

SCIENCE			
COURSE	CREDIT	OPEN TO	PREREQUISITE
Biology*	1.0	9	None
AP Biology	1.0	11-12	Biology and Honors Chemistry or Chemistry
Physical Science	1.0	10-12	Biology
Chemistry	1.0	10-12	Biology and Algebra 1
Honors Chemistry	1.0	10-12	Biology and Algebra 1
AP Chemistry	1.0	11-12	Algebra 2/Trig, Honors Chemistry, or department recommendation
Earth Science	1.0	10-11	Biology
Physics	1.0	10-12	Biology and Algebra 1
Honors Physics	1.0	10-12	Algebra 2/Trig, Biology or department recommendation
AP Physics C	1.0	11-12	Algebra 2 /Trig, Biology, Physics, or department recommendation Must be enrolled in precalculus concurrently
AP Physics 2	1.0	11-12	AP Physics C
Zoology	0.5	9-12	None
Honors Anatomy/Physiology	1.0	11-12	Biology and Chemistry
Astronomy	0.5	11-12	None
AP Environmental Science	1.0	11-12	Biology and Honors Chemistry, Chemistry, Physical Science or department recommendation
STEM Inquiry and Research*	1.0	11-12	2 Credits of Science
Nanotechnology and Research*	1.0	11-12	2 Credits of Science

*All students will have the ability to earn honors in this course. The teacher will review these requirements at the start of the school year.

<p>BIOLOGY*</p> <p>Prerequisite: None Open to: Grade 9</p>	<p>Biology emphasizes reading comprehension, data analysis, practical experimentation, hypothesis formulation, data collection, problem-solving, and critical thinking as they relate to the life sciences. Areas of study include genetics, cell</p>
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<p>Length: 2 semesters Credits: 1.0</p> <p>Course Number: SC1100, SC1200, SC1300, SC1500</p>	<p>structure, photosynthesis, respiration, ecology, microbiology, botany, and zoology. This course is aligned with the Next Generation Science Standards. It is also offered in a bilingual (Spanish) format.</p> <p>*All students will have the ability to earn honors in this course. The teacher will review these requirements at the start of the school year.</p>
<p>AP BIOLOGY</p> <p>Prerequisite: Biology and Chemistry Open to: Grades 11-12 Length: 2 semesters</p> <p>Credits: 1.0</p> <p>Course Number: SC5000</p>	<p>AP Biology is a college-level class that focuses on how both the Earth and the organisms that live on it have changed over time, as well as on the basic facts and ideas necessary to answer that question. Topics of study include cellular biology, energetics, evolution, ecology, genetics, genetic technology, animal structure and function, and plant structure and function. These concepts will be taught utilizing a lecture/discussion-based curriculum which includes advanced lab techniques, independent projects, directed practice, and student research. Additional assignments over the summer and during the first term may be required.</p> <p><i>*It is highly recommended that all students in an Advanced Placement course take the Advanced Placement Exam offered each May by the College Board.</i></p>
<p>PHYSICAL SCIENCE</p> <p>Prerequisite: Biology Open to: Grades 10-12 Length: 2 semesters Credits: 1.0</p> <p>Course Number: SC3600, SC3630</p>	<p>Physical Science is a lab science course designed to give students an introduction to fundamental principles of energy through the perspective of chemistry and physics. An emphasis on experimental design, scientific inquiry, and data analysis allows students to improve lab techniques and problem-solving skills. Connections to relevant societal and technological issues are explored. The course is aligned to the Next Generation Science Standards.</p>
<p>CHEMISTRY</p> <p>Prerequisite: Biology and Algebra 1 Open to: Grades 10-12 Length: 2 semesters Credits: 1.0</p> <p>Course Number: SC2100, SC2120, SC2030, SC2500</p>	<p>Chemistry focuses on experimental design, scientific inquiry, data analysis, mathematical calculation, and scientific reading. These skills are developed through creating models to explain physical observations. These models are developed as a class and evolve as more evidence is collected. Topics include; properties of matter, atomic structure, chemical formulas, chemical reactions, periodic properties of elements, chemical bonding, and the behavior of atomic particles in accordance with Kinetic Theory of Matter. Students write formal lab reports. Connections to relevant societal and technological issues are emphasized. This course is aligned to the Next Generation Science Standards. It is also offered in a bilingual (Spanish) format.</p>
<p>HONORS CHEMISTRY</p> <p>Prerequisite: Algebra 1 and Biology, or department</p>	<p>Honors Chemistry focuses on experimental design, scientific inquiry, data analysis, mathematical calculation, and scientific reading. These skills are developed through the study of</p>

