

Second Year Algebra 1

MTHH039059

Credits: 0.5 units / 5 hours | NCAA Approved

Arkansas State Standards

Based on UNHS internal Curriculum review this course aligns to Arkansas Standards Framework.

This course also aligns to Common Core Mathematics Standards.

Required Assessments

7 Unit Evaluations, 2 Projects, 3 Progress Tests, 7 Teacher Connect Activities

Course Description

Second Year Algebra 1 is the first in a two-semester series of courses. It builds and expands on the concepts and tools learned in earlier algebra and geometry courses to evaluate and graph functions and equations with two or more variables, differentiate between expressions, equations, inequalities, and absolute values, use the quadratic formula to write and solve quadratic equations and functions, solve radical functions, and work with matrices. A graphing calculator is required for this course.

PREREQUISITES: First Year Algebra

Course Objectives

When you have completed the materials in this course, you should be able to:

1. Learn and use the various tools of algebra.
2. Evaluate functions and equations, and be able to graph them.
3. Differentiate between expressions, equations, inequalities, and absolute value.
4. Solve a system of equations with two or more variables.
5. Work with matrices and add, subtract, and multiply them.
6. Write a matrix applied to a real-world problem.
7. Learn the quadratic formula.
8. Write and solve quadratic equations and functions.
9. Solve radical functions.
10. Evaluate rational exponents and apply them in problem solving.

Course Outline

Unit 1: Tools of Algebra

Lesson 1: Algebraic Expressions and Equations
Lesson 2: Inequalities, Absolute Value, and Probability

Unit 2: Functions, Equations, and Graphs

Lesson 3: Linear Equations and Functions
Lesson 4: Families of Functions

Unit 3: Linear Systems

Lesson 5: Systems of Equations and Inequalities
Lesson 6: Linear Programming and Multiple Dimensions

Unit 4: Quadratic Equations and Functions

Lesson 7: Quadratic Functions and Parabolas
Lesson 8: Solving Quadratic Equations

Unit 5: Polynomials and Polynomial Functions

Lesson 9: Polynomials
Lesson 10: Polynomial Functions

Unit 6: Matrices

Lesson 11: Operations with Matrices
Lesson 12: Matrices, Determinants, and Inverses

Unit 7: Radical Functions and Rational Exponents

Lesson 13: Radical Expressions
Lesson 14: Radical Equations

Required Textbook and Materials

(available through Follett virtual bookstore at <http://highschool.nebraska.bkstr.com>)

TI-83+ Graphing Calculator
NO Required Textbook