MATHEMATICS PROGRAM

Grade	Courses Offered	Semesters
Note: Mathematics courses are open to students of any grade level who meet the prerequisites listed in the course descriptions.	**Advanced Placement Calculus AB**	**Two Semesters**
	Advanced Placement Calculus BC	**Two Semesters**
	Advanced Placement Computer Programming A	**Two Semesters**
	Advanced Placement Statistics	**Two Semesters**
	Algebra 1	**Two Semesters**
	Algebra 1B	**Two Semesters**
	Algebra 2 & Trigonometry	**Two Semesters**
	Applied Math	**Two Semesters**
	Computer Programming	**One Semester**
	General Math	**Two Semesters**
	Geometry	**Two Semesters**
	Introduction to Algebra 1	**Two Semesters**
	Introduction to Algebra 2	**Two Semesters**
	Math Seminar	**One Semester**
	Precalculus	**Two Semesters**
	Statistics	**One Semester**
	Topics in Algebra 2 & Trigonometry	**Two Semesters**
	Topics in Geometry	**Two Semesters**

Credits must be earned in both semesters before advancing to the next course in the sequence. Various sequences are offered to enable students to fit their interests and abilities.

HIGH SCHOOL MATH ARTICULATION

(This articulation schedule is a model. Please see your counselor different math options.)

8th Grade	9th Grade	10th Grade	11th Grade	12th Grade
Fast Paced Math (HS Geometry)	**Advanced Algebra 2 and Trigonometry**	**Advanced Precalculus**	**BC Advanced Placement Calculus**	**Math Elective**
Enriched Math (HS Algebra)	**Advanced Geometry**	**Advanced Algebra 2 and Trigonometry**	**Advanced Precalculus**	**Advanced Placement Calculus**
Investigating Algebra Part A	**Algebra 1B**	**Geometry**	**Algebra 2 and Trigonometry**	**Precalculus**
Regular Math (PreAlgebra)	**Algebra**	**Geometry**	**Algebra 2 and Trigonometry**	**Precalculus**
8th Grade Math	**Introduction to Algebra 1**	**Introduction to Algebra 2**	**Topics in Geometry**	**Topics in Algebra 2 and Trig.**

ADVANCED PLACEMENT CALCULUS AB (A)

Two Semesters

Prerequisite: Precalculus 2 (I)

Recommended: Students taking I level Precalculus enroll in Calculus AB. Students enrolled in A level Precalculus, who receive an A or B, should enroll in Calculus BC. Students who receive a C in A level Precalculus should consult their instructor for guidance in placement.

Advanced Placement Calculus AB is a college-level calculus course designed for the student with a high ability in mathematics. The course follows the syllabus of the Advanced Placement Calculus AB and enables a student to test out of one semester of college calculus. The topics in this course include functions, graphs, and limits; derivatives and their applications; and the integral and its applications, and transcendental functions. The graphing calculator will be required and used extensively.

ADVANCED PLACEMENT CALCULUS BC (A)

Two Semesters

Prerequisite: Precalculus 2 (A)

Recommended: Students taking A level Precalculus enroll in Calculus BC. Students enrolled in A level Precalculus who receives an A or B should enroll in Calculus BC. Students who receive a C in A level should consult their instructor for guidance in placement.

Advanced Placement Calculus BC is a college-level calculus course designed for the student with high mathematical ability. The course follows the syllabus of the Advanced Placement Calculus BC. The topics in this course include the rate of change of a function, limits, derivatives of algebraic functions, applications of the derivative, integration, applications of the definite integral, transcendental functions, infinite series, and differential equations. The graphing calculator will be required and used extensively.

AP Calculus BC enables a student the opportunity to test out of two semesters of college Calculus.

ADVANCED PLACEMENT COMPUTER PROGRAMMING A (A)

Two Semesters

This course qualifies for Math or Technology Credit.

Prerequisite: Computer Programming

Advanced Placement Computer Programming A is a continuation of Computer Programming. It follows the syllabus of the Advanced Placement Computer Science A curriculum. The course is built around the development of computer programs or parts of programs that correctly solve a given problem. Addition lab time may be needed to complete the course requirements.

ADVANCED PLACEMENT STATISTICS (A)

Two Semesters

Prerequisite: Precalculus (I or A) or Algebra 2 and Trigonometry with teacher recommendation

Advanced Placement Statistics is an introductory, non-calculus-based course in statistics. It will introduce students to the concepts and tools for collecting, analyzing, and drawing conclusions from data. Four broad conceptual themes will be covered: 1) exploratory analysis of data, 2) planning a study, 3) probability, and 4) statistical inference. The graphing calculator (use of a TI-83 is an expectation for the Advanced Placement Test) will be used throughout the course. Students who complete this course will be prepared for and should take the Advanced Placement Statistics exam.

ALGEBRA 1 (I)

Two Semesters

Prerequisites: Successful completion of middle school mathematics

The topics covered in the first semester of Algebra 1 include operations, solving equations, proportions, percent problems, polynomials, graphing lines, and writing linear equations. Topics covered in the second semester include system of equations, inequalities, factoring, rational expressions, functions, quadratics, probabilities, and statistics.