<p>recommendation Open to: Grade 10-12 Length: 2 semesters Credits: 1.0</p> <p>Course Number: SC2900</p>	<p>energy, properties of matter, atomic structure, chemical formulas, chemical reactions, periodic properties of elements, chemical bonding, acid/base chemistry, behaviors of solutions, cause/effect relationships of chemical equilibrium, and the behavior of atomic particles in accordance with Kinetic Theory of Matter. Students write formal lab reports. Connections to relevant societal and technological issues are emphasized. This course addresses topics in more depth than in Chemistry. This course is aligned to the Next Generation Science Standards.</p>
<p>AP CHEMISTRY</p> <p>Prerequisite: Honors Chemistry and Algebra 2/Trig Open to: Grades 11-12 Length: 2 semesters</p> <p>Credits: 1.0</p> <p>Course Number: SC5100</p>	<p>AP Chemistry is the equivalent to a yearlong college-level class. Students will be provided ample opportunity to attain a depth of understanding of fundamentals and some competence in solving chemical problems. As with any of the science department's courses, skills such as scientific reasoning, experimental design, laboratory procedures and problem-solving are integrated and developed through a study of chemistry. However, the emphasis lies in preparation for the AP Chemistry test where the knowledge and skills are taken to a higher level of application. Among the topics are atomic structure, chemical bonding, gas laws, solids and liquids, solutions, reaction types, stoichiometry, equilibrium, chemical kinetics, thermodynamics, descriptive chemistry, and laboratory skills. There is an emphasis on chemical calculations throughout the content, including attention to significant figures, precision, and critical analysis of results.</p> <p><i>*It is highly recommended that all students in an Advanced Placement course take the Advanced Placement Exam offered each May by the College Board.</i></p>
<p>EARTH SCIENCE</p> <p>Prerequisite: Biology Open to: Grades 10-11 Length: 2 semesters Credits: 1.0</p> <p>Course Number: SC2200, SC2220, SC2230</p>	<p>Earth Science is a lab-oriented course that introduces the study of astronomy, geology, meteorology, and physical geography. This course is aligned with the Next Generation Science Standards.</p>
<p>PHYSICS</p> <p>Prerequisite: Biology and Algebra 1 Open to: Grades 10-12 Length: 2 semesters Credits: 1.0</p> <p>Course Number: SC3030, SC3100, SC3200, SC3500</p>	<p>Physics focuses on the attainment of knowledge and understanding of fundamental physics principles. Skills in scientific reasoning, experimental design, laboratory procedures, and problem-solving are integrated and developed through a study of physics topics, including linear and rotational mechanics, waves, electricity, and magnetism. This course is aligned to the Next Generation Science. It is also offered in a bilingual (Spanish) format.</p>
<p>HONORS PHYSICS</p>	<p>Honors Physics focuses on the attainment of knowledge and understanding of fundamental physics principles and their</p>

<p>Prerequisite: Algebra 2/Trig and Biology or department recommendation</p> <p>Open To: Grades 10-12</p> <p>Length: Length: 2 semesters</p> <p>Credits: Credit: 1.0</p> <p>Course Number: SC3900</p>	<p>mathematical descriptions. Skills in science reasoning, experimental design, laboratory procedures and problem-solving are integrated and developed through a study of physics topics. The topics include linear and rotational mechanics, waves, electricity, and magnetism. Basic trigonometry is applied in this course. This course is aligned to the Next Generation Science Standards.</p>
<p>AP PHYSICS C</p> <p>Prerequisite: Physics and Algebra 2/Trig, or department recommendation</p> <p>Open to: Grades 11-12</p> <p>Length: 2 semesters</p> <p>Credits: 1.0</p> <p>Course Number: SC5400</p>	<p>AP Physics C course description</p> <p>AP Physics C is equivalent to a first-semester college course in calculus-based physics that is more in depth than in previous physics courses. Skills in science reasoning, experimental design, laboratory procedures, and problem-solving are integrated and developed through a study of physics topics. This course covers kinematics; Newton’s laws of motion, work, energy, and power; systems of particles and linear momentum; rotation; oscillations; and gravitation. Strong Algebra and basic trigonometry skills are recommended as prerequisites. Basic calculus skills will be reviewed/introduced as needed.</p> <p><i>*It is highly recommended that all students in an Advanced Placement course take the Advanced Placement Exam offered each May by the College Board.</i></p>
<p>AP PHYSICS 2</p> <p>Prerequisite: AP Physics C</p> <p>Open to: Grades 11-12</p> <p>Length: 2 semesters</p> <p>Credits: 1.0</p> <p>Course Number: SC5500</p>	<p>AP Physics 2 is equivalent to a second semester college course in algebra based physics that is broader and more highly specialized than in previous physics courses. Skills in science reasoning, experimental design, laboratory procedures, and problem solving are integrated and developed through a study of physics topics. Students are challenged to extend what they learn to solve problems of various levels of structure and depth. This course covers fluid dynamics, thermodynamics, electricity and magnetism, optics, and atomic and nuclear physics. Strong Algebra and basic trigonometry skills are recommended as prerequisites.</p> <p><i>*It is highly recommended that all students in an Advanced Placement course take the Advanced Placement Exam offered each May by the College Board.</i></p>
<p>ZOOLOGY</p> <p>Prerequisite: None</p> <p>Open to: Grades 9-12</p> <p>Length: 1 semester</p> <p>Credits: 0.5</p> <p>Course Number: SC6000</p> <p>Zoology video</p>	<p>Zoology focuses on animal taxonomy, animal anatomy/physiology, animal development, and animal behavior. The course will emphasize basic life science laboratory skills and techniques. It can be taken concurrently with or after Biology.</p> <p>Animal dissection is a required part of the laboratory experience. This course is a science elective and does not fulfill the Science graduation requirement.</p>

