

SOPHIA Learning

CA0050: Foundations of College Algebra (3 semester credits)

COURSE DESCRIPTION

The course builds foundational algebraic and problem solving skills needed to succeed in a college-level algebra course. You will build your understanding of linear and quadratic relationships, and apply these concepts to real world situations through Sophia's scenario-based activities.

Course Effective Dates: April 2016 – Present

Prerequisite(s): Lower-division baccalaureate/associate degree course – no prerequisites

Length of course: This is a self-paced course. Students have 60 days with an additional 30-day extension (if needed) to complete the course.

ACE CREDIT® Recommendation: In the vocational certificate category, 3 semester hours in mathematics (Beginning Algebra)(3/16).

LEARNING OUTCOMES

Upon completion of the course, the student will be able to:

1. Simplify and evaluate numerical expressions
2. Solve linear equations and inequalities
3. Interpret slope, intercepts, and graphs of lines
4. Simplify and multiply exponents and polynomials
5. Factor polynomial expressions
6. Solve quadratic equations
7. Perform operations on complex numbers

OUTLINE OF MAJOR CONTENT AREAS

- The Order of Operations
- Operations with Fractions
- Simplifying Square Roots
- Converting a Decimal into a Fraction
- Introduction to Percents
- Solving Single Step Equations
- Combining Like Terms
- Writing an Equation
- Solving Equations with Distribution
- Solving Linear Inequalities
- Evaluating a Function
- Finding the Slope of a Line
- Identifying Intercepts
- Graphing a Line
- Horizontal and Vertical Lines

- Solving Systems of Equations
- Properties of Exponents
- Multiplying Terms
- Multiplying Binomials
- Simplifying Algebraic Fractions
- Quadratic Factoring
- Factoring in Rational Expressions
- Solving a Quadratic Equation
- The Quadratic Formula
- Graphing Quadratic Equations
- Imaginary Numbers
- Operations with Complex Numbers

GRADING

This is a pass/fail course. Students are required to complete all 6 formative and 2 summative assessments with an overall course average of 70% or better.