

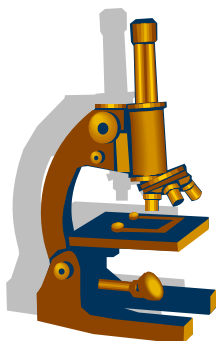
Science

Course Title	Description	Prerequisite(s)
Extended Science Laboratory	This one-year course is designed to provide extended laboratory experience for students concurrently enrolled in an Advanced Placement (AP) and senior level science courses. Students must be concurrently enrolled in an AP class in biology, chemistry, or physics in order to register for this course. This course will fulfill one of the two science credits required for graduation.	Grades 11-12 Concurrent enrollment in an Advanced Placement class is mandatory
Anatomy/ Physiology Honors	This is a one-year course designed for those students who have successfully completed Biology I and Chemistry I, and who exhibit interest in further study in biological science. Topics included are the structure and function of all systems of the human body. Demonstrations and laboratory experiences, problem solving and case study work are to be an integral part of the teaching of this course. This course will fulfill one credit of the Nevada high school graduation requirement, and it qualifies as a laboratory science for college entrance.	Grades 11-12 Concurrent enrollment in an Advanced Science Lab is mandatory GPA over 2.7
Biology I	This one-year course is designed as a survey of the biological sciences. The emphasis is on developing inquiry skills and problem-solving techniques while developing an understanding of major biological concepts. The course will also familiarize the students with the nature of science and technology. This course will fulfill one of the two science credits required for high school graduation and will meet college entrance requirements for a laboratory science.	Grades 10-12 Completion or concurrent enrollment in Algebra I
Biology I Honors	This one-year course is a rigorous presentation of introductory biological concepts designed for the serious, academically-oriented student. Emphasis is particularly placed on developing critical-thinking skills, research skills, and laboratory techniques. Independent study projects are an integral part of course requirements. This course fulfills one of the two high school graduation requirements for science and college entrance requirements for laboratory science.	Grades 9-12 Completion or concurrent enrollment in Algebra I Honors GPA over 2.7
Biology II AP	This is a one-year course with an emphasis on meeting the requirements of the College Board Advanced Placement ® Biology exam. This course is designed for those students desiring college level experience in the biological sciences. Emphasis will be placed on inquiry skills and problem solving. General themes of study will be: Science as a Process; Evolution; Energy Transfer; Continuity and Change; Relationship of Structure to Function; Regulation; Interdependence in Nature; Science, Technology and Society. Career opportunities in the biological sciences will also be explored. This course will fulfill one of the two science credits required for high school graduation, and will meet college entrance requirements for a laboratory science. It is expected students will take the AP exam in May. Fee is \$84, which must be paid by March 1st. If you have a financial hardship see your school counselor for assistance.	Grades 11-12 Concurrent enrollment in an Advanced Science Lab is mandatory Biology H and Chemistry H GPA over 2.7 Required scientific calculator is not provided
Chemistry I	This first-year course is designed for those students who have successfully completed Algebra I and exhibit an interest in science, especially chemistry. Topics included are mathematics of chemistry, safety, laboratory procedures, elements-compounds-mixtures, atomic theory and structure, structure and organization of the periodic table, mole concept, chemical bonding, nomenclature, chemical equations, stoichiometry, kinetic theory, gases-liquids-solids-solutions, acids-bases-salts, equilibrium, thermochemistry, electrochemistry, organic chemistry, nuclear chemistry, chemistry of the environment, and career opportunities. STS Issues will be an integral on-going part of this course. Additional topics may include history of chemistry, biochemistry, qualitative chemistry, research projects. This course will fulfill one of the two science credits required for high school graduation and will meet college entrance requirements for laboratory science.	Grades 10-12 C or better in both semesters of Algebra I Required scientific calculator is not provided