<p>HONORS ANATOMY AND PHYSIOLOGY</p> <p>Prerequisite: Biology and Chemistry Open to: Grades 11-12 Length: 2 semesters Credits: 1.0</p> <p>Course Number: SC6500</p>	<p>Honors Anatomy and Physiology is designed for the student who has a special interest in human anatomy and physiology. Honors Anatomy and Physiology emphasize problem-solving, laboratory dissection, and research skills that are integrated and developed through a study of human body systems. This course is fast-paced and intensive. The integumentary, skeletal, muscular, circulatory, respiratory, digestive, and excretory systems are examined in detail. Lab reports, dissection write-ups, term projects, and portfolio entries are an integral part of the student's experience. Dissections are required.</p>
<p>ASTRONOMY</p> <p>Prerequisite: None Open to: Grades 11-12 Length: 1 semester Credits: 0.5</p> <p>Course Number: SC6200</p>	<p>Astronomy focuses on researching the historical developments in astronomy and examining the possible ways astronomy will change the world. Students will evaluate the forces that shaped our solar system, proper use of a star chart and telescope, and research space exploration. This course is aligned to the Next Generation Science Standards. This course is a science elective and does not fulfill the Science graduation requirement.</p>
<p>AP ENVIRONMENTAL SCIENCE</p> <p>Prerequisite: Biology and Chemistry, Physical Science, or department recommendation Open to: Grades 11-12 Length: 2 semesters Credits: 1.0</p> <p>Course Number: SC5300</p>	<p>AP Environmental Science is equivalent to one semester of a college course. AP Environmental Science provides students with the scientific principles, concepts, and methodologies required to do the following: understand the interrelationships of the natural world, identify and analyze environmental problems, both natural and human-made, evaluate the relative risks associated with these problems, both natural and human-made, and examine alternative solutions for resolving and/or preventing them.</p> <p><i>*It is highly recommended that all students in an Advanced Placement course take the Advanced Placement Exam offered each May by the College Board.</i></p>
<p>NANOTECHNOLOGY AND RESEARCH*</p> <p>Prerequisite: 2 Credits of Science Open to: Grades 11-12 Length: 2 semesters Credits: 1.0</p> <p>Course Number: SC6600</p> <p>Nanotechnology video</p>	<p>During the first term, students will learn and apply the protocols and scientific research in the context of laboratory experiences. Students will learn how to operate electron microscopes, atomic force microscopes, and the theory about how they work. They will learn how materials' properties change at the nanotechnology level and how those properties are applied in our daily lives. As the students develop skills and techniques, they will refine their own research questions they will investigate during the second term. The investigation will include designing original experiments to help answer their research questions. The students will share their research design and findings at the end of the course.</p> <p>This lab-based course is aligned with the Next Generation Standards.</p>

***All students will have the ability to earn honors in this course. The teacher will review these requirements at the start of the school year.**

STEM INQUIRY AND RESEARCH*

Prerequisite: 2 Credits of Science

Open to: Grades 11-12

Length: 2 semesters

Credits: 1.0

Course Number: SC2700

[STEM Inquiry and Research](#)

During the first term, students will learn and apply the protocols of scientific research in the context of laboratory experiences. The inquiry experiences will include topics from the STEM (Science, Technology, Engineering, and Math) fields of Biology and the Physical Sciences. As the students develop skills and techniques, they will refine their own questions they will research during the second term. The students will design original experiments to help answer their research questions. Students will share their research design and findings at the end of the second term.

This lab-based course is aligned with the Next Generation Standards.

***All students will have the ability to earn honors in this course. The teacher will review these requirements at the start of the school year.**