Mathematics Courses

Algebra I
Required for students in grade 8 or 9
Prerequisites: Successful completion of 7th grade math
Credit: Successful completion of this year long course will result in 1 earned high school Math credit.
This is a required course with an emphasis on formulas, first and second degree equations, graphs, and word applications. Other topics include exponential functions, radicals, inequalities, rational expressions, quadratic equations and polynomial patterns.

Geometry
Required for students in grade 9 or 10
Prerequisites: Successful completion of Algebra I
Credit: Successful completion of this year long course will result in 1 earned high school Math credit.
Geometry is the study of the methods of mathematical reasoning using the physical world as a model. Relationships between straight and curved lines, planes, and both flat and solid shapes are studied. Students apply what they know about two-dimensional figures to three-dimensional figures in real-world contexts, building spatial visualization skills and deepening their understanding of shape and relationships. Geometry includes a study of right triangle trigonometry that is developed through similarity relationships. Connections between transformations of linear and quadratic functions to geometric transformations will be made. Students will apply the laws of logic including using formal proofs of theorems.

Algebra II
Required for students in grade 10 or 11
Prerequisites: Successful completion of Algebra I and Geometry
Credit: Successful completion of this year long course will result in 1 earned high school Math credit.
This course in an extension of Algebra I, followed by the treatment of new topics, including linear functions and equations, inequalities, quadratics, polynomial and rational expressions, exponential and logarithmic functions, conics, trigonometry, probability and statistics.

Pre-Calculus
Available for students in grade 11, 12
Prerequisite: Successful completion of Algebra I, Geometry, Algebra II
Credit: Successful completion of this year long course will result in 1 earned high school Math credit
Pre-calculus is the preparation for calculus. The study of the topics, concepts, and procedures of pre-calculus deepens students' understanding of algebra and extends their ability to apply

algebra concepts and procedures at higher conceptual levels, as a tool, and in the study of other subjects. The theory and applications of trigonometry and functions are developed in depth. New mathematical tools, such as vectors, matrices, and polar coordinates, are introduced, with an eye toward modeling and solving real-world problems. Study of the topics, concepts, and procedures of pre-calculus is very strongly recommended for all college-bound students. These topics, concepts, and procedures are prerequisites for many college programs in science, engineering, medicine, and business.

AP Calculus AB
Available for students in grade 12
Prerequisites: Successful completion of Algebra I, Geometry, Algebra II, Pre-Calculus. A "B" or better in pre-calculus is required to take this course.
Credit: Successful completion of this year long course will result in 1 earned high school Math credit.
This course is an introduction to calculus, including functions, limits, derivatives and integrals, with applications to physical problems. AP Calculus serves as a bridge to college calculus. Topics include limits, differentiation, and integration. Upon completion students are eligible to take the AB portion of the AP exam for possible college course credit.

Statistics and Probability
Available for students in grade 11, 12
Prerequisites: Successful completion of Algebra I, Geometry, Algebra II
Credit: Successful completion of this year long course will result in 1 earned high school Math credit.
The student will analyze and manage data as well as develop the insight and skills that are needed to confront our data-oriented society. The concepts of probability and statistics are applied to a variety of subject areas which will motivate the student by showing how concepts are covered and applied to real-life situations. This course focuses on statistical thinking over calculation.

Independent Math
Available for students in grade 9, 10, 11, 12
Prerequisites: Faculty recommendation
Differentiated instruction for students that are advanced as well as those that find the material to be very challenging. Instruction is provided in a small group setting, no larger than 10 students at any time. Each course of study is individualized for the learning needs of each specific student enrolled in this course.