

SCIENCE DEPARTMENT

In order to be prepared for the 21st century, students must be scientifically literate. Through the variety of courses offered in grades 9-12, students will learn to apply scientific skills in problem solving. They will also develop an inquiry approach to the study of science through laboratory experiences. Science-related occupations as well as the applications of scientific principles to everyday life will be stressed.

D020

BIOLOGY I

2 semesters

1 credit

9-12

PREREQUISITE: None

This course will cover many areas of biology including cells, botany, zoology, genetics, and ecology. Laboratory experiences will be used to give hands-on reinforcement of the material presented.

D030

*****BIOLOGY II**

11-12

2 semesters

1

credit

PREREQUISITE: Biology I, Chemistry or Physical Science, and science teacher recommendation.

This course is a laboratory class designed to develop, through direct experience, an understanding of how science works. Students are taught to utilize their backgrounds in biology while using the scientific method to investigate and solve problems. In-depth study of the following areas form the basis for many laboratory activities: cell processes, genetics, and behavior. (A chapter on reproductive health is included in the textbook. If parents wish to review this material, they may do so by contacting the school.)

D050

PHYSIOLOGY

1 semester

1/2 credit

11-12

PREREQUISITE: Biology I - with a recommended grade of "C" or better.

The student learns, in detail, the structure and function of the human body through a coordinated laboratory and lecture program. Although physiology has been designed for students planning a career in biology, medicine, nursing or physical education, many others would find this course of interest.

D060

ENVIRONMENTAL SCIENCE

1 semester

1/2 credit

11-12

Environmental science is an area of science that deals with the study of the environment and the world around us. Now is a critically important time for students to understand the environment and their relationship to it. This class will concentrate on environmental issues in society. Students will be encouraged to discuss environmental problems and concerns through current events. This course will incorporate labs inside and outside the classroom.

D070

PHYSICAL SCIENCE

2 semesters

1 credit

10-12

PREREQUISITE: One year of science

Physical Science develops the concepts and applications of chemistry and physics. The course is designed to include laboratory experiences and to integrate with other disciplines.

D080

EARTH SCIENCE

2 semesters

1 credit

10-12

PREREQUISITE: One year of science

This course studies the interrelationships of astronomy, oceanography, geology, environmental problems and meteorology. It is recommended for students who have a desire for a better understanding of earth science. Laboratory experiences are stressed.

D100

HISTORICAL GEOLOGY

1 semester

1/2 credit

11-12

PREREQUISITE: Two years of science (Biology I must be one of the two requirements)

Historical Geology is a lab oriented Science class with no math requirement where students will compare fossil life with modern animals and plants through analysis and dissection. Students will learn how to find, collect, prepare and preserve fossils through hands-on activities.

Through the study of fossils, students will learn about the geography, climate, and environment of the past as well as how and why extinctions occur. Students will reconstruct the past from fossil clues, build dinosaurs from bone-piles and make molds and casts of fossils.

D110

CONSUMER CHEMISTRY

1 semester

1/2 credit

11-12

PREREQUISITE: One year of science

This one-semester course has been designed for any student concerned about the increasing numbers of chemicals (both harmful and not so harmful) found in our food and environment. The course work will consist of experimentation and discussion about the chemistry of beverages, color, food, food-activities, over-the-counter drugs, petroleum, soaps, detergents, soil, fertilizers, textiles and water. No previous knowledge of chemistry is required.

D120 & D130

CHEMISTRY

2 semesters 1 credit 10-12
1 credit for additional lab hour

PREREQUISITE: Algebra I or equivalent math course with a recommended grade of "C" or better

This class of lecture and laboratory deals with the composition of materials and the changes that they may undergo. The concepts, laws, and theories explaining the properties and behavior of elements and compounds are discussed. An introduction to atomic and molecular structure and its relationship to the properties of matter is provided. Laboratory experiences are an essential part of this course. Chemistry should be taken by all college-preparatory students.

D140 & D150

HONORS CHEMISTRY

2 semesters 1 credit 10-12
1 credit for additional lab hour

PREREQUISITE: Science teacher recommendation (strong math skills essential).

This accelerated two-period class of lecture and laboratory deals with the composition of materials and the changes that they may undergo. The concepts, laws, and theories explaining the properties and behavior of elements and compounds are discussed. A quantitative approach to atomic and molecular structure and its relationship to the properties of matter is provided. Laboratory experiences are an essential part of this course. Chemistry should be taken by all college-preparatory students who are considering careers in science, engineering, or medicine.

