

MATHEMATICS COURSES

Materials all math students will need to furnish: Notebook (3-ring binder-type), straight edge, graph paper, lined paper, pencil, and scientific calculator. Geometry students will also need a compass and protractor. Certain classes require a graphing calculator.

Teacher recommendation is suggested for correct math placement.

All students should expect daily homework and will need to invest time outside the classroom to be mathematically successful. Students will be expected to develop the ability to reason mathematically and apply learned concepts to new problem-solving situations.

ALGEBRA IA

Full Year

9 10 11

This is the first year of a two-year course designed for those students that require a slower-paced Algebra curriculum. Major topics include: real numbers and their properties, solving linear equations and inequalities, graphing and writing linear equations, simplifying polynomials, elements of statistics and probability and related topics. Throughout the year students will be expected to reason and communicate mathematically. Prerequisite: 8th grade math and teacher recommendation.

ALGEBRA IB

Full Year

10 11

This is the second year of a two-year Algebra I course. This course will continue students' exploration of the range of mathematical concepts introduced in Algebra IA. Additional topics include: systems, factoring, quadratic equations and functions, square roots, rational expressions and related topics. Throughout the year students will be expected to reason and communicate mathematically. Prerequisite: Algebra IA

ALGEBRA I

Full Year

9 10 11 12

Algebra is designed to teach the fundamentals of algebra. This course lays the foundation of knowledge and skills needed in subsequent college preparatory mathematics courses. Major topics include: real numbers and their properties, linear equations and inequalities, graphing, systems of equations, polynomials, factoring, square roots, quadratic equations and problem solving using a variety of algebraic strategies. Throughout the year students will be expected to develop the ability to reason and communicate mathematically, and apply learned concepts to new problem solving situations. Prerequisite: 8th grade math.

GEOMETRY

Full Year

9 10 11 12

Geometry is designed to develop deductive reasoning throughout the study of definitions, postulates and theorems as they apply to plane and solid geometric figures. Major topics include: polygon congruence and similarity, circles, transformational geometry, coordinate geometry, constructions, right triangles, trigonometric ratios, formulas of area, perimeter, volume, and surface area. Algebraic techniques are used to solve problems involving geometric relationships. Prerequisite: Algebra I.

GEOMETRY (HONORS)

Full Year

9 10

This is an accelerated Geometry course for high achievers. This class is intended for the student who plans on enrolling in Honors Algebra II, Honors Trigonometry/Pre-Calculus, and finally into AP Calculus. Traditional Geometry topics will be rigorously developed at a much faster pace and more in depth than in regular Geometry. Additionally, Honors Geometry will include the development of formal proofs. A summer assignment is required. **Credit in this course applies toward the Honors Diploma.** Prerequisite: teacher recommendation, Algebra I and passing of the Algebra I challenge test at an honors level as defined by the Mathematics Department.

ALGEBRA II A

Full Year

11 12

This is the first year of a two year Algebra II course designed for those students that require a slower paced Algebra II curriculum. Algebra IIA is designed to strengthen and enhance problem solving techniques through further investigation of the basic knowledge of Algebra I and Geometry. Major topics include: equations and inequalities, linear equations and functions, systems and matrices, quadratic functions and polynomials. Prerequisite: teacher recommendation and below average performance in Algebra I and/or Geometry.

ALGEBRA II B
Full Year
11 12
(available 2010-2011 school year)

This is the second year of a two year Algebra II course. This course will continue students' exploration of the range of mathematical concepts introduced in Algebra IIA. Additional topics include: conic and quadratic relations, probability and statistics, rational equations and functions. Graphing calculators are used to investigate, describe, solve, and verify solutions. Prerequisite: Algebra IIA.

ALGEBRA II
Full Year
10 11 12

Algebra II is designed to strengthen and enhance problem solving techniques through further investigation of the basic knowledge of Algebra I and Geometry. Major topics include: equations and inequalities, linear equations and functions, systems and matrices, quadratic functions, polynomials, conic and quadratic relations, probability and statistics, rational equations and functions. Graphing calculators are used to investigate, describe, solve, and verify solutions. The course primarily focuses on preparing students to further their education in higher mathematics. Prerequisites: Algebra I and Geometry.

ALGEBRA II (HONORS)
Full Year
10 11

This is an accelerated Algebra II course for high achievers. This class is intended for the student who plans on enrolling in Honors Trigonometry/Pre-Calculus, and finally into AP Calculus. Traditional Algebra II topics will be rigorously developed at a much faster pace and more in depth than in regular Algebra II. Honors Algebra II will also delve into elementary trigonometric subjects. A summer assignment is required. **Credit in this course applies toward the Honors Diploma.** Prerequisite: Algebra I, Honors Geometry, and teacher recommendation.

**TRIGONOMETRY/
PRE-CALCULUS**
Full Year
11 12

Trigonometry/Pre-Calculus is intended for the college bound student with strong Algebra skills. This course is designed to enable students to grasp trigonometric principles, apply them in various fields of mathematics and science, and develop a strong foundation of mathematical concepts using analysis and technology for solving real life problems. Ownership of a graphing calculator is recommended. Prerequisite: Algebra II and teacher recommendation.

**TRIGONOMETRY/PRE-
CALCULUS (HONORS)**
Full Year
11 12

This is an accelerated Trigonometry/Pre-Calculus course for high achievers. This class is intended for the student who plans on enrolling in AP Calculus. Traditional Trigonometry/Pre-Calculus topics will be rigorously developed at a much faster pace and more in depth than in regular Trigonometry/Pre-Calculus. Additionally, introductory Calculus concepts such as limits, continuity, and derivatives will be explored. Ownership of a graphing calculator is recommended. A summer assignment is required. **Credit in this course applies toward the Honors Diploma.** Prerequisite: Honors Algebra II and teacher recommendation.

**INTRODUCTION TO
CALCULUS**
Full Year
11 12

This is a high rigor class designed to introduce college bound students to the concepts of Calculus, and to help ready them for college level Calculus. This class will address a wide range of concepts designed to strengthen math skills, and Calculus specific concepts to include limits and derivatives. Taking this class does not prepare the student for the AP Calculus test, and there is no opportunity to receive college credit by taking this class. Prerequisite: Satisfactory completion of Trigonometry/Pre-Calculus and teacher recommendation.

AP CALCULUS

Full Year

12

AP Calculus is a one year course that explores in depth the concepts of limits, differentiation and integration. Emphasis is on real life problem solving using technology as well as traditional methods. Ownership of a graphing calculator is required. An Advanced Placement Contract **must** be signed by the student in order to take this class. Students will be **required** to complete a summer assignment. Students **must** take the Advanced Placement Exam in May. The Advanced Placement Exam fee is approximately \$90, which is non-refundable and **must** be paid by the end of the first quarter. **Students may gain college credit by passing the Advanced Placement Examination. Credit in this course applies toward the Honors Diploma.** Prerequisite: Honors Trigonometry/Pre-Calculus and teacher recommendation. **Lab/Exam Fee: \$90.**

STATISTICS

Full Year

11 12

Statistics will teach the students to think critically about data, to select graphical and numerical summaries with and without a graphing calculator, to apply standard statistical inference procedures, and to draw mathematical conclusions. Technology and the use of a required TI 83 or TI 84 graphing calculator will play a major role in this course. Prerequisite: C or better in Algebra II and teacher recommendation.

PRACTICAL MATH

Full Year

11 12

Practical Math is designed for seniors as a credit recovery class for graduation. Integrated math topics intended to reinforce the students' algebra and computational math skills. Major topics will include: algebra, geometry, probability and statistics, presented in terms of consumer math, measurement and conversions, graphs and charts, data organization and interpretation, and mathematical problems encountered in everyday life. Prerequisite: Passing score on the High School Proficiency Math Exam.

PROFICIENCY MATH

Semester

11 12

This course is designed to help students who have failed the Nevada High School Proficiency Exam in math. The curriculum will cover the standards tested by the state department, on an as needed basis, to include: numbers and operations/algebraic concepts, geometry and measurement, probability, statistics and data analysis. Test taking strategies and study skills will also be taught to help students prepare for future exam opportunities. **Completion of this course does not guarantee success on the High School Proficiency Math Exam.** Prerequisite: Failure of the High School Proficiency Math Exam.