

MATH



MATHEMATICS

Path One

8th Grade
Mathematics

9th Grade
Geometry with Data
Analysis

10th Grade
Algebra 1
with Probability

10th Grade
Advanced Algebra 1
with Probability

11th Grade
Algebra 2
with Statistics

11th Grade
Advanced Algebra 2
with Statistics

12th Grade
Algebra with Finance

12th Grade
Advanced Finite
Mathematics

12th Grade
Advanced
Pre-Calculus

MATHEMATICS

Path Two

Accelerated 8th
Grade Math

9th Grade
Advanced Geometry
with Data Analysis

9th Grade
Honors Geometry with Data
Analysis

10th Grade
Advanced Algebra 2 with
Statistics

10th Grade
Honors Algebra 2 with
Statistics

11th Grade
Advanced
Pre-Calculus

11th Grade
AP
Pre-Calculus

12th Grade
Adv. Finite
Mathematics

12th Grade
Dual Enrollment
Calculus

12th Grade
AP
Statistics

12th Grade
AP
Calculus

GEOMETRY WITH DATA ANALYSIS [9]

GEOM

CREDITS: 1.0

PREREQUISITE: None

This academic level course allows students to develop understanding of geometrical relationships through a systematic approach to Euclidean geometry. Topics include congruence, similarity, polygons, areas, ratio and proportion, with emphasis on problem solving. Coordinate geometry is an integral part of this course. Academic level classes are small and provide specific instruction and attention to accommodate learning needs.

ADVANCED GEOMETRY WITH DATA ANALYSIS [9]

ADV GEOM

CREDITS: 1.0

PREREQUISITE: Accelerated 8th grade math course

This course allows students to develop understanding of geometrical relationships through a systematic approach to Euclidean geometry. Topics include congruence, similarity, polygons, areas, ratio and proportion, with emphasis on problem solving. Coordinate geometry is an integral part of this course.

HONORS GEOMETRY WITH DATA ANALYSIS [9]

H GEOM

CREDITS: 1.0

PREREQUISITE: Meets academic requirements through 8th grade placement test

The content of this honors level course is similar to Advanced Geometry, but is studied with increased rigor at an accelerated pace. Students should be highly motivated and demonstrate above average abilities in math. In addition to topics covered in Advanced Geometry, deductive proofs are an integral part of this course.

ALGEBRA 1 WITH PROBABILITY [10]

ALG 1

CREDITS: 1.0

PREREQUISITE: None

This academic level course is a formal in-depth study of algebraic concepts and the real number system. In this course students develop understanding of algebraic properties and operations. Topics include solutions of equations and inequalities, operations with polynomials and functions, graphing linear equations, and operations with rational and radical expressions. Students in the academic level course will also receive support through online programs and materials.

ADVANCED ALGEBRA 1 WITH PROBABILITY [10]

ADV ALG 1

CREDITS: 1.0

PREREQUISITE: Advanced Geometry

Advanced Algebra I is a formal in-depth study of algebraic concepts and the real number system. In this course students develop a greater understanding of algebraic properties and operations. Topics include, but are not limited to: solutions of equations and inequalities, operations with polynomials and functions, graphing linear equations and inequalities, and operations with rational and radical expressions.

ALGEBRA II WITH STATISTICS [11]

ALG II

CREDITS: 1.0

PREREQUISITE: Algebra I and Geometry

This academic level course is designed to extend students' algebraic knowledge and skills. Students will solve problems using a variety of methods that promote the development of improved communication skills and foster a deeper understanding of the subject matter. To help students appreciate the power of algebra, applications involving real-life situations are incorporated throughout the course. Some topics covered include operations with real and complex numbers, advanced graphing, functions, systems of equations, exponents, and conic sections. Academic level classes are small and provide specific instruction and attention to accommodate learning needs.

ADVANCED ALGEBRA II WITH STATISTICS (10,11)

ADV ALG II

CREDITS: 1.0

PREREQUISITE: Advanced Geometry

This course is designed to extend students' algebraic knowledge and skills. Students will solve problems using a variety of methods that promote the development of improved communication skills and foster a deeper understanding of the subject matter. To help students appreciate the power of algebra, applications involving real-life situations are incorporated throughout the course. Topics include operations with real and complex numbers, advanced graphing, functions, systems of equations, exponents, logarithms, matrices and conic sections.