D170, D180 & D190

ADVANCED CHEMISTRY

1 semester 1/2 credit 11-12

PREREQUISITE: One year of chemistry

This course is designed to acquaint students with the areas of chemistry not covered in the first year. Topics covered include qualitative and quantitative analysis as well as organic synthesis. Laboratory investigations comprise the majority of class material.

D200 & D210

PHYSICS

2 semesters 1 credit 11-12
1 credit for additional lab hour

PREREQUISITE: Algebra II with a grade of "C" or better and Trigonometry concurrently.

This rigorous class deals with the nature of matter and energy. Topics covered include: mechanics, thermodynamics, electricity, magnetism, waves, optics, sound and nuclear physics. The course is strongly recommended for science majors, especially those considering careers in computer technology, engineering, mathematics, and many health-related fields.

D220 & D230

HONORS PHYSICS

2 semesters 1 credit 11-12
1 credit for additional lab hour

PREREQUISITE: Science teacher recommendation and successful completion of Trigonometry

This accelerated course is designed to prepare the science oriented student for college science curriculum at most universities. This will be accomplished with an intensive utilization of two class periods per day. The first period will be used to discuss, derive, and apply quantitatively the concepts of modern physics. The second period will be used to incorporate those concepts into a laboratory environment. The second period is vital to the student's ability to retain and use the materials gained from the lecture.

D250

ASTRONOMY

1 semester 1/2 credit 11-12

PREREQUISITE: Two years of science (Biology I must be one of the two requirements)

Astronomy is a branch of science dealing with that part of the universe which lies beyond the Earth's atmosphere. The course addresses the location, motion and nature of the objects in space. Topics of study include the universe, the evolution of our solar system, the laws of nature, and the past, present, and future of the space program.

D260

ANTHROPOLOGY

1 semester 1/2 credit 11-12

PREREQUISITE: One year of science

This course examines patterns in human history and organization. Some of the scientific theories on the evolution of the human species are discussed. Objective observation and analysis of fossil data are used to interpret ancient cultures. This course is recommended to students interested in the physical development of the human race.

D270

ADVANCED PLACEMENT ENVIRONMENTAL SCIENCE

2 semesters 1 credit 11-12

Advanced Placement Environmental Science is a full-year, elective course for students with a strong interest in environmental science. Students will be challenged to analyze and interpret data and apply concepts to the solution of environmental problems. In addition, students will learn more about the environment in which they live in and the effect of man on the environment. Laboratory investigations will also be included to enhance the students' understanding of the concepts developed.

D040

A. P. BIOLOGY

2 semesters 1 credit 11-12

PREREQUISITE: Biology I, Chemistry, and science teacher recommendation.

A.P. Biology is a college level biology course. The textbook and laboratory activities are equivalent to those used in college. The course aims to provide students with the conceptual framework, factual knowledge, and analytical skills necessary to deal critically with the rapidly changing science of biology.

D160

A. P. CHEMISTRY

2 semester

1 credit

11-12

PREREQUISITE: Science teacher recommendation and successful completion of Chemistry

A.P. Chemistry is a college level chemistry course. This course differs qualitatively from the usual first secondary school course in chemistry with respect to the kind of textbook used, the topics covered, the emphasis on chemical calculations and mathematical formulation of principles, and the kind of laboratory work done by the students. For some students, an A.P. Chemistry courses enables them to undertake, as freshmen, second-year work or to register for courses in other fields where general biology, chemistry, and physics is a prerequisite. For other students, the course fills the laboratory science requirement and frees time for other courses.

D240

A. P. PHYSICS

2 semester

1credit

11-12

PREREQUISITE: Science teacher recommendation and successful completion of Physics

A.P. Physics is a college level physics course. It is to be taken following first year algebra-based physics. The majority of the class is devoted to fundamental topics in classical physics and is mainly focused on calculus-based Newtonian mechanics. The calculus necessary for success is taught in class. Other areas that may be covered, depending on time constraints, are fluid mechanics, waves, thermodynamics, and electricity and magnetism. College based labs are included in the instruction and a variety of statistical analysis techniques are used. This is a very rigorous academic class which challenges students' intellect as well as their work ethic. It is most beneficial for those going into engineering or any science/mathematics related field.