

# SOPHIA Learning

## CA1001: College Algebra (3 semester credits)

### COURSE DESCRIPTION

Sophia's College Algebra course builds mastery around linear, non-linear, and other mathematical functions that include algebraic, graphic, and numeric properties. Students will demonstrate the application of these concepts to the real life scenarios.

**Course Effective Dates:** March 2019 - Present

**Prerequisite(s):** Entry level Gen Ed 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 lower-division baccalaureate/associate degree category, 3 semester hours in applied college algebra or college algebra (2/19).

### LEARNING OUTCOMES

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

1. Perform mathematical functions involving real numbers.
2. Apply mathematical concepts to linear equations, inequalities, and series/sequences.
3. Apply mathematical concepts to linear representations and systems of linear equations and inequalities.
4. Apply mathematical concepts to algebraic expressions and quadratic equations.
5. Apply mathematical concepts to functions and non-linear equations.

### OUTLINE OF MAJOR CONTENT AREAS

- Essential Concepts
- Exponents
- Radicals
- Operations with Expressions
- Solving Equations
- Inequalities
- Absolute Value
- Arithmetic Sequences
- Graphing and Writing Linear Equations
- Graphing and Writing Linear Inequalities
- Polynomials
- Quadratic Equations
- Quadratic Inequalities
- Graphing Quadratic Equations
- Graphing Quadratic Inequalities
- Complex Numbers
- Functions

- Rational Expressions
- Rational Equations
- Exponential Equations
- Logarithmic Equations
- Geometric Series
- College Algebra in Context

### **GRADING**

This is a pass/fail course. Students are required to complete all 18 formative and 5 summative assessments with an overall course average of 70% or better.