

MATHEMATICS

REGENTS LEVEL

Algebra R

1 credit / 9

Algebra is offered to students who have completed Math 8 in the Middle School. Algebra is a full year course introducing the following math topics; logic, polynomials, radicals, rational expressions, factoring, solving linear equations, solving quadratic equations, solving inequalities, systems of equations, absolute value, basic geometry, perimeter and area, ratio and proportion, and statistics. Students will take the Algebra Regents in June.

Geometry R

1 credit / 9-10

Geometry is offered to students who have completed Algebra. Topics include logic, coordinate geometry, congruent triangle proofs, proportion and similarity, quadrilaterals, transformations, constructions, locus, circles, area, surface area, and volume. Students will take the Geometry Regents in June.

Algebra II & Trigonometry R

1 credit / 9-11

Algebra II & Trigonometry is offered to students who have completed Geometry. Topics include functions, radical expressions and equations, quadratic functions and complex numbers, sequences and series, exponential and logarithmic functions, probability and statistics, and a rigorous treatment of trigonometry. The Algebra II and Trigonometry Regents Exam will be administered at the completion of this course.

Algebra II & Trigonometry Honors

1 credit / 9-10

Algebra II & Trigonometry Honors covers the same topics as Algebra II & Trigonometry, but does so in greater depth. Topics include functions, radical expressions and equations, quadratic functions and complex numbers, sequences and series, exponential and logarithmic functions, probability and statistics, and a rigorous treatment of trigonometry. The Algebra II and Trigonometry Regents Exam will be administered at the completion of this course.

REGENTS-EXTENDED LEVEL

Algebra 1A

1 Credit / 9

This course is for students currently enrolled in Math 8 in the middle school. This course is the first year of a two-year sequence culminating with a Regents exam. Topics include set notation, evaluating algebraic expressions, solving linear equations and inequalities, operations with monomials and polynomials, factoring, rational expressions, coordinate geometry, systems of linear equations, operations with radicals, and graphing and solving quadratic equations.

Algebra 1B**1 credit / 9-10**

This course is the second course of a two-course sequence covering Algebra topics in an extended format. Topics include proportions, linear-quadratic systems, functions, right triangle trigonometry, area, surface area, perimeter, volume, statistics, and probability. The Algebra Regents exam will be administered at the completion of this course.

Geometry**1 credit / 10-11**

Geometry is offered to students who have completed Algebra. Topics may include logic, coordinate geometry, congruent triangle proofs, proportion and similarity, quadrilaterals, transformations, constructions, locus, circles, area, surface area, and volume.

Algebra II & Trigonometry**1 credit / 11-12**

Algebra II & Trigonometry is offered to students who have completed Geometry R or Geometry. Topics may include functions, radical expressions and equations, quadratic functions and complex numbers, sequences and series, exponential and logarithmic functions, probability and statistics, and a rigorous treatment of trigonometry.

JUNIOR/SENIOR LEVEL**Statistics****1 credit / 11-12**

This course is designed to introduce students to the study of statistics. This course is offered to juniors and seniors who have passed the Integrated Algebra Regents exam. Topics include data collection and analysis, measures of dispersion, probability distributions, confidence intervals, hypothesis testing, and regression models.

Pre-Calculus**1 credit / 11-12**

This course is intended to provide the mathematical background needed for calculus. It is offered to those students who have successfully completed Algebra II & Trigonometry. Topics include functions and their graphs, polynomial and rational functions, exponential and logarithmic functions, trigonometry, sequence and series.

Pre-Calculus Honors**1 credit / 11-12**

This honors course is intended to provide the mathematical background needed for calculus. Topics include functions and their graphs, polynomial and rational functions, exponential and logarithmic functions, trigonometry, sequence and series, limits and continuity, and derivatives.

Calculus**1 credit / 11-12**

This is a traditional course in differential and integral calculus. The course is designed to prepare students for further studies of calculus at the college level. It is less rigorous than the AP Calculus courses and does not require a student to take the AP exam at its conclusion. Successful completion of Pre-Calculus or Pre-Calculus Honors is required to enroll.

Honors Math Topics**1 credit / 11-12**

This honors course is designed for students interested in continuing their study of advanced mathematics. This course will trace the development of mathematical theory. Students will be exposed to various math topics including; Multivariable Calculus, History of Mathematics, Linear Algebra, Differential Equations, Logic, Set Theory, and Proof. Successful completion of a course in Advanced Placement Calculus is required to enroll.

Introduction to Engineering Concepts**1 credit / 12**

This course is intended for students interested in pursuing college study in the area of engineering. The course will provide an overview of the four major engineering disciplines (mechanical, civil, electrical and chemical), with a focus on the application of mathematic and scientific concepts to engineering problems. The use of computers and/or the graphing calculator will be an integral part of the course. It is preferable that students have a background in Physics and are concurrently enrolled in Calculus.

ADVANCED PLACEMENT LEVEL**Advanced Placement Calculus AB****1 credit / 11-12**

This is a traditional course in differential and integral calculus. This course prepares students for the Advanced Placement Calculus AB Exam. Course enrollment requirements are listed in the Mathematics Honors Program section following the math course listings.

Advanced Placement Calculus BC**1 credit / 11-12**

This is a traditional course in differential and integral calculus. This course prepares students for the Advanced Placement Calculus BC Exam. Course enrollment is limited to students successfully completing Pre-Calculus Honors and meeting the additional requirements listed in the Mathematics Honors Program section following the math course listings.

Advanced Placement Statistics

1 credit / 11-12

Advanced Placement Statistics is designed to provide an extensive study of the theory of statistics including; data collection and analysis, measures of dispersion, probability distributions, confidence intervals, hypothesis testing, analysis of variance, and regression models. The graphing calculator will be used extensively in this course as both a computational and graphical analysis tool. Students enrolled in AP Statistics will be required to take the Advanced Placement Statistics Exam.

Regents Placement

It is recommended that a student receiving a grade of D or less undertake a program of remediation, preferably by attending an approved summer school, before advancing to the next math course in the sequence.

Mathematics Honors Program

There are honors sections for Algebra II & Trigonometry and Pre-calculus. Higher order thinking skills are stressed in problem solving and there is a substantial exploration of additional related topics.

Qualifying for the Honors Courses

Students in Algebra II & Trigonometry may qualify for honors placement in Pre-calculus Honors by satisfying all of the following conditions:

1. A minimum course grade of "A" in Algebra II & Trigonometry.
2. A minimum grade of 90 on the Algebra II & Trigonometry Regents exam.

Students in Geometry may qualify for honors placement in Algebra II & Trigonometry Honors by satisfying both of the following conditions:

1. A minimum course grade of "A" in Geometry.
2. A minimum grade of 90 on the Geometry Regents exam.

Mathematics Advanced Placement Criteria

Students will be required to total a minimum of 12 points from the following criteria to be admitted into AP Statistics or AP Calculus AB. Students will be required to total a minimum of 14 points from the following criteria to be admitted into AP Calculus BC.

Pre-calculus midyear grade:	Honors	Regular
A+	8 points	5 points
A	7	4
A -	6	3
B+	5	2
B	4	1
B -	3	0
C+	2	0
C	2	0

Math B final grade:	Honors	Regents
A+	5 points	4 points
A	4	3
A -	3	2
B+	2	1
B	1	0

SAT Score in Math (will substitute PSAT Score if needed):

750 – 800	5 points
700 - 749	4
650 - 699	3
600 - 649	2
550 - 599	1

Teacher Recommendation: 0 - 3 points