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Chemistry I Honors	This first-year course is designed for those students who have successfully completed Algebra I and exhibit an interest in science, especially chemistry. Topics included are: mathematics of chemistry, safety, laboratory procedures, elements-compounds-mixtures, atomic theory and structure, structure and organization of the periodic table, mole concept, chemical bonding, nomenclature, chemical equations, stoichiometry, kinetic theory, gases-liquids-solids-solutions, acids-bases-salts, equilibrium, thermochemistry, electrochemistry, organic chemistry, nuclear chemistry, chemistry of the environment, and career opportunities. Additional topics may include: history of chemistry, biochemistry, qualitative chemistry, and research projects. A science project is suggested for this course. This course qualifies for college entrance requirements for laboratory science. This course fulfills one of the science credits required for graduation.	Grades 10-12 Completed Biology I Honors <u>and</u> Algebra I Honors Required scientific calculator is not provided. GPA over 2.7
Chemistry II Honors	This second year course is designed to provide a comprehensive background for those students desiring an in-depth study of chemical concepts. Topics included are atomic theory and structure; chemical bonding; nuclear chemistry; gases, liquids and solids; solutions; reaction types; acids and bases; stoichiometry; equilibrium; kinetics; thermodynamics; electrochemistry; oxidation-reduction; descriptive chemistry; and an introduction to carbon chemistry. Laboratory work of quantitative and qualitative nature is used to develop manipulative skills and reinforce topic areas. This course will fulfill one of the two science credits required for high school graduation and college entrance requirements for laboratory science.	Grades 11-12 Concurrent enrollment in an Advanced Science Lab is mandatory C or better in Biology I and Chemistry I GPA over 2.7
AP Chemistry	This one-year course is designed to provide a comprehensive background for those students desiring an in-depth study of chemical concepts. This course will focus on meeting the requirements of the College Board Advanced Placement Chemistry exam. Instructors should refer to the current Advanced Placement course description for examination specifics. Topics included are atomic theory and structure; chemical bonding; nuclear chemistry; gases, liquids and solids; solutions; reaction types; acids and bases; stoichiometry; equilibrium; kinetics; thermodynamics; electrochemistry; oxidation-reduction; descriptive chemistry; and an introduction to carbon chemistry. Laboratory work of quantitative and qualitative nature is used to develop manipulative skills and reinforce topic areas. This course will fulfill one of the two science credits required for high school graduation and college entrance requirements for laboratory science. It is expected students will take the AP exam in May. Fee is \$84, which must be paid by March 1st. If you have a financial hardship see your school counselor for assistance.	Grades 11-12 Concurrent enrollment in an Advanced Science Lab is mandatory Required scientific calculator is not provided GPA over 2.7
Earth Science	This one-year course is designed to integrate the scientific principles related to the earth and its environment. Topics included are geology, astronomy, cosmology, ecology, meteorology, and oceanography. Scientific methodology and the metric system will be integrated throughout the course. Demonstrations and/or lab experiences are to be an integral part of instruction. This course will fulfill one of the two science credits required for high school graduation and will meet college entrance requirements for a laboratory science.	Grades 10-12 Completion or concurrent enrollment in Algebra I

Course Title	Description	Prerequisite(s)
Earth Science Honors	This one-year course is designed as a rigorous in-depth study of earth systems with a project-based approach to issues important in Southern Nevada. The course will use inquiry as a way to develop a deeper understanding of key scientific principles. Practical applications of technology, communication skills, independent research and technical writing skills will be emphasized as they pertain to concepts in meteorology, oceanography, geology and astronomy. The course will integrate basic concepts of physics, biology, chemistry, and environmental science. Cross-curricular relationships involving mathematics, social sciences and language arts will be essential elements of this course. Earth Science Honors – 6690H will fulfill one of the two science credits required for high school graduation and will meet college entrance requirements for a laboratory science.	Grades 9-12 Completion or concurrent enrollment in Algebra I Honors GPA over 2.7
Forensic Science Honors	This one-year course examines the principles and procedures employed in criminal and civil investigations. It includes all areas of scientific endeavor such as medicine, psychiatry, psychology, geology, physics, chemistry, and biology. Emphasis will be put on gathering, analyzing, and interpreting physical evidence, using modern laboratory technologies and procedures. Prerequisites for this course are Biology I and Chemistry I. This course will fulfill one science credit toward high school graduation and qualifies as a laboratory science for college entrance. Caution: Course content is graphic and requires mature students. Due to the sensitive and graphic nature of topics covered, an informed parental consent form is required and will be verified before the student is permitted to enroll. In addition, all interested students must have the written approval for enrollment by the instructor only. Space is limited. Seniors have priority.	Grades 11-12 C or better in both semesters of Chemistry I ‡ Requires signed and verified parental consent notification before registration Written instructor permission required. See Ms. Garry in Room 411
Geology/ Environmental Studies Honors	This is a one-year course designed for those students who desire an in-depth study of geology and related environmental issues. Successful completion of biology and chemistry is a prerequisite for this course and completion of physics is suggested. Knowledge from the prerequisite courses will be integrated with new geological concepts and applied to the investigation of a scientific problem. Topics of study will include mineralogy and petrology, topography, geologic time, paleontology, weathering and erosion, plate tectonics, structural geology, and hydrology, as well as environmental subjects such as natural hazards, geologic resources, population and carrying capacity, resource limitations and management, pollution and waste management, and sustainability. Emphasis will be placed on the geology of the Las Vegas area and on the importance of geology to environmental issues. Laboratory and field experiences of a quantitative nature will be an essential element of this course. This course will fulfill one of the two science credits required for high school graduation and will meet college entrance requirements for a laboratory science.	Grades 11-12 C or better in both semesters of prior science class Chemistry I and above GPA over 2.7
Physics I	This one-year course is designed for those students who have successfully completed Geometry and who exhibit an interest in science. Topics included are the following: laboratory procedures, mathematics review, safety, waves, optics, relativity, kinematics, dynamics, energy, heat, electricity and magnetism, and atomic structure. Physics is a course that informs students about the basic relationships of different forms of energy. Demonstrations and/or lab experiences are to be an integral part of this course. This course will fulfill one credit of the Nevada high school graduation requirement for science and qualifies as a laboratory science for college entrance.	Grade 11-12 C or better in both semesters of prior science class Chemistry I and above.

