MATHEMATICS Course Catalog

Algebra 1 **411400CW**
Grade 9, 10 **1 unit**

Requirement: The South Carolina End-of-Course Examination Program requires students taking this course to take the Algebra 1 End-of-Course Test.

This course is a study of the concepts and problem-solving processes contained in the basic structure of algebra. Topics studied include the real number system, equations and inequalities, operations with polynomials, radicals, quadratics, exponentials and graphing. In addition to traditional computational methods, students use graphing calculators and/or computer software as tools for problem solving.

Algebra 1 Preparation Lab **319919CH**

Grade 9 **½ elective unit**

This course is designed to support students taking Algebra 1. Placement in this course will be based upon teacher recommendations and academic needs.

Algebra 1 Honors (GHS, LHS, RBHS, WKHS) **411400HW**

Grade 9 **1 unit**

Requirement: The South Carolina End-of-Course Examination Program requires students taking this course to take the Algebra 1 End-of-Course Test.
Recommended: Grade of 80 or higher in previous math course

This course is designed for students who have demonstrated exceptional mathematical abilities. It includes applications of algebraic concepts and problem-solving processes that require abstract reasoning abilities and/or a creative analysis of information. Topics include the real number system, equations and inequalities, operations with polynomials, radicals, quadratics, exponentials and graphing. Problems that involve both linear and non-linear functions are included. In addition to traditional computational methods, students use graphing calculators and/or computer software as tools for problem solving.

Algebra 2 **411500CW**
Grades 9–12 **1 unit**

Prerequisite: Algebra 1
Recommended: Grade of 75 or higher in Algebra 1

This course continues the development of algebraic concepts and skills. Students use equations, inequalities, real numbers and polynomials to solve problems. Additional topics include conic sections, quadratic functions, exponential functions, logarithmic functions, and rational functions and sequences. In addition to traditional computational methods, students use graphing calculators and/or computer software as tools for problem solving. Students who earn a D in Algebra 1 may take Intermediate Algebra prior to taking Geometry or Algebra 2.

Algebra 2 Honors **411500HW**

Grades 9–12 **1 unit**

Prerequisite: Algebra 1

Recommended: Grade of 80 or higher in Algebra 1 Honors

This course is designed for students who have demonstrated exceptional mathematical capabilities during the study of Algebra 1. It facilitates the development of proficiency in solving equations and inequalities, using radicals and manipulating polynomials. Additional topics include conic sections, quadratic functions exponential functions, logarithmic functions, and rational functions and sequences. In addition to traditional computational methods, students use graphing calculators and/or computer software as tools for problem solving.

Geometry **412200CW**

Grades 9-12 **1 unit**

Prerequisite: Algebra 1

This course focuses on the study of characteristics and properties of plane and solid geometric figures. Students apply their knowledge of geometric concepts and principles to solve problems with an emphasis on theoretical characteristics and principles. Students solve problems involving numerical applications of geometric concepts and principles, and develop logical reasoning through writing geometric proofs. In addition to traditional computational methods, students use graphing calculators and/or computer software as tools for problem solving.

Geometry Honors **412200HW**

Grades 9-12 **1 unit**

Prerequisite: Algebra 1

Recommended: Grade of 80 or higher in Algebra 1 Honors

This course provides a comprehensive study of geometric concepts and principles. Students are required to apply geometric theorems to problem-solving situations that require abstract reasoning abilities. Logical reasoning is developed through various kinds of proofs. In addition to traditional computational methods, students use graphing calculators and/or computer software as tools for problem solving.

Probability and Statistics **414100CW**

Grades 10–12 **1 unit**

Prerequisite: Algebra 1

Recommended: Grade of 75 or higher in Algebra 2

This course includes the study of probability, statistics and discrete mathematics topics. Students collect, organize, display, analyze and interpret data to solve mathematical and contextual problems. They use probability to model and solve real-world problems. In addition to traditional computational methods, students use graphing calculators and/or computer software as tools for problem solving.

