SCIENCE COURSES

Previous performance in Science courses and teacher recommendation should be considered in course selection.

BIOLOGY

BIOLOGY **33202X0** **1 CREDIT**

This course is designed to develop student understanding of biological concepts and principles and promote an understanding of plant and animal processes from the cellular to the multi-cellular level. Laboratory work is an important part of each phase of the course. The final exam is the North Carolina Biology End-of-Course Test.

BIOLOGY (HONORS) **33205X0** **1 CREDIT (HN)**

Content and principles for biology are taught but in greater depth and magnitude. Students do extensive research, independent study, and laboratory investigations. This course is designed for students who have shown superior achievement and high interest in previous science courses. The final exam is the North Carolina Biology End-of-Course Test.

ADVANCED PLACEMENT BIOLOGY **3A007X0** **1 CREDIT (AP)**
Recommended prerequisite(s): Biology/Honors Biology and Chemistry/Honors Chemistry

Students study the basic principles and concepts covered in an introductory "General Biology" college-level course. Topics include the structure and function of cells and organisms, the organization, requirements and development of living systems, and heredity and evolution. Students are provided in-depth laboratory experiences. It is expected that students enrolled in this course will take the College Board Advanced Placement Test.

ANATOMY AND PHYSIOLOGY **33302X0** **1 CREDIT**
Recommended prerequisite(s): Biology

This course provides the student with a general study of the structure of the human body and a detailed study of the functions of the body systems. Laboratory work includes anatomical studies of mammals such as fetal pigs and cats.

ANATOMY AND PHYSIOLOGY (HONORS) **33305X0** **1 CREDIT (HN)**
Recommended prerequisite(s): Chemistry or Honors Chemistry is strongly recommended

This course is designed for the student with a strong background and interest in biology. A detailed study of the human body, including gross structure of the body and physiology, provides the framework of the course. Students are provided more extensive laboratory experiences and independent research than students enrolled in Anatomy and Physiology.

CHEMISTRY

CHEMISTRY **34202X0** **1 CREDIT**
Recommended prerequisite(s): Algebra II or concurrent enrollment in Math III

Chemistry is the study of the composition and properties of matter. It provides an introduction to the theories concerning the structure of matter and includes mathematical problems that illustrate these theories. Laboratory experiences and demonstrations are integral parts of this course.

CHEMISTRY (HONORS) **34205X0** **1 CREDIT (HN)**
Recommended prerequisite(s): Algebra II or concurrent enrollment in Math III

The concepts and principles of chemistry are presented in greater depth and at a more rapid pace than in Academic Chemistry. Students perform extensive research, independent study, and laboratory work. Theoretical and mathematical relationships in chemistry are studied.

CHEMISTRY II (HONORS) **34215X0** **1 CREDIT**

This course will explore those concepts covered in your first chemistry course in more depth, especially the concepts of thermodynamics and equilibrium. It is designed to prepare students for their first college chemistry course, including key lab skills used in the college laboratory setting. This course is also recommended for those students taking either the SAT II: Chemistry Test and/or AP Chemistry.

ADVANCED PLACEMENT CHEMISTRY **3A017X0** **1 CREDIT (AP)**
Recommended prerequisite(s): Algebra II and Chemistry/Honors Chemistry

Students study the basic principles and concepts covered in an introductory "General Chemistry" college-level course. Topics include chemical composition, stoichiometry, atomic structure, bonding, molecular structure, chemical reactions, states of matter, and solutions. It is expected that students enrolled in this course will take the College Board Advanced Placement Test.

EARTH SCIENCE

EARTH SCIENCE/ENVIRONMENTAL SCIENCE **35012X0** **1 CREDIT**

Students are provided an in-depth study of the earth processes including plate tectonics, rock and mineral formation, and landforms. Laboratory work is a major component of the program.

EARTH SCIENCE/ENVIRONMENTAL SCIENCE (HONORS) **35015X0** **1 CREDIT (HN)**

This course focuses on inquiry into the functions of the earth's systems. Emphasis is placed on matter, energy, coastal dynamics, environmental awareness, materials availability, and the cycles that circulate energy and material thorough the earth systems. Laboratory work is a major component of the course.

