this course. Students will be required to take a mid-term and comprehensive final exam. Physics involves a significant amount of lab work, hands-on activities, and exploration. Key topics include Kinematics (1- and 2-D motion); Dynamics (Forces); Circular Motion and Gravity; Momentum and Impulse; Work, Energy, and Power; Electrostatics; Circuits; Magnetism; Waves; Modern Physics.

Astronomy:

Astronomy is the study of objects and phenomena of the space beyond Earth. As a student you will

- participate in observations of the moon, sun, stars and other astronomical objects;
- demonstrate an understanding of a broad overview of topics in astronomy - from the Earth and moon topics to stars, galaxies and the universe;
- conduct experiments and demonstrate an understanding of physical laws;
- understand how the history of astronomy has shaped the theories and laws of modern astronomy;
- explore current events in astronomy and space exploration.

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Natural Disasters

In Natural Disasters students will learn about tornadoes, volcanoes, earthquakes, hurricanes, floods, blizzards, landslides, wildfires, and tsunamis. This class will help students to understand how these disasters occur and why. The students will also take a look at how humans are affected by these disasters and technology that has been developed to assist in prevention or advanced warning systems.

Current Events in Science

My hope is that you will enjoy this class and potentially seek a career in the field of science or find an area you really enjoy to study further. We will explore a variety of topics ranging from technology and how it has changed over the years to climate change. This course is not based on a Regents exam and so will focus on a variety of skills normally not covered in a typical science class.