



Academic Course Catalog  
2009 - 2010

Science  
Department

Current As Of: 4/6/09

## SCIENCE DEPARTMENT

EARTH SCIENCE REGENTS-4011 - Freshmen/Sophomores/Juniors/Seniors

1 credit

This full year course follows the NYS syllabus for Earth Science and regents credit is given to students who achieve a 65 or better on the Earth Science Regents examination. This course includes both lecture and laboratory sessions in which the following topics will be covered: observation and measurement, changing environment, measuring earth, earth motions, energy and earth processes, isolation and seasons, weather, water energy and climate, weathering and erosion, deposition, rock formation, dynamic crust and earths interior, geologic history, landscape development.

LIVING ENVIRONMENT REGENTS-4021 - Sophomores

1 credit

Life and how it interacts with the surrounding environment is the primary focus of this regents course. Topics discussed include evolution, ecology, genetics and biodiversity, reproduction, scientific method, biochemical compounds, human body systems, simple and complex organisms. Labs are a requirement with a minimum of 20 hours of lab work, including written lab reports. Students are required by the state to take the Living Environment Regents in June and earn a 65 or better for a high school diploma.

LIVING ENVIRONMENT HONORS-4024 - Freshmen

1 credit

Students will be selected to take the Living Environment course in a more challenging atmosphere. Topics discussed include those in the Living Environment curriculum but in greater detail and in a more in-depth analysis of the subject matter. Labs are a requirement with a minimum of 20 hours of lab work, including written lab reports. Students will be required to design their own experiment following the scientific method.

CHEMISTRY REGENTS-4031 - Juniors/Seniors

1 credit

This course follows the New York State syllabus for Regents Chemistry. This course investigates the composition, structure and properties of matter, the changes which matter undergoes and the energy accompanying these changes. Topics studied include: matter and energy, atomic structure, the periodic table, kinetics and equilibrium, redox and electrochemistry, bonding, acids and bases, organic chemistry and nuclear chemistry. This is done through both lecture and laboratory demonstrations.

Prerequisites: Living Environment Regents and Math 1 and Math 2.

CHEMISTRY HONORS-4035 - Sophomore

1 credit

In-depth study of Chemistry topics, matter, thermochemistry, atomic structure, bonding, kinetics, electro chemistry, acid-base and organic chemistry. This course prepares students for chemistry regents as well as covers some advanced placement chemistry topics. Laboratory work and labs repertory a requirement. Pre-requisites: Living Environment Regents, Math 1 or Math 1 Honors.

A.P. CHEMISTRY-4044 - Juniors/Seniors	1 credit
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College General Chemistry course covers topics in qualitative, quantitative, analytical, quantum and physical chemistry. Laboratory work is required. Students are expected to spend free periods completing lab work. The College Board issues the exam at the end of the year. College credit may be obtained with successful completion of the Advanced Placement exam.

Pre-requisite: Chemistry Regent class average of 90 or higher, Chemistry Regents score of 80 or better, completion of Math 2 with class average of 90 or above. Students must pay fee to the College Board for administration of the A.P. exam.

PHYSICS REGENTS-4041 - Juniors/Seniors	1 credit
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This course follows the New York State syllabus for Regents Physics. Through the study of such topics as mechanics, energy, electricity and magnetism, optics, nuclear energy and modern physics, students are given a solid foundation in the fundamentals of the science of physics. This is done through lecture, computer simulations, and laboratory procedures. Mathematical competency is necessary for successful completion of the course.

Prerequisites include passing the Living Environment and/or Chemistry Regents. This is a challenging course and you should speak to your science teacher about the pros and cons of taking it.

HEALTH-4042 - Sophomores	.5 credit
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Health Education is a half year course required for graduation. Health Education enables individuals to maintain and promote health in a continually changing world, through the acquisition of understanding, attitudes and skills. Health Education addresses the continuum from health promotion to risk reduction to the prevention and management of health problems. Health Education is multi-disciplinary in that it draws upon many other fields of learning such as the biological, environmental, and physical.

ADVANCED PLACEMENT BIOLOGY-4043 - Juniors/Seniors	1 credit
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This course deals with an intense study of living organisms and their environment. Topics include respiration and photosynthesis, bio-chemistry, evolution, genetics, anatomy and physiology, and the cell and its functions. This course deals with all the five kingdoms and their phylums. The college board issues the exam at the end of the term and college credit may be given with the successful completion of an AP exam.

Prerequisites include passing the Living Environment and Chemistry Regents and having an average of 90% or better in all previous science courses. A Physics summer assignment is required for all students registering for this course. Textbooks will be issued in June with the assignment due the first week in September. Labs will be performed, many of which require extended time outside of the school day. Students must be committed to spending time before or after school in order to complete lab work. (approximately 2-3 times a quarter). In addition to the fee to the college board for the administration of the AP exam, students may be required to purchase additional review books and materials in order to prepare for the successful completion of the AP exam.

MARINE BIOLOGY-4056 - Juniors/Seniors .5 credit

This course is the study of life in the sea. It deals with the kingdoms of life in the sea, energy in the ocean, and marine ecology. It will include characteristics of the marine environment such as depths of the ocean and light intensities. Through the use of field trips, lab experiments and lectures the world of marine science is brought to our world.

Prerequisite: Living Environment

BIOLOGY FOR THE HEALTH FIELD-4055 - Juniors/Seniors .5 credit

This course deals with biology within the medical field. It includes anatomy and physiology, diseases, medical terms and current medical issues and trends. This course is an elective geared toward any student interested in pursuing the health field after high school. Prerequisite: Living Environment

ENVIRONMENTAL SCIENCE (REGENTS LEVEL)-4057 - Juniors/Seniors 1 credit

There is an urgent need for Environmental Education in today's fast paced society. This course is a REAL-LIFE science course. It will teach about the important environmental issues and how they affect the lives of you and your family. This class will provide several ways in which you can become aware of the many environmental problems caused by the human race and how they affect our surrounding environments. It will promote awareness and concerns for the well being of our backyard, the block we live on, our community, our state, our country and our planet. This full year course will introduce the major ecological concepts and environmental issues. You will also learn about the technological developments that have created the environmental problems like air, water, ground and food pollution, as well as the technological advances that are trying to solve them.

Prerequisites: Living Environment and one or more of the following: Earth Science, Chemistry or Physics, plus Math 1.

ANATOMY & PHYSIOLOGY-4053 - Juniors/Seniors 1 credit

This full year course examines complementary relationships between structure and function; dynamic aspect, integration of organs and organ systems in the maintenance of normal functioning of the human organism. This elective is ideal for a student who is considering a career in the medical field.

Prerequisite: Living Environment

FORENSIC SCIENCE-4052 - Juniors/Seniors .5 credit

This course deals with the study of science in the field of forensics, lectures will be conducted on topics including: Intensive Crime Scene Investigations, Collecting Physical Evidence, Forensic Toxicology and Analyzing Hair and Fibers. In addition, laboratory experiments will be done to bring the analysis of evidence into the classroom. This course is ideal for students considering a career in the forensics or criminal intelligence fields.

INFECTIOUS DISEASES-4061 - Juniors/Seniors .5 credit

This course provides an introduction to study of infectious diseases through the fields of microbiology, immunology, virology, biotechnology, and pathology. General microbiological concepts such as microbial structure, growth, and

metabolism will be used to study a disease's mode of infection, the body's defense mechanisms and immune response. The HIV/AIDS virus, Ebola virus, Lassa fever virus, Tuberculosis and Meningitis bacteria are among the infectious agents that will be discussed.

Prerequisite: Living Environment Regents