Online Courses for High School Students
1-888-972-6237

Algebra 2 (Credit Recovery)

A diagnostic driven credit recovery course is designed to give an expanded opportunity for students who did not succeed the first time in the course.

Students are given the opportunity in each learning unit to demonstrate their knowledge in that area of study. If they demonstrate competency in their unit assessment they will be presented with the following unit. If they do not demonstrate competency then they are required to do the entire unit.

Requirement:
For a student to take a credit recovery course, they must have already taken the class unsuccessfully and have the appropriate seat time.

Prerequisite: Algebra 2 (Student must have taken Algebra 2 unsuccessfully and have the appropriate seat time).
Course Length: One Semester
Required Materials: A graphing calculator. Gcalc is a free download if you do not have a hand-held.

Semester A

Algebra 2 CR further extends the learner's understanding of major algebra concepts such as expressions, equations, functions, and inequalities. An emphasis will be placed on the use of appropriate functions to model real-world situations and solve problems that arise from those situations. A focus is also on graphing functions by hand and understanding and identifying the parts of a graph.

Equations, Inequalities and Linear Functions

- Evaluating Expressions
- Using Formulas
- Properties of Real Numbers
- Solving Equations
- Absolute Value Equations
- Solving Inequalities
- Compound Inequalities
- Absolute Value Inequalities
- Relations and Functions
- Writing Linear Equations

Quadratic Relations and Equations

- Graphing Quadratic Functions
- Solving Quadratic Equations by Graphing
- Solving Quadratic Equations by Factoring

- Solving Quadratic Equations Using Perfect Squares and Difference of Squares
- Adding and Subtracting with Complex Numbers
- Multiplying and Dividing Complex Numbers
- Completing the Square
- Quadratic Formula and Discriminant
- Graphing and Solving Quadratic Inequalities
- Transformation of Quadratic Graphs

Polynomial Functions and Equations

- Properties of Exponents
- Adding, Subtracting and Multiplying Polynomials
- Dividing Polynomials
- The Remainder Theorem and Factor Theorem
- Factoring Polynomials
- Solving Polynomial Equations
- Fundamental Theorem of Algebra, Roots and Zeros
- Finding Rational Zeros
- Graphing Polynomial Functions
- Modeling with Polynomial Functions

Radical Functions and Equations

- Adding and Subtracting Functions
- Multiplying and Dividing Functions
- Composition of Functions
- Inverse Relations and Functions
- nth Roots
- Operations with Radical Expressions
- Graphing Square Root Functions and Inequalities
- Rational Exponents
- Solving Radical Equations
- Solving Radical Inequalities

Exponential and Logarithmic Functions

- Exponential Growth
- Exponential Decay
- Exponential Equations and Inequalities
- Logarithmic Functions
- Graphing Logarithmic Functions
- Solving Logarithmic Equations and Inequalities
- Properties of Logarithms
- Common Logarithms
- The Number e and Natural Logarithms
- Exponential and Logistic Functions

Rational Functions and Relations

- Direct and Joint Variations
- Inverse and Combined Variations
- Graphing Reciprocal Functions
- Graphing Rational Functions
- Multiplying Rational Expressions
- Dividing Rational Expressions
- Finding the Least Common Multiple of Polynomials
- Adding and Subtracting Rational Expressions
- Solving Rational Equations
- Solving Rational Inequalities

Semester B

Algebra 2 CR builds on the concepts learned in the first semester and prepares the learners with the building blocks needed to dive deeper into trigonometry, pre-calculus, and advanced probability and statistics.

Sequences and Series

- Introduction to Sequences
- Arithmetic Sequences and Series
- Geometric Sequences and Series
- Infinite Geometric Series
- Recursive Rules for Sequences
- Fibonacci Sequence
- Iteration
- Pascal's Triangle
- The Binomial Theorem
- Proof by Mathematical Induction

Probability and Statistics

- Counting Methods
- Theoretical, Experimental and Compound Probabilities
- Probability of Independent and Dependent Events
- Data Distributions
- Probability Distributions
- Analyzing Probability Distributions
- Binomial Distribution
- Normal Distribution
- Confidence Intervals
- Hypothesis Testing

Conic Sections

- Midpoint Formula
- Distance Formula
- Equations of Parabolas
- Circles
- Equations of Ellipses

- Graphing Ellipses
- Hyperbolas
- Conic Sections
- Systems of Linear and Nonlinear Equations
- Linear and Nonlinear Systems of Inequalities

Trigonometric Functions

- Right Triangle Trigonometry
- Angles and Their Measures
- Trigonometric Functions and Angles
- Inverse Trigonometric Functions
- Law Sines
- Law of Cosines
- Circular Functions
- Periodic Functions
- Graphing Trigonometric Functions
- Translating Trigonometric Graphs

Trigonometric Identities

- Reciprocal Trigonometric Functions
- Trigonometric Identities
- Simplifying Expressions Using Trigonometric Identities
- Verifying Trigonometric Identities
- Using Sum and Difference Identities
- Using Double-Angle Identities
- Using Half-Angle Identities
- Solving Trigonometric Equations
- Extraneous Solutions in Trigonometric Equations
- Graphing Trigonometric Functions Using Technology

Algebra 2 Cumulative Review

- Review of Equations, Inequalities and Linear Functions
- Review of Quadratic Relations and Equations
- Review of Polynomial Functions and Equations
- Review of Radical Functions and Equations
- Review of Exponential and Logarithmic Functions
- Review of Functions and Relations
- Review of Sequences and Series
- Review of Probability and Statistics
- Review of Conic Sections
- Review of Trigonometric Functions
- Review of Trigonometric Identities