

Algebra I (E) – Credit Recovery

COURSE DESCRIPTION:

The purpose of this course is to allow the student to gain mastery in working with and evaluating mathematical expressions, equations, graphs, and other topics in a year long algebra course. Topics included are real numbers, simplifying real number expressions with and without variables, solving linear equations and inequalities, solving quadratic equations, graphing linear and quadratic equations, polynomials, factoring, linear patterns, linear systems of equality and inequality, simple matrices, sequences, and radicals. Assessments within the course include multiple-choice, short-answer, or extended response questions. Also included in this course are self-check quizzes, audio tutorials, and interactive games.

This course has been specifically built with the credit recovery student in mind. The course content has been appropriately chunked into smaller topics to increase retention and expand opportunities for assessment. With each topic, diagnostic quizzes are presented to the student, allowing students to pass through areas of content. Audio readings are included with every portion of content, allowing auditory learners the opportunity to engage with the course. Test pools and randomized test questions are utilized in pre- and post-topic quizzes as well as unit exams, ensuring that students taking the course will not be presented with the same exams.

The ELL version of the course includes additional practice activities (such as cloze activities), as well as pre-topic vocabulary lists, that introduce key vocabulary in English and in Spanish.

COURSE OBJECTIVES:

After completing this course, students will be able to:

- Read, write, evaluate, and understand the properties of mathematical expressions including real numbers, radicals, and polynomials
- Add, subtract, multiply, and divide radical expressions, polynomials, and polynomial expressions
- Read, write, solve, and graph linear and quadratic equations and inequalities
- Students will solve absolute value equations and inequalities
- Work effectively with ratios and direct and inverse variation
- Solve systems of linear equations and inequalities
- Work with arithmetic sequences and linear patterns
- Understand basic statistics including measures of central tendencies and box plots
- Understand different types of graphs, including histograms, line graphs, circle graphs, and stem-and-leaf plots

PREREQUISITES: Pre-Algebra or Similar Course

COURSE LENGTH: Two semesters

REQUIRED TEXT: None

(E) = ELL – Assistive Content Included in this Course

Algebra I (E) – Credit Recovery (continued)

COURSE OUTLINE:

Semester 1

Numbers and Expressions

- Evaluating Expressions
- Some Useful Properties
- Integers
- Exponents and Roots
- Logic and Graphs

Real Numbers

- Rational Numbers
- Addition and Subtraction of Rational Numbers
- Multiplication and Division of Rational Numbers
- Estimation and Problem Solving
- Closure and Properties of Equality

Equations

- Equations
- Multi-Step Problems
- Ratios, Proportions and Percent
- Problem Solving

Functions and Linear Equations

- The Coordinate Plane and Relations
- Graphing Linear Equations
- Patterns and Sequences
- Linear Equations
- Data

Inequalities

- Simple Inequalities
- Multi-Step Inequalities
- Absolute Value
- Graphing Inequalities in Two Variables

Semester 2

Solving Systems of Linear Equations and Inequalities

- Graphing Systems of Equations
- Substitution
- Elimination and Matrices
- Graphing Inequalities
- Statistics and Box and Whiskers

Polynomials and Factoring

- Scientific Notation
- Polynomials and Addition and Subtraction
- Multiplying Polynomials
- Factors and GCF
- Factoring Trinomials
- Special Factors

Quadratic Functions and Radicals

- Quadratic Functions
- Solving Quadratic Equations
- Radicals and Radical Operations
- Radical Equations

Rational Expressions

- Inverse Variation
- Multiplying and Dividing Rational Expressions
- Adding and Subtracting Rational Expressions
- Solving Rational Equations

(E) = ELL – Assistive Content Included in this Course