



# C-ID Descriptor

## College Algebra for STEM

### Descriptor Details

- **Descriptor Title:** College Algebra for STEM
- **C-ID Number:** 151
- **Units:** 4.0
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### General Description

College level course in algebra for majors in science, technology, engineering, and mathematics: polynomial, rational, radical, exponential, absolute value, and logarithmic functions; systems of equations; theory of polynomial equations; analytic geometry

### Prerequisites

Intermediate Algebra

### Corequisites

No information provided

### Advisories

No information provided

### Content

1. Functions including linear, polynomial, rational, radical, exponential, absolute value, logarithmic: definitions, evaluation, domain and range;

2. Inverses of functions;
3. Algebra of functions;
4. Graphs of functions including asymptotic behavior, intercepts, vertices;
5. Transformations of quadratic, absolute value, radical, rational, logarithmic, exponential functions;
6. Equations including rational, linear, polynomial, radical, exponential, absolute value, logarithmic;
7. Linear, nonlinear, and absolute value inequalities;
8. Systems of equations and inequalities;
9. Characterization of the zeros of polynomials;
10. Properties and applications of Complex numbers;
11. Properties of conic sections; and
12. Sequences and series.

### **Lab Activities**

No information provided

### **Objectives**

*Upon successful completion of the course, students will be able to:*

1. Analyze and investigate properties of functions;
2. Synthesize results from the graphs and/or equations of functions;
3. Apply transformations to the graphs of functions;
4. Recognize the relationship between functