



## Math Course Descriptions

### **Algebra 1, 2**

This class is an introduction to basic algebra. This course is designed to prepare students to meet the AZ Math Standards graduation requirement and provide students with the mathematical background necessary to meet college entrance requirements. Concept units include translating written statements into algebraic expressions, linear equations, linear inequalities, graphing, integer exponents, and polynomials. Also includes factoring, literal equations, square roots, quadratic equations, systems of equations, and optional topics.

### **Algebra 1, 2 - Honors**

Honors Algebra is taught at an accelerated pace with enrichment. The depth and breadth of the course prepare students for the theoretical and rigorous experiences they encounter in Pre-calculus.

### **Algebra II 1,2**

This course extends and applies the concepts of algebra and geometry, and prepares students for enrollment in Pre-calculus. This serves as one of the math requirements for entrance at the college/university level. The curriculum includes lines in the plane, systems of linear equations, inequalities, polynomial, rational expressions and equations, and radical expressions and equations. Students will use analytical, numerical, graphical, and verbal approaches to solving problems. Also included are quadratic equations, literal equations, exponential, and logarithmic functions, sequences and series and optional topics.

### **Algebra II 1,2 - Honors**

An accelerated third-year course that extends the concept of algebra and geometry, and prepares students for enrollment in Pre-Calculus. This serves as one of the math requirements for entrance at the college/university level. The curriculum includes topics from Intermediate Algebra, but is at a higher level of rigor. Students will use analytical, numerical, graphical, and verbal approaches to solving problems. Topics include higher degree equations, functions, systems and graphs, and trigonometric functions.

### **Calculus AB 1, 2 - [AP Calculus AB]**

This course uses the concepts of analytic geometry and provides a rigorous in-depth study of the first two semesters of differential and integral calculus. Topics included in the course are limits, continuity, differentiation, and the integration of algebraic and basic trigonometric functions. Throughout the course, understanding is stressed over memorization. Practical problems and applications are studies to help students appreciate the calculus as a problem-solving tool.

### **College Algebra 1, 2**

This course begins with a brief review of Intermediate Algebra concepts then progresses to a rigorous, in-depth study of college level algebra. Topics include solving linear, quadratic, rational, absolute value, polynomial, exponential and logarithmic equations. Also included, is the study of functions, their characteristics, and their graphs. Additional topics include systems of equations, systems of inequalities, matrices and determinants, sequences and series.

### **Geometry 1, 2**

Geometry is designed for students who successfully completed a high school algebra course and are prepared to learn the concepts and content of what is taught in a "traditional" high school geometry course, such as Euclid's Elements. Students who earn a "D" or lower in Algebra are strongly encouraged to retake Algebra during the summer before taking this class, since much of the content explored is through an Algebraic lens. Concept units include foundations and tools for geometry, constructions, introduction to transformational geometry, proving geometric theorems, triangle congruence, quadrilaterals, similarity, trigonometry, two and



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three dimensional figures, and circle, as well as a more robust trigonometry section including six trigonometric functions, Law of Sine,, and Law of Cosines.

### **Geometry 1, 2 - Honors**

This course is designed to provide students with the mathematical background necessary for careers in science, mathematics or engineering. Concept units are similar to those in Geometry 1-2 and focus on tasks that are inquiry based, more in depth and also more abstract and more formal than the non-Honors class. Problem solving and logical reasoning skills are emphasized in Honors Geometry through an extensive use of formal geometric proof and multi-step exercises. This course is designed for students who plan to take Pre-Calculus or Calculus in high school. This course is an integration of technology, inquiry-based learning, critical thinking, with a culminating capstone project.

### **Mathematical Finance 1,2**

This course will enable students to implement the decision-making skills they must apply and use to become knowledgeable consumers, savers, investors, users of credit, money managers, citizens, and members of a 21st Century global workforce and society. Students will incorporate concepts, skills, and critical thinking from mathematics, language arts, social studies, and applied technology. Using techniques such as problem solving, reasoning, simulation, and direct application of these concepts, students will be empowered to become informed citizens of the 21st century. Students will explore the real number system, linear equations and inequalities, Quadratics, polynomials, exponential equations, logarithmic equations, data, spreadsheets, scatter pots, regressions, modeling, and much more and apply these to real-world financial situations.

### **Pre - Calculus 1, 2**

This course is designed to rigorously strengthen and continue the study of algebra at an advanced level. It provides an in-depth study of advanced mathematics topics, which include trigonometry, equations and inequalities in one or more variable (both linear and quadratic), and an extended understanding of functions, with heavy emphasis in graphing.

### **Statistics and Probability 1, 2**

Statistics offers students an introduction to the major concepts and tolls for collecting analyzing, and drawing conclusions from data. Statistics examines the method for planning experiments, obtaining data, and then analyzing and interpreting that data.

### **AP Statistics and Probability**

The purpose of the AP course in statistics is to introduce students to the major concepts and tools for collecting, analyzing, and drawing conclusions from data. Students are exposed to four broad conceptual themes: 1. Exploring Data: Describing patterns and departures from patterns 2. Sampling and Experimentation: Planning and conducting a study 3. Anticipating Patterns: Exploring random phenomena using probability and simulation 4. Statistical Inference: Estimating population parameters and testing hypotheses