

The philosophy, objectives and goals of the Mathematics Department are in alignment with the National Council of the Teachers of Mathematics. The curriculum focuses on the development of numeric, algebraic and analytical concepts that enable the students to formulate, analyze and solve problems proficiently. Our students will develop the ability to think critically and be articulate as they discover the meaningful applications of Mathematics. The mathematics courses will also provide enough rigor to support more advanced levels of accomplishment. The mathematics courses in the first three levels follow the standards of the common core curriculum. Note: It is the policy of the Math Department that, if a student does not pass a regents exam, she must prepare on her own and re-take the next regents exam offered. In the case of Algebra I, it is required that she take the exam until she passes.

Credit: 1.0

The basic structure of the real number system, sets, equations, inequalities, polynomials and graphs are studied with an emphasis on problem-solving and application. Students are prepared to take the Algebra Common Core regents' exam in June. Students receive a graphing calculator as part of the school fees. All students are required to take and pass the Algebra Common Core Regents exam in order to graduate.

Credit: 1.0

This is an accelerated Algebra I course with special emphasis on problem solving and critical thinking. Many problem-solving strategies are explored with a view toward preparing students for the SAT test. As in the Algebra I course, students are prepared and required to take and pass the Regents exam in June. Each student receives a graphing calculator as part of the school fees.

Credit: 1.0

This course includes the study of Euclidean Geometry with topics including congruent and similar triangles, quadrilaterals, circles, study of rigid motion, transformations, basic trigonometry including the law of sines and the law of cosines, coordinate geometry and solid geometry. Also included are perimeter and area polygons, as well as surface area and volume of solid figures. The students are prepared and required to take the geometry regents in June.

Credit: 1.0

Prerequisite: 93% in Algebra, at least an 85% in the Final Exam and the approval of the Algebra teacher.

This is an accelerated Geometry course which includes the topics covered in Geometry, as well as Trigonometry of the right triangle, an independent study project and enrichment activities. Students are prepared and required to take the Geometry Common Core regents exam in June.

Credit: 1.0

This course extends the previous work with the language and structure of algebra. The study of Trigonometry is further developed and emphasized. Analysis of linear and quadratic functions, relations, inequalities, exponential and logarithmic functions and polynomials are included. Students are prepared and required to take the Algebra II/Trig Regents exam.

ALGEBRA II (COMMON CORE) (Hons)

Course 431

Credit: 1.0

Prerequisite: 90% in Geometry; 80% on Geometry Final Examination; approval of the geometry teacher.

This course includes topics covered in the Algebra 2/Trigonometry course. Additionally, topics including lines, functions and graphs, exponential functions and parametric equations will also be presented. Students are prepared and required to take the Algebra II/Trig Regents exam in June. The students will be graded and will count towards their GPA.

COLLEGE ALGEBRA

Course 431

Credit 1.0

This course will reinforce college algebra concepts including that was introduced in elementary algebra such as linear and quadratic equations, linear and polynomial functions rational expressions and rectangular coordinates. At the end of the course students will be prepared to pass college placement exam in math.

PRECALCULUS

Course 440

Credit: 1.0

Prerequisite: Algebra II Common Core regents' examination with at least 85 in the final Examination and the approval of the Algebra II Common Core teacher.

This course is designed to prepare the student for a college level study of calculus. The concepts of algebra and trigonometry are extended. Polynomial functions, limits and differentiation are studied.

AP PRECALCULUS

Course: 450

Credit: 1.0

Prerequisites: Precalculus with a minimum average of 85% or CCA2 Honors with minimum average of 92%.

AP Precalculus will prepare students for college-level mathematics and science classes. The skills learned in this course are foundational not only for success in required college math courses but also to careers in math, physics, biology, health, data science and social science. The new AP Precalculus class will be made up of four units: Polynomial and Rational Functions, Exponential and Logarithmic Functions, Trigonometric and Polar Functions, Functions Involving Parameters, Vectors, and Matrices Through these units, students will gain a deep conceptual understanding of functions and their graphs, learning how to model and interpret models of functions. By the end of the course, the student will have established a strong foundation of higher math skills All students enrolled in this course are expected to take the Advanced Placement exam.

AP CALCULUS AB

Course 441

Credit: 1.0

Prerequisite: Pre-calculus and the approval of the Pre-calculus teacher.

This course is the study of differential and integral calculus. The emphasis is on concepts involving limits, rates of change, exponential functions, and their applications. All students enrolled in this course are expected to take the Advanced Placement exam. The cost of the exam is approximately \$90.00.

ELEMENTARY STATISTICS

Course 449

Credit: 0.5

In this course students will study Descriptive and Inferential Statistics and Probability. They will learn how to collect, organize, summarize, and present descriptive statistical information; how to perform experiments on subject samples using sampling techniques; and use probability and knowledge. This is a semester course offered as an elective for juniors and seniors. Students will learn the fundamentals of computer-aided design. The software utilized is AutoCAD which is a program widely used by professionals (architects, engineers, etc. ...) in today's technologically advanced world. Students will be engaged in a S.T.E.M. (Science, Technology, Engineering, and Math) environment using real-world applications. The course meets the College Board standards for the AP Computer Science Principles curriculum and may be used for college credit. Prerequisite: Geometry course credit.

INTRO TO COMPUTER SCIENCE – CODING

Course 452

Credit: 0.5

This is designed to offer an introduction to computer science. Students will learn the basics of computer programming along with the basics of computer science. The material emphasizes computational thinking and helps develop the ability to solve complex problems. The semester course covers the basic building blocks of programming along with other central elements of computer science. It gives a foundation in the tools used in computer science and prepares students for further study in computer science, including AP Computer Science principles and AP Computer Science A courses.