MATH 7

Full Year	1 credit	Grade 7

This course follows a regular seventh grade program as outlined in the New York State Mathematics Curriculum. The emphasis is on having each student demonstrate proficiency with basic computational skills in working with whole numbers, decimals, fractions, and percents, and to acquire facility with basic geometric skills, geometric concepts, and probability.

MATH 7 ACCELERATED

Full Year	1 credit	Grade 7

This course builds on previous computational mathematics and expands to emphasize pre-algebra skills. Students will explore different concepts through investigative and problem solving techniques to develop critical thinking. The students will be prepared to begin the study of high school mathematics at the completion of this course.

Pre-requisite: Department recommendation based on entrance exam scores

MATH 8

Full Year	1 credit	Grade 8

This course follows the New York State Mathematics Core Curriculum. Topics include mathematical reasoning, number and numeration, operations, modeling and multiple representations, measurement, geometry concepts, probability, patterns, and functions. A scientific calculator is used in this course. Upon completion of this course, the student will be prepared to successfully begin the study of high school mathematics.

ACCELERATED MATH 8 (Algebra)

Full Year	1 credit	Grade 8

This course is designed and offered to those eighth grade students who have demonstrated superior achievement in mathematics in their previous mathematics course and show the capability to learn at an accelerated pace. Topics include the real number system, elementary algebra, algebraic fractions, linear and quadratic functions, circles, systems of equations, operations with radical numbers and coordinate geometry. The students will take the New York State Algebra regents at the end of this course. The use of a graphing calculator is incorporated into this course.

Prerequisite: Department recommendation

ALGEBRA

Full Year	1 credit	Grade 9

This course is a unified program designed for most ninth grade students. Topics include the real number system, elementary algebra, algebraic fractions, linear and quadratic functions, circles, systems of equations, operations with radical numbers and coordinate geometry. The use of a graphing calculator is incorporated into this course. The students take the New York State Algebra regents at the end of the course.

GEOMETRY HONORS

Full Year	1 credit	Grades 9-10

This course is designed for recommended students of superior mathematical ability who have excelled in all previous math courses. The course goes beyond the normal core curriculum to include more in-depth study of geometry concepts using advanced algebra. The use of a graphing calculator is incorporated into this course. Students take the NYS Geometry Regents Exam at the end of this course.

GEOMETRY

Full Year	1 credit	Grades 9-10

This course is designed for most tenth grade students. The topics include, but are not limited to, concepts of algebra, logic, plane geometry, probability, mathematical systems, quadratic equations, and trigonometry of a right triangle. The use of a graphing calculator is incorporated into this course. In addition, students are prepared to take the New York State Geometry Regents Examination at the end of this course.

ALGEBRA II/TRIGONOMETRY HONORS

Full Year	1 credit	Grades 10-11

This course explores an in depth study of the topics in Algebra II/Trigonometry. Additional topics such as factoring by grouping, synthetic division, sum and difference of perfect cubes and domain and range of advanced level functions are studied. The graphing calculator is incorporated to illustrate various graphs, including such topics as line of best fit, trigonometric graphs, and direct and inverse variation. In addition, students take the New York State Math B Regents examination at the end of this course.

ALGEBRA II/TRIGONOMETRY

Full Year	1 credit	Grades 10-11

This course explores a variety of proofs involving geometry, logic, circles, similarity, and the indirect method. Statistics, probability, trigonometric applications, advanced algebra, and complex numbers are also covered. The graphing calculator is incorporated to illustrate various graphs, including such topics as line of best fit, trigonometric graphs, and direct and inverse variation. Students take the New York State Math B Regents examination at the end of this course.

PRE-CALCULUS

Full Year	1 credit	Grade 11

This course is intended to strengthen the mathematical concepts encountered in the first three years, as well as preparation for calculus. Topics will include coordinate geometry, functions and their graphs, inequalities, trigonometry, techniques of equation solving, complex numbers, sequences and series, polynomials, logarithms and exponential equations, limits, and beginning derivatives. This course is recommended for those students who intend to continue with some study of mathematics.

HONORS ANALYSIS & DIFFERENTIAL CALCULUS

Full Year	1 credit	Grade 11

The first semester of this course is an intensive study of the properties of polynomial functions, rational functions, exponential and logarithmic functions, conic sections, and sequences/ series. The second semester is the study of derivatives and their applications. All derivatives are studied from an algebraic, numerical, analytical, and graphical approach. Students who successfully complete this course will take Advanced Placement Calculus the following year.

Prerequisite: Department recommendation

MODELING FUNCTIONS/STATISTICS

Full Year	1 credit	Grade 12

This course is designed to offer students the opportunity to review and strengthen algebraic concepts. The first half of this course focuses on graphical, numerical, symbolic, and verbal approaches to investigate data, functions, equations and models. The second semester of the course is a study of statistics concepts, taught by using a hands on approach. A graphing calculator is used extensively in this course.

PRE-CALCULUS/ PROBABILITY & STATISTICS

Full Year	1 credit	Grade 12

The first semester of this course consists of topics involving the analysis of several functions, sequences and series, limits, and the beginning of derivatives. The second semester concentrates on models involving probability and statistics with several applications. A graphing calculator is used in this course.

CALCULUS

Full Year	1 credit	Grade 12

This is an advanced course covering differential and integral calculus with related applications. This course is intended for students who are not able to be in the AP Course in the junior year, and /or who will be required or elect to take Calculus in college. These students have proven proficient in their math courses over the first three years. A graphing calculator is used in this course.

Prerequisite: Pre-Calculus

ADVANCED PLACEMENT (AP) CALCULUS

Full Year	1 credit	Grade 12

This course is recommended for talented students who wish to pursue a math-related field in college. Advanced placement calculus is a fast-paced course, which is started in the junior year. It is an in-depth study of elements of differential and integral calculus with emphasis placed on the graphical, analytical, algebraic, and verbal interpretations of concepts. The TI-83 Plus graphing calculator is used extensively in this course. College credit or advanced standing may be granted on the basis of the student's score on the AP exam.

Prerequisite: Analysis & Differential Calculus

ADVANCED PLACEMENT (AP) STATISTICS

Full Year	1 credit	Grades 11-12

The purpose of this course is to introduce junior and senior students to the major concepts and tools for collecting, analyzing, and drawing conclusions from data. Students are exposed to exploring data, sampling and experimentation, anticipating patterns, and statistical inference. The TI-83 Plus graphing calculator will be used for data analysis. Students will take the Advanced Placement exam in May.

COMPUTER 8

One Semester	½ credit	Grade 8

This course provides a minimum level of computer literacy in preparation for lifelong use of the computer as an educational tool. Studies include a history of computers and their impact on society. The students are given the opportunity to gain a working knowledge of the software packages included in *Microsoft Office.* Practice is also provided in using the Internet effectively to search for information.

COMPUTER APPLICATIONS

Full Year	1 credit	Grade 11-12

This course is designed to give students an overview of many computer applications that are used "in the real world" today. An emphasis is placed on developing practical computer skills for use in college and beyond. Potential topics include: computer graphics; creation of multimedia segments used to prepare printed and video graphics, presentations, and multimedia; basic concepts involved in the construction of a Web page; basics of Computer Programming and/or computer control; and using the computer for 3D modeling.