HONORS ALGEBRA II WITH STATISTICS (10,11)

H ALG II

CREDITS: 1.0

PREREQUISITE: Honors Geometry; Advanced Geometry + Teacher Recommendation

The content of this honors level course is similar to Advanced Algebra II, but is studied with increased rigor at an accelerated pace. Students should be highly motivated and demonstrate above average abilities in algebraic operations. In addition to topics in the Advanced level course, students will be introduced to Trigonometry.

ALGEBRA with FINANCE (12)

Algebra Finance

CREDITS: 1.0

PREREQUISITE: Algebra II

This course is designed to prepare students for post-secondary programs of study that do not require calculus, such as business, management, economics, the information, health, and social sciences, and technical and trade certifications. Real-world problems in investing, credit, banking, auto insurance, mortgages, employment, income taxes, budgeting and planning for retirement are solved by applying the relevant mathematics. The course integrates algebra, geometry, probability and statistics to solve financial problems. Practical applications and problem-solving activities are key to this course.

ADVANCED FINITE MATHEMATICS [11,12]

ADV FINITE MATH

CREDITS: 1.0

PREREQUISITE: Advanced Algebra II

This course is designed to prepare students for post-secondary programs of study that do not require calculus, such as business; management; economics; the information, health, and social sciences; and technical and trade certifications. Topics include logic, counting methods, information processing, graph theory, election theory, and fair division, with emphasis on real-world problems.

ADVANCED PRE-CALCULUS [11,12]

ADV PRECAL

CREDITS: 1.0

PREREQUISITE: Advanced Algebra II; Advanced Geometry; Teacher Recommendation

This course is designed for the highly motivated college-bound student with a strong background in mathematics. It combines the geometric and algebraic techniques needed to prepare students for the study of Calculus. The course offers an in-depth study of functions (polynomial, rational, exponential, logarithmic, and trigonometric) and their inverses. Additional topics include limits, sequences and series, analytic geometry, and probability.

ADVANCED PLACEMENT (AP) PRE-CALCULUS [11,12]

AP PRECAL

CREDITS: 1.0

PREREQUISITE: Honors Algebra II; Advanced Algebra II + Teacher Recommendation

AP Pre-calculus is the preparatory course for AP Calculus. In this course, students will strengthen skills needed for Calculus other mathematics based courses, such as physics. They will also develop a deep conceptual understanding of functions through analysis and modeling of real-world situations at the college level. This course is for students who have made an A or B in Honors Algebra II, or an A in Advanced Algebra II with that teacher's recommendation.

ADVANCED PLACEMENT (AP) CALCULUS (12)

AP CALC

CREDITS: 1.0

PREREQUISITE: AP Pre-Calculus; Advanced Pre-Calculus + Teacher Recommendation

AP Calculus AB is roughly equivalent to a first semester college calculus course devoted to topics in differential and integral calculus. The AP course covers topics in these areas, including concepts and skills of limits, derivatives, definite integrals, and the Fundamental Theorem of Calculus. The course teaches students to approach calculus concepts and problems when they are represented graphically, numerically, analytically, and verbally, and to make connections amongst these representations. Students learn how to use technology to help solve problems, experiment, interpret results, and support conclusions. The syllabus follows the College Board AP curriculum.

ADVANCED PLACEMENT (AP) STATISTICS (11,12)

AP STAT

CREDITS: 1.0

PREREQUISITE: Honors Algebra II; Advanced Pre-Calculus

This course teaches students to analyze data in an objective manner and understand what inferences (if any) can be drawn from data. The course will be run as an honors-level elective. It can be taken as a terminal course for those seniors who have completed a level of pre-calculus or may be taken concurrently with Advanced or AP Pre-calculus for juniors or seniors who have completed Honors Algebra 2. The syllabus follows the College Board AP curriculum.

CALCULUS (12)

Calculus

CREDITS: 1.0

PREREQUISITE: Advanced Pre-Calculus; AP Pre-Calculus

Course can be Dual Credit with Troy University if meet standardized testing requirements.

In this course, students will explore how limits lead to the concept of instantaneous rate of change and provide the framework for derivatives. Building on this foundation, students will learn how derivatives are used to analyze motion, growth, and optimization in real-world situations. The course will also introduce integration as a way to measure accumulation, including finding the area under curves and the volume of three-dimensional solids. Throughout the course, students will strengthen their problem-solving skills, deepen their mathematical reasoning, and discover how calculus connects algebra and geometry to describe the changing world around them.

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