ALGEBRA 1B - PART B (I)

Two Semesters

Prerequisites: Successful completion of middle school Investigations in Algebra or an equivalent course

The topics covered in Algebra 1B include, but are not limited to, solving systems of equations by elimination and substitution, solving equations and inequalities, radicals/inequalities, exponents, polynomials, factoring, parabolas, exponential, linear functions and rational functions, and quadratic equations.

ALGEBRA 2 & TRIGONOMETRY (I, A)

Two Semesters

Prerequisite: Algebra 1
Recommended: Geometry

The topics covered in Algebra 2 and Trigonometry include the language of Algebra, variations and graphs, linear relations, matrices, logarithms, linear combination methods, substitution method, quadratic equations, functions, powers, exponents, polynomials, and trigonometry. The graphing calculator will be used extensively.

APPLIED MATH (R)

Two Semesters

Prerequisite: Recommendation of teachers, General Math or its equivalent, Grades of D or below in the Introduction to Algebra Sequence

Applied Math is designed for the student with limited mathematical skills. Applied Math provides the student with living skills such as, but not restricted to, banking, calculators, interest, budgets, personal income, geometry, investments, and taxes.

COMPUTER PROGRAMMING (I)

One Semester

This course qualifies for Math or Technology Credit.

Prerequisite: Algebra 1

Computer Programming consists of an introduction to computer programming in which students learn how to write computer programs in a specified language. The student will learn the fundamentals of computer programming, and the structured programming skills that can be used with any language. Additional lab time may be needed to complete the course requirements.

GENERAL MATH (R)

Two Semesters

Prerequisite: Teacher or counselor recommendation

General Math consists of individualized instruction in basic computational skills, concepts of measurement, spatial relations, and application to everyday math problems. Students must have counselor and teacher recommendations to enroll in this class.

GEOMETRY (I, A)

Two Semesters

Prerequisite: Middle School Algebra or Algebra 1

The topics covered in Geometry include distance, betweenness, lines and planes, angles and triangles, triangular inequalities, perpendicular lines and planes, area of polygonal regions, similarity, circles and spheres, measures relating to circles, and solids and their volumes.

INTRODUCTION TO ALGEBRA 1 (I)

Two Semesters

Prerequisite: Successful completion of Middle School Mathematics

Introduction to Algebra 1 introduces the two-year sequence of Algebra. The topics covered include an introduction to sets, basic number of properties, use of variables to set up and solve open sentences, ratio, proportion, percent, measurement, and operations with real numbers.

INTRODUCTION TO ALGEBRA 2 (I)

Two Semesters

Prerequisite: Successful completion of Introduction to Algebra 1

Introduction to Algebra 2 is the second year of the two-year sequence of Introduction to Algebra classes. The topics covered include properties of order, powers and roots of real numbers, polynomials, relations and functions, linear systems, rational expressions, and quadratic equations.

MATH SEMINAR (I)

One Semester

Prerequisite: Algebra 2 & Trigonometry

The topics in Math Seminar include but are not limited to election theory, graph theory, group ranking methods, apportionment, trees, networks, basic history of mathematics, and various problem-solving activities.

PRECALCULUS (I, A)

Two Semesters

Prerequisite: Algebra 2 & Trigonometry

The first semester of Precalculus covers advanced topics of Algebra and Trigonometry that will be needed for further math courses. The topics covered in this course include the study of Algebraic functions and Trigonometry from the standpoint of the unit circle, which reinforces much of the material covered in Algebra 2 and Trigonometry. The second semester of Precalculus covers topics that include finite and infinite sequences and series, limits, conic sections, polar equations, exponential and logarithmic functions, and probability and descriptive statistics. The graphing calculator will be used extensively.

STATISTICS (I)

One Semester

Prerequisite: Concurrent enrollment in Algebra 2 and Trigonometry of higher

Statistics is a one-semester, introductory, non-Calculus based course in statistics. The purpose is to introduce students to the major concepts and tools for analyzing, collecting, and drawing conclusions from data. The topics covered include: 1) data analysis: methods and ideas for organizing and describing data, observing patterns and departures from patterns; 2) collecting data: methods for producing data to answer specific questions, selecting samples, and designing experiments; 3) statistical inference: drawing conclusions from data; and 4) probability: emphasis will be given to collecting and analyzing real data. Calculators and computer software will be used extensively.

TOPICS IN ALGEBRA 2 & TRIGONOMETRY (I)

Two Semesters

Prerequisite: Topics in Geometry/Geometry and teacher recommendation

Topics in Algebra 2 & Trigonometry reviews and extends the main concepts of elementary algebra by examining the structure of number systems: natural, integer, rational, real, and complex. Powers, roots, radicals, functions, and equations are also studied.

TOPICS IN GEOMETRY (I)

Two Semesters

Prerequisite: Introduction to Algebra 2

Topics in Geometry is a slower paced Geometry course that is specifically designed for the student who has completed the two-year Introduction to Algebra program.