

COURSE DESCRIPTION

Algebra I

PHILOSOPHY

The consistency of mathematical truths demonstrates the orderliness, precision and consistency of God. Mathematical study should result in greater appreciation of the works of God in His creation. Man's creativity, like God's, often requires mathematical understanding. The understanding of mathematical concepts adds to our understanding and expression of creativity and productivity, and is important for success in many areas of life.

CONTENT

Polygons. Circumference and area. Sets and subsets. Absolute value. Signed numbers. Order of operation. Symbols of inclusion. Algebraic expressions. Factors and coefficients. Powers and roots. Surface area and volume. Solutions of algebraic equations. Word problems. Inequalities. Ratios. Solving variable and multivariable equations. Percent problems. Introduction to polynomial expressions and equations. Introduction to linear equations and graphing. Basic substitution. Geometric solids. Scientific notation. Rational equations. Introduction to systems of equations. Radical equations. Conjunctions and disjunctions. Direct and inverse variation. Introduction to quadratic equations and the quadratic formula.

OBJECTIVES

Students will acquire experience and competence in the content areas listed above. Students will be able to define terms, discuss concepts, and perform operations with values and variables as basic algebra skills are developed. Students will lay the foundations in the content areas listed above for advancement toward more abstract and challenging mathematics courses in the future.

TEXT

Algebra I, Fourth Edition, Saxon Publishers

INSTRUCTIONAL MATERIALS

Textbook, handouts, internet resources

EVALUATION

Tests, quizzes, homework

TIME & CREDIT

55 min/day, 5 days/week, ½ credit per semester, first & second semesters, offered to 9th grade every school year

COURSE DESCRIPTION

Algebra II

PHILOSOPHY

The consistency of mathematical truths demonstrates the orderliness, precision and consistency of God. Mathematical study should result in greater appreciation of the works of God in His creation. Man's creativity, like God's, often requires mathematical understanding. The understanding of mathematical concepts adds to our understanding and expression of creativity and productivity, and is important for success in many areas of life.

CONTENT

Product and power theorems. Solutions of advanced algebraic equations. Equations involving polygons and geometric solids. Advanced word problems. Advanced substitution. Advanced polynomial expressions and equations. Motion word problems. Introductory trigonometry. Linear equations. Advanced substitution and elimination. Polynomial factoring. Unit multipliers. Quadratic expressions and equations. Coefficients. Direct and inverse variation. Radical denominators. Imaginary numbers. Complex numbers. Systems of equations. Multivariable equations. Variable exponents. Non-linear equations. Dependent and independent variables. Probability. Functions and functional notation. Quadratic and absolute value inequalities. Logarithms.

OBJECTIVES

Students will acquire experience and competence in the content areas listed above. Students will be able to define terms, discuss concepts and perform operations with values and variables as advanced algebra skills are developed. Students will build upon their foundations in the content areas listed above for expertise in advanced algebra, yielding proficiency in useful mathematical skills as well as preparing students for additional challenging mathematics courses in the future.

TEXT

Algebra II, Fourth Edition, Saxon Publishers

INSTRUCTIONAL MATERIALS

Textbook, handouts, internet resources

EVALUATION

Tests, quizzes, homework

TIME & CREDIT

55 min/day, 5 days/week, ½ credit per semester, first & second semesters, offered to 10th – 11th grades in even-odd school years (2020-21, 2022-2023)

COURSE DESCRIPTION

Geometry

PHILOSOPHY

The consistency of mathematical truths demonstrates the orderliness, precision and consistency of God. Mathematical study should result in greater appreciation of the works of God in His creation. Man's creativity, like God's, often requires mathematical understanding. The understanding of mathematical concepts adds to our understanding and expression of creativity and productivity, and is important for success in many areas of life.

CONTENT

Incidence geometry. Subsets of lines, planes and space. Segment measures. Angle measures. Proofs. Logic. Congruence. Polygons. Area. Circles. 3-dimensional space and figures. Volume. Transformations. Similarity. Trigonometric ratios and applications. Analytic geometry.

OBJECTIVES

Students will acquire experience and competence in the content areas listed above. Students will be able to define terms, discuss concepts, classify figures, perform operations with figures, postulates and theorems and justify postulates and theorems in the content areas listed above.

TEXT

Geometry, Saxon Publishers

INSTRUCTIONAL MATERIALS

Textbook, handouts, internet resources

EVALUATION

Tests, quizzes, homework

TIME & CREDIT

55 min/day, 5 days/week, ½ credit per semester, first & second semesters, offered to 10th – 11th grades in odd-even school years (2019-20, 2021-22)

COURSE DESCRIPTION

Precalculus

PHILOSOPHY

The consistency of mathematical truths demonstrates the orderliness, precision, and consistency of God. Mathematical study should result in greater appreciation of the works of God in His creation. Man's creativity, like God's, often requires mathematical understanding. The understanding of mathematical concepts adds to our understanding and expression of creativity and productivity, and is important for success in many areas of life.

CONTENT

Review of algebra and geometry. Exponents, radicals and complex numbers. Advanced fractional, radical and systems of equations. Reasoning and logic. Trigonometry. Polynomials. Rectangular and polar coordinates. Conic sections and polar graphs. Non-linear systems of equations. Trigonometric functions. Logarithmic equations. Factorial expressions and equations. The unit circle. Inverse functions. Summation notation and sequences. Linear regression. Decomposing functions. Permutations. Radian measures. Periodic functions. Matrix algebra. Statistics.

OBJECTIVES

Students will acquire experience and competence in the content areas listed above. Students will be able to define terms, discuss concepts, and perform operations with values and variables as trigonometric and introductory calculus skills are developed. Students will build upon their foundations in the content areas listed above for expertise in advanced algebra, advanced geometry, trigonometry, and introductory calculus, yielding proficiency in useful mathematical skills as well as preparing students for additional challenging mathematics courses in the future.

TEXT

Precalculus, BJU Press

INSTRUCTIONAL MATERIALS

Textbook, handouts, internet resources

EVALUATION

Tests, quizzes, homework

TIME & CREDIT

55 min/day, 5 days/week, ½ credit per semester, first & second semesters, offered to 11th - 12th grades every school year as needed and per instructor.

COURSE DESCRIPTION

Advanced Math

PHILOSOPHY

The consistency of mathematical truths demonstrates the orderliness, precision, and consistency of God. Mathematical study should result in greater appreciation of the works of God in His creation. Man's creativity, like God's, often requires mathematical understanding. The understanding of mathematical concepts adds to our understanding and expression of creativity and productivity, and is important for success in many areas of life.

CONTENT

Abstract coefficients. Linear variation. Antilogarithms. Matrices. Determinants. Binomial expansions. Roots of complex numbers. Advanced trigonometric equations. Identities. Exponential functions. Permutations and combinations. Advanced complex roots. Advanced sequence problems. Arithmetic and geometric series. Translations of conic sections. Logarithmic inequalities. Inverse matrices.

OBJECTIVES

Students will acquire experience and competence in the content areas listed above. Students will be able to define terms, discuss concepts, and perform operations with values and variables as advanced mathematical skills are developed. Students will build upon their foundations in the content areas listed above for expertise in advanced algebra, advanced geometry, trigonometry, and introductory calculus, yielding proficiency in useful mathematical skills as well as preparing students for additional challenging mathematics courses in the future.

TEXT

Advanced Mathematics (Lessons 61-125), *Second Edition*, Saxon Publishers

INSTRUCTIONAL MATERIALS

Textbook, handouts, internet resources

EVALUATION

Tests, quizzes, homework

TIME & CREDIT

55 min/day, 5 days/week, ½ credit per semester, first & second semesters, offered to individuals as necessary by contract credit

COURSE DESCRIPTION
Consumer Math

PHILOSOPHY

The consistency of mathematical truths demonstrates the orderliness, precision and consistency of God. Mathematical study should result in greater appreciation of the works of God in His creation. Man's creativity, like God's, often requires mathematical understanding. The understanding of mathematical concepts adds to our understanding and expression of creativity and productivity, and is important for success in many areas of life.

CONTENT

Review of math skills. Measurement. Income. Budgeting. Banking. Saving and interest. Borrowing. Transportation costs. Food costs and calculations. Clothing costs. Housing costs and calculations. Maintenance costs and calculations. Insurance. Taxes. Vacation costs and calculations.

OBJECTIVES

Students will acquire experience and competence in the content areas listed above. Students will be able to define terms, discuss concepts, develop decision making abilities, and perform operations and calculations in the content areas listed above.

TEXT

Consumer Math, Second Edition, BJU Press

INSTRUCTIONAL MATERIALS

Textbook, graph paper, notebook, scientific calculator

EVALUATION

Tests, quizzes, homework problems, worksheets

TIME & CREDIT

55 min/day, 5 days/week, ½ credit per semester, first & second semesters, offered to individuals as necessary by contract credit