Advanced Placement Statistics **417100AW**
(GHS, LHS, RBHS, WKHS)
Grades 10–12 **1 unit**

Prerequisite: Algebra 2

Requirement: Advanced Placement Statistics Exam, Statistics Extension Honors linked course, summer reading/assignment

This course is appropriate for students pursuing a degree in mathematics, engineering, psychology, sociology, health science or business. Four basic concepts are studied: exploring data, planning a statistical study, anticipating patterns using probability and simulations, and drawing statistical inferences. The course is equivalent to an introductory non-calculus college course in statistics. The College Board determines the course description; therefore, the content of this course must adhere to those requirements. This course is linked to a required half-unit-honors course.

AP Statistics Preparation Lab Honors **314900HH**

(GHS, LHS, RBHS, WKHS)
Grades 10–12 **½ unit**

This course is a required link to Advanced Placement Statistics and is only open to those students enrolled in that course.

Discrete Mathematics **414200CW**
Grades 11, 12 **1 unit**

Prerequisite: Algebra 1, Geometry

This course includes the study of set theory, logic, number theory, graph theory, matrices, and vectors. Additional topics may include voting theory, apportionment, game theory, and/or consumer mathematics. Students apply knowledge of special functions and graphs to solve problems. In addition to traditional computational methods, students use graphing calculators and/or computer software as tools for problem solving.

Pre-Calculus **413100CW**
Grades 11, 12 **1 unit**

Prerequisite: Algebra 2, Geometry

Recommended: Grade of 75 or higher in Algebra 2

This course prepares students to study calculus in high school or at a technical college or four-year college or university. It is appropriate for students who need knowledge in advanced mathematical concepts and trigonometry. Students should have demonstrated a thorough understanding of algebraic concepts and a working knowledge of geometric theorems.

This course includes the study of polynomial, trigonometric, exponential and logarithmic functions as well as parametric equations and polar coordinates.

Pre-Calculus Honors **413100HW**
Grades 11, 12 **1 unit**

Prerequisite: Algebra 2, Geometry

Recommended: Grade of 80 or higher in Algebra 2 Honors

This course prepares for students to study calculus and other advanced mathematics courses. It is intended for those students who have demonstrated exceptional mathematics abilities and desire a rigorous comprehensive course of study. This course includes the study of polynomial functions, trigonometric functions, exponential functions, logarithmic functions, parametric equations and polar coordinates.

Calculus (LHS, RBHS) **413500CW**
Grade 12 **1 unit**

Prerequisite: Pre-Calculus

This course is designed to introduce students to basic calculus topics and applications. It is intended for students who plan to pursue a degree at a four-year or two-year college or university that requires the successful completion of a calculus course.
Topics introduced in Pre-Calculus are revisited and extended. Calculus topics include limits, derivatives and simple integration techniques with their applications for problem solving.

Advanced Placement Calculus AB **417000AW**
Grade 12 **1 unit**

Prerequisites: Pre-Calculus

Requirement: Advanced Placement Calculus AB Exam, Calculus AB Extension Honors linked course, summer reading/assignment

Recommended: Grade of 75 or higher in Pre-Calculus Honors or Pre-Calculus, a score of 55/550 on the math portion of the PSAT/SAT

This course includes a study of elementary functions, differential calculus and integral calculus. The College Board determines the course description; therefore, the content of this course must adhere to those requirements. Students must be prepared to spend an average of one hour per night on homework to be successful. This course is linked to a required half-unit honors course.

Advanced Placement Calculus BC **417200AW**
(LHS, RBHS, WKHS)
Grade 12 **1 unit**

Prerequisites: Pre-Calculus Honors

Requirement: Advanced Placement Calculus BC Exam, summer reading/assignment

Recommended: Grade of 80 or higher in Pre-Calculus Honors, a score of 60/600 on the math portion of the PSAT/SAT

This course is intended for students who have a thorough knowledge of college preparatory mathematics. The syllabus includes a study of elementary functions, differential calculus, integral calculus, series and sequences, and

includes calculus topics generally taught in two semesters at the college level. The College Board determines the course description; therefore, the content of this course must adhere to those requirements. Students must be prepared to spend an average of one hour per night on homework to be successful. This course is linked to Advanced Placement Calculus AB.