



DREHER HIGH SCHOOL MATH DEPARTMENT

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COURSE OFFERINGS

All high school students are required to take one Mathematics course each year. Four Carnegie units earned in Math courses are required for high school graduation.

Foundations in Algebra (CP): Students will engage in methods for analyzing, solving, and using quadratic functions. They must also take Intermediate of Algebra next year to complete the Algebra standards that will be assessed on the new SC 11th grade assessment. If this course is followed by Algebra 1 instead of Intermediate of Algebra, this course will be counted as a general elective and not a math elective required for graduation.

Algebra 1 (CP): Students will engage in methods for analyzing, solving, and using quadratic functions. Other areas of focus will be utilizing rational exponents, systems involving quadratic expressions, using functions to model relationships, interpreting functions, making judgements about the appropriateness of linear models. Students enrolled in this course will take South Carolina's End-of-Course Exam, which accounts for 20% of their final grade.

Intermediate Algebra (CP): Students will also learn to use the method of completing the square to transform any quadratic equation, while also deriving the quadratic formula. Quadratic equations will be solved using multiple methods. Students enrolled in this course will take South Carolina's End-of-Course Exam, which accounts for 20% of their final grade.

Geometry (CP):

Prerequisite: Algebra 1 of Foundations in Algebra and Intermediate

Students explore more complex geometric situations and deepen their explanations of geometric relationships, moving towards formal mathematical arguments. Transformations are emphasized in this course. Some additional areas of focus will be reasoning to complete geometric constructions, prove theorems – using a variety of formats, apply similarity in right triangles to understand right triangle trigonometry, develop the law of sine and cosine, write the equations of circles, and continue their study of quadratics by connecting the geometric and algebraic definitions of the parabola.

Geometry Honors:

Prerequisite: Algebra 1 Honors and teacher recommendation
Students explore more complex geometric situations and deepen their explanations of geometric relationships, moving towards formal mathematical arguments. Transformations are emphasized in this course. Some additional areas of focus will be reasoning to complete geometric constructions, prove theorems – using a variety of formats, apply similarity in right triangles to understand right triangle trigonometry, develop the law of sine and cosine, write the equations of circles, and continue their study of quadratics by connecting the geometric and algebraic definitions of the parabola.

Algebra 2(CP):

Prerequisite: Algebra 1 of Foundations in Algebra and Intermediate

Students work closely with expressions that define the functions, and continue to expand and hone their abilities to model situations and to solve equations, including solving quadratic equations over the set of complex numbers and solving exponential equations using the properties of logarithms. The critical areas of this course will build on work with trigonometric ratios and circles Geometry to model periodic phenomena, understand the Fundamental Theorem of Algebra, explore the effects of transformations on graphs of diverse functions, and identify appropriate types of functions to model a situation, and adjust parameters to improve the model.

Algebra 2 Honors:

Prerequisite: Algebra 1 Honors

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Algebra 3/Trig (CP):

Students will review solving equations and inequalities, graphing and factoring, and systems of equations. Students completing this course are prepared for a subsequent study of Pre-Calculus either at the high school level or college level.

Pre-Calculus Honors:

Prerequisite: Algebra II Honors

Student will study the following functions: trigonometric, polynomial, exponential, logarithmic, rational, radical, and other primary functions. Sequences and series, topics in analytical geometry, polar coordinates, vectors and parametric equations are included in the course content. Access to a graphing calculator is needed outside the classroom.

Probability and Statistics (CP): Students engage in the collection, organization, display, analysis and interpretation of data. Students will use graphing calculators and/or computer software as tools for solving problems.

Discrete Math (CP):

This course includes the study of mathematical properties of sets and systems that have a finite number of elements. The topics include set theory, logic, graph theory, numeration systems and number theory, modeling, consumer mathematics, descriptive statistics, and apportionment (fairness, voting methods). Students will use graphing calculators and/or computer software as tools for solving problems.

AP Statistics:

Prerequisite: Above average grades, Algebra II Honors and or teacher recommendation.

This course reflects the methodologies supporting the new curriculum goals. Students enrolled in this Statistics will be prepared for topics covered in many college- level courses as well as the world of work. Technology is required to facilitate learning and to help develop students' quantitative reasoning and problem-solving skills; the purpose of Statistics is to introduce students to the major concepts and tools for collecting, analyzing, and drawing conclusions from data. Students are exposed to four broad conceptual themes: (1) exploring data, (2) planning a study, (3) anticipating patterns

and (4) statistical inference; long and short term projects are required of all students enrolled in this course. All students must take the College Board AP statistics examination.

AP Calculus (AB):

Prerequisite: Above average grades, Precalculus and or teacher recommendation.

It is a course in introductory calculus with elementary functions. The idea of limit is introduced. Derivatives of algebraic, trigonometric, logarithmic, and exponential functions are considered with the applications that follow. Also involved is basic coverage of integration, the fundamental theorem of integral calculus, computation of area under the curve, and other application techniques. Students will be required to use a graphing calculator to produce the graph of a function within an arbitrary viewing window, find the zeros of a function, compute definite integrals numerically, and compute definite integrals numerically. All students are required to take the Advanced Placement Examination.

AP Calculus (BC):

Prerequisite: Above average grades, Pre-Calculus Honors and or teacher recommendation.

The topics covered include a review of all AB topics; integration techniques and application; infinite series, parametric and polar equations, and vectors. Students are expected to use a graphing calculator throughout the course. This course represents college bound mathematics for which most colleges grant advanced placement credit. The content of AP Calculus BC is designed to qualify the student for placement and credit one semester beyond that granted for AP Calculus AB. All students are required to take the Advanced Placement Examination.

Math Electives

Math Seminar1: This companion course may be utilized along with the Foundation in Algebra course.

Math Seminar2: This companion course may be utilized along with the Intermediate Algebra course.

Strategies for Mathematics 1: This course is designed to help students meet the state standard on the Algebra 1 End of Course Exam.