Course Title	Description	Prerequisite(s)
Physics I Honors	This one-year course is designed for those students who are concurrently enrolled in Algebra II/Trigonometry and who exhibit an interest in science. Topics included are the following: laboratory procedures, mathematics review, safety, waves, optics, relativity, kinematics, dynamics, energy, heat, electricity and magnetism, and atomic structure. Physics is a college-preparatory course that informs students about the basic relationships of different forms of energy through the use of math concepts. Demonstrations and/or lab experiences are to be an integral part of this course. This course will fulfill one credit of the Nevada high school graduation requirement for science and qualifies as a laboratory science for college entrance.	Grade 11-12 C or better in both semesters of prior science class Chemistry I Honors and above. GPA over 2.7
Physics II H	This one-year course is designed to provide a comprehensive background for those students desiring an in-depth study of mechanics and/or electromagnetism. A prerequisite for this course is concurrent enrollment or prior completion of Calculus. Topics in mechanics are kinematics, Newton's laws of motion, momentum, work, energy, power, rotational motion, angular momentum, and oscillation. Topics in electromagnetism are electrostatics, electrodynamics, and magnetism. Selected topics in optics, waves, thermodynamics, relativity, and modern physics will be studied in less depth. Laboratory experiences of a quantitative and qualitative nature are an essential element of this course. This course fulfills one credit of the high school graduation requirement for science and meets college entrance requirements for a laboratory science.	Grades 11-12 Physics I H Concurrent enrollment in an Advanced Science Lab is mandatory
Principles of Science	This is a one-year course that will present integrated concepts in earth science, biology, environmental science, chemistry, and physics. Demonstrations and/or lab experiences will be an important part of instruction. The concepts in Principles of Science will be taught by using the various processes involved in scientific inquiry. The course is designed to provide a foundation for further study in science as students explore unifying scientific principles and concepts. This course will satisfy one of the two science credits required for high school graduation and will meet college entrance requirements for a laboratory science.	Grades 9-10 Students with insufficient credits in 9 th and 10 th grade science classes are eligible for placement in this class
Zoology H	This one-year course is designed for those students desiring greater experiences in the biological sciences, specifically in zoology. General areas of study will include laboratory technique, levels of organization, evolutionary theory, ecological adaptations, and the anatomical and physiological characteristics of all major animal phyla. Emphasis will be placed on diversity within the animal kingdom as it relates to physiological adaptations and environmental pressures. This course will serve to familiarize students with educational and occupational opportunities in the field of zoology. This is a one-year advanced laboratory course designed to meet one of two science credits required for Nevada high school graduation, and is considered a laboratory science course for college admission.	Grade 11-12 Chemistry Concurrent enrollment in an Advanced Science Lab is mandatory