INTRODUCTION TO METEOROLOGY **30202X0L** **1 CREDIT**

This course focuses on inquiry into atmospheric conditions. Emphasis is placed on weather patterns, cycles of energy, interpreting and analyzing weather models, surface conditions, pollution, upper-air conditions, weather mapping, and climatologic patterns. Laboratory work is a major component of this course.

ASTRONOMY **35402X0** **1 CREDIT**

The underlying principles of life, earth, and physical science are integrated in this study of the universe. Historical astronomy, the solar system, comets, constellations, extraterrestrial life, and the evolution of stars are the major topics of study. Observational astronomy skills and critical thinking are fostered through the use of laboratory and field activities.

ADVANCED PLACEMENT ENVIRONMENTAL SCIENCE **3A027X0** **1 CREDIT (AP)**

Recommended prerequisites: Successful completion of two years of high school laboratory science

The AP Environmental Science course is designed to be the equivalent of an introductory college course in environmental science. The goal of the AP Environmental Science course is to provide students with the scientific principles, concepts, and methodologies required to understand the interrelationships of the natural world, to identify and analyze environmental problems both natural and human-made, to evaluate risks associated with these problems, and to examine alternative solutions for resolving and/or preventing them. It is expected that students enrolled in this course will take the College Board Advanced Placement Test.

PHYSICAL SCIENCE

PHYSICAL SCIENCE **34102X0** **1 CREDIT**

This course is designed as an entry-level course. The concepts of physics and chemistry are taught using both laboratory approaches and inquiry teaching. Students use their mathematical skills in the applications of science. Science projects and other independent student research provide students with a better understanding of the processes of science.

PHYSICS

PHYSICS **34302X0** **1 CREDIT**

Recommended prerequisite(s): Algebra II

Students develop a general understanding of the mathematical and motion-oriented study of matter and energy. Mechanics, heat, light, electricity, magnetism, gravity, and nuclear energy are the major topics of study. Students who wish to study these topics in detail should take Honors Physics.

PHYSICS (HONORS) **34305X0** **1 CREDIT (HN)**

Recommended prerequisite(s): Algebra II

Honors Physics is the in-depth mathematical and motion-oriented study of matter and energy. It provides an understanding of the physical principles and laws dealing with mechanics, heat, light, electromagnetism, and nuclear energy. Students are provided various laboratory experiences that are designed to enhance and reinforce concepts and principles in physics.

AP PHYSICS I-ALGEBRA BASED **3A057X0** **1 CREDIT (AP)**

AP Physics I is equivalent to a first-semester college course in algebra-based physics. The course covers Newtonian mechanics (including rotational dynamics and angular momentum): work, energy, and power; and mechanical waves and sound. It also introduces electric circuits.

Physics I: unlike AP Physics B, which recommends a prior high school physics course, no prior course work in physics is necessary to students to enroll in AP Physics I. Students should have completed Geometry/Math II and be concurrently taking Math III or an equivalent course. Although the Physics I course includes basic use of trigonometric functions, this understanding can be gained either in the concurrent math course or in the AP Physics I course itself.

ADVANCED PLACEMENT PHYSICS C: MECHANICS **3A047X0** **1 CREDIT (AP)**

Recommended prerequisite(s): Advanced Math, Chemistry, and Physics

This course should provide instruction in each of the following six content areas: kinematics; Newton's law of motion; work, energy and power; systems of particles and linear momentum; circular motion and rotation; and oscillation and gravitation.

ADDITIONAL SCIENCE COURSES

FORENSIC SCIENCE **30202X0D** **1 CREDIT**

Recommended prerequisite(s): Successful completion of Biology and Chemistry

In this course students will be examining the role of the forensic scientist. Students will experience the application of the pure sciences as they examine the evidence of various forensic situations. The activities will include traditional methods in addition to modern biotechnological techniques.