

MATH

ALGEBRA I

Prerequisites: Successful completion of 8th Grade Algebra or Course 3. with a grade of C- or better or teacher recommendation. To continue into the second semester students must maintain a C-grade average or higher or teacher recommendation.

1091/ 2091

Grade 9-12

1 Year

Topics Introduced:

Order of Operations; Solving equations; Proportions; Absolute Value; Inequalities; Slope Intercept form; Scatter plots; Parallel and Perpendicular lines; Systems of Equations; Systems of Inequalities; Quadratic Equations; Quadratic formula; Exponential functions; Scientific Notation; Pythagorean Theorem; and Polynomials.

Academic Skills Developed:

Ability to: Perform computations with signed numbers; Solve and graph equations; and Reason logically throughout several concepts.

Other disciplines course could be integrated into:

Science - Graphing, Patterns, and Functions; Business / Accounting - Logical reasoning.

Related Careers:

Biologist, Carpentry, Bank Officer, Computer Programmer, Engineer, Forest Ecologist, Medical Researcher, Physicist, Urban Planner

Textbooks/Resources:

Algebra I (McDougal Littell, 2004) Scientific Calculator.

ALGEBRA II/ PROB/STATS Prerequisite: Successful Completion of Geometry with an average grade of a C- or higher or teacher recommendation. In order to continue on into the second semester you must maintain a C- for an average grade or higher or teacher recommendation.

1030 / 2030

Grade 10-12

Year Long

Topics Introduced:

Linear Systems and Functions; Matrices; Quadratic Equations and Functions; Polynomials and Polynomial Functions; Exponential and Logarithmic Functions; Rational Functions; Quadratic Relations; Probability, Statistics, and Trigonometry

Academic Skills Developed:

Problem solving; logical reasoning; application of concepts.

Other disciplines course could be integrated into:

Science; Chemistry, Physics

Related Careers:

Biologist, Computer Programmer, Disease Registry Technician, Engineer, Ecologist, Instrument Technician, Market Researcher, Medical Researcher, Physicist, Land Surveyor

Textbooks/Resources:

Algebra II (McDougal Littell, 2004) Scientific Calculator recommended.

GEOMETRY

Prerequisites: Successful completion of Algebra I (8th grade) with an average grade of C- or better or teacher recommendation. You must maintain an average grade of a C- or higher or teacher recommendation to go into second semester.

1120 / 2120

Grade 9-12

Year Long

Topics Introduced:

Basic definitions of geometry, reasoning and proof, geometric figures, transformations, triangle relationships, measurement in planes and space, reasoning and parallel lines, proving triangles congruent, quadrilaterals, similarity, trigonometry, chords, secants, and tangents, algebra skills review, laboratory work

Academic Skills Developed:

Ability to: Solve problems using concepts developed in geometry and algebra, reason logically, and demonstrate and apply skills by completing laboratory work.

Other disciplines course could be integrated into:

Physics, Science, Technical Areas such as building or construction, Art, and Design Work.

Related Careers: Geometry prepares students for career related to math, science, engineering, and other technical fields. Geometry is also recommended for students that plan on a four year college degree.

Textbooks/Resources:

Geometry – (McDougal Littell, 2004), Scientific Calculator

ADVANCED MATH

**Prerequisites: Successful completion of Algebra II/Prob/ Stats
1119 / 2119**

Grade 11-12

Year Long

Topics Introduced:

Linear and Quadratic Functions; Polynomial Functions; Inequalities; Properties of Functions; Exponents and Logarithms; Trigonometric Functions; Triangle Trigonometry; Trig addition formulas; Sequences and Series; Matrices; Combinations; Probability; Statistics.

Academic Skills Developed:

Problem solving abilities; Deductive reasoning; and Modeling applied problems.

Other disciplines course could be integrated into:

Biology - Genetics, use of probability; Business / Accounting - Logical reasoning. Chemistry and Physics-Applied problems

Textbooks/Resources:

Precalculus; Graphical, numerical, algebraic (Addison Wesley, . 2004) and Graphing calculator

CALCULUS *AP

Prerequisites: Successful completion of Advanced Math or teacher recommendation.

1024/2024

Grade 12

Year Long

Topics Introduced:

Algebraic, Trigonometric and Logarithmic Functions; Applications of the derivative and integral; Graphing of All Functions; Area Between Two Curves; Continuity of Curves; Limits of Functions; Derivatives of Functions; Maximization and Minimization Problems; Integration of Functions

Academic Skills Developed:

Problem solving ability; logical reasoning ability; ability to use the best method for a particular problem.

Develop an appreciation of Mathematics;

Other disciplines course could be integrated into:

Physics - Velocity and acceleration applications; Agriculture - Maximum and minimum problems, area and perimeter

Related Careers: Biologist, Engineer, (All Fields) Computer Programmer, Actuary, Physicist, Business Management, Medicine (all Disciplines)

Textbooks/Resources:

Calculus - Graphical, Numerical, Algebraic; Scott Foresman Addison Wesley; Graphing Calculator

College Algebra (Challenge Program)

Prerequisites: Successful Completion of Advanced Math or Teacher Recommendation. Must be in top 50% of class.

1101

Grade 12

1 Semester Only

This class transfers 3 college credits to most colleges.

Topics Introduced:

Exponents, Radicals, Algebraic Expressions, Quadratic Equations, Complex Numbers, Inequalities, Functions, Polynomials, and Logistics

Academic Skills Developed:

Problem solving abilities, Deductive Reasoning, Modeling applied problems.

Other disciplines course could be integrated into:

Textbooks/Resources:

Algebra and Trigonometry with Analytic Geometry, Swokowski/Cole, Tenth Edition.

Trigonometry and Special Functions (Challenge Program)

Prerequisites: Successful completion of Adv. Math or Teacher recommendation and must be in to 50% of class

2101

Grade 12

2 Semester Only

This class transfers 3 college credit to most colleges.

Topics Introduced:

Trigonometric functions and Graphs, Trig Identities, Inverse Trig Functions, Law of Sines and Cosines, Parabolas, Ellipses, Hyperbolas, Parametric Equations