**Science Course Sequencing Recommendation
2008 – 2009**

Middle School to High School			
8th Grade Mathematics Class	Grade Earned	9th Grade Math Class Placement	9th Grade Science Class Placement
Math 8	ABCDF	Algebra I	Principles of Science
Pre-Algebra	AB CDF	Algebra I Fundamental Math Concepts	Principles of Science
Algebra I Honors	ABCD	Geometry Honors	Biology I Honors or Earth Science Honors

Ninth Grade to Tenth Grade			
9th Grade Science Class	Grade Earned	10th Grade Science Class Placement	Minimum Requirements for 10th Grade Science Class
Principles of Science	ABCDF	Earth Science	Algebra I
Earth Sciences	ABCD F	Biology I Earth Sciences	*Algebra I
Earth Science Honors	AB CD F	Biology I Honors Biology I Earth Science	*Algebra I Honors *Algebra I *Algebra I
Biology I	ABCD F	† Chemistry I Biology I	♪ Grade of C or better in Algebra I
Biology I Honors	ABCD F	† Chemistry I Honors Biology I	Grade of C or better in Algebra I Honors or Geometry ♪ *Algebra I

* Minimum requirement may be taken concurrently.

† Requires strong math skills and discipline. Must pass both semesters of Algebra I with a C or better.

♪ Students with an unsatisfactory grade in Algebra IB, Algebra I, Algebra I Honors or Geometry may be placed in Earth Science or Earth Science Honors.

**Science Course Sequencing Recommendation
2008 - 2009**

Tenth Grade to Eleventh Grade			
10th Grade Science Class	Grade Earned	11th Grade Science Class Placement	Minimum Requirements for 11th Grade Science Class
Earth Science	ABCD F	Biology I Earth Science #	* Algebra I * Algebra I
Biology I	ABCD F	† Chemistry I Biology I	♪ Grade of C or better in Algebra I
Biology I Honors	ABCD F	† Chemistry I Honors Biology I	Grade of C or better in Algebra I Honors or Geometry ♪ * Algebra I
Chemistry I or Chemistry I Honors	ABCD	† \$\$ Anatomy and Physiology Honors † Chemistry II Honors ‡ Forensic Science Honors Geology/Environmental Studies Honors † Physics I † Physics I Honors	C or better in <u>both</u> semesters of prior science class above Chemistry I ‡ Requires signed and verified parental consent notification. Instructor permission required. † \$\$ Concurrent enrollment in Advanced Science Lab is mandatory.
	F	† Chemistry I	* Algebra I

Students should not be allowed to repeat the same class a third time. Choose the alternate class.

* Minimum requirement may be taken concurrently.

† Requires strong math skills and discipline. Must pass both semesters of Alg I or Alg IB with a B or better.

‡ **Requires verified and signed parental consent notification. Instructor permission required.**

♪ Students with an unsatisfactory grade in Algebra IB, Algebra I, Algebra I Honors or Geometry may be placed in Physical Science, Earth Science or Earth Science Honors.

**Science Course Sequencing Recommendation
2008 - 2009**

Eleventh Grade to Twelfth Grade			
11th Grade Science Class	Grade Earned	12th Grade Science Class Placement	Minimum Requirements for 12th Grade Science Class
Earth Sciences	See Tenth Grade Sequencing Recommendations		
Biology I	See Tenth Grade Sequencing Recommendations		
Chemistry I	See Tenth Grade Sequencing Recommendations		
Anatomy and Physiology Honors Biology II AP † Chemistry II AP † Chemistry II Honors † Physics I † Physics I Honors † Earth Science AP †*	ABCD	Anatomy and Physiology Honors \$\$ Biology II AP † Chemistry II AP † † Chemistry II Honors ‡ Forensic Science Honors Geology/Environmental Studies Honors † Physics I † † Physics I Honors † Earth Science AP †* \$\$ Advanced Science Laboratory	† \$\$ Concurrent enrollment in Advanced Science Lab is mandatory. C or better in <u>both</u> semesters of prior science class above Chemistry I ‡ Requires signed and verified parental consent notification. Instructor permission required. \$\$ Concurrent enrollment in any AP Science or Advanced Science class is mandatory.

* Minimum requirement may be taken concurrently.

† Requires strong math skills and discipline. Must pass both semesters of Alg I with a B or better.

‡ **Requires verified and signed parental consent notification. Instructor permission required.**

\$\$ AP Biology, AP Chemistry, Anatomy and Physiology Honors, Chemistry II Honors.