High School Math Courses

Course	Skills	Course	Skills
Algebra 1 Part 2	The course continues from Algebra 1, Part 1 in the study of the real number system. Utilizing algebraic operations, solving linear equations and inequalities, graphing equations, and solving quadratic equations are developed to increase problem-solving skills.	**Geometry**	The accelerated geometry course fosters an understanding of the special properties of two- and three-dimensional figures and emphasizes the relationships among angles, points, lines, triangles, polygons, and circles. Organization of information to draw logical conclusions and algebraic problem solving skills will be stressed.
Algebra 1	Students will study the real number system. The topics of utilizing algebraic operations, solving and graphing linear and quadratic equations and inequalities are developed to increase problem solving skills.	**Honors Algebra II**	Honors Algebra 2 is a course designed to challenge mathematically talented students through the use of problems involving higher level thinking skills. The course will briefly review Algebra 1 then move through a sequential study of inequalities, linear and quadratic functions, polynomials, higher degree equations, exponents, complex numbers, conic sections, and coordinate geometry.
Honors Geometry	The Honors Geometry course fosters an understanding of the special properties of two and three-dimensional figures and emphasizes the relationships among points, lines, angles, triangles, polygons, and circles. An emphasis will be placed on the deductive proof.	**Honors Math 1**	This course is available for students who have demonstrated an outstanding ability and a genuine interest in the field of mathematics. Students will be invited to participate in the Honors sequence. After briefly reviewing Algebra 1 concepts, the course continues with polynomial equations and inequalities, functions (polynomial, absolute value, exponential, and logarithmic), sequences, series, statistics, and probability.

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Algebra II	After a short review of introductory algebra, this course will examine quadratic functions, variations, irrational expressions, systems of equations, complex number, functions, coordinate geometry, conic sections, and logarithms.	**Pre-calculus**	Students will study triangles, trigonometric functions, and functions in general. Complex numbers, polar coordinates, and DeMoivre's Theorem are introduced. The circle, parabola, ellipse, and hyperbola are studied in detail.
Honors Pre-calculus	Honors Pre-calculus is designed to challenge mathematically talented students through the study of complex numbers, polar coordinates, conic sections, and limits, and polynomial, trigonometric, linear, quadratic, rational, exponential and logarithmic functions.	**Calculus**	Students will study elementary functions, analytic geometry, limits, and continuity. The derivative and the integral and their applications are also studied.
Honors Math 2	Honors Math 2 is an honors course for which students with outstanding mathematical talent are selected. The content includes a full course in trigonometry followed by an introduction to calculus. Topics are covered faster and in more depth and the level of difficulty is greater than that in non-honor classes.	**Honors Calculus**	In this course, mathematically talented students will review functions, and study the topics of limits, continuity, derivatives, extremes, the integral, and applications.
Algebra III	In Algebra III students will study probability, statistics, matrices, logarithms, conic sections, relations, functions, and trigonometry.	**Mathematics Elective Course AP Statistics**	Students will study four major statistical themes: Exploring Data, Sampling and Experimentation, Anticipating Patterns, and Statistical Inferencing. This accelerated statistics class prepares students for taking the required Advanced Placement Statistics Examination.

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AP Calculus	Students will study representing functions in the following ways: graphically, numerically, analytically and verbally. Students will study the use of derivatives in a variety of problems including of rate of change. Students will study the use of integrals in problem solving. Students will be using technology to help solve problems, interpret results and verify conclusions. Students electing this course are required to take the Advanced Placement Calculus AB Examination	**Mathematics Elective Course Statistics**	The purpose of this course is to provide students with an elementary understanding of statistics through a deeper investigation into the role statistics plays in understanding real-world problems. Students will learn about Descriptive and Inferential statistics and will use graphical and quantitative descriptors. They will study correlation, regressions, sampling, simulations, and test for variance including standard deviation. The TI-84 graphing calculator will be used extensively in this class.
Mathematics Elective Course Java	Computer Math Java is a full-year computer programming course using Java language to solve problems by incorporating data and control structures, methods, and algorithm analysis. The essentials of object-oriented programming and simple graphics are also explored.	**Mathematics Elective Course AP Java**	This is an advanced course in Java emphasizing programming methodology and functional abstraction, including the study of algorithms, data structures, and data manipulation with respect to the APCS Java subset. Topics of the AP Computer Science curriculum, Level A and AB will be examined. Students electing the course are required to take an Advanced Placement examination in computer science at the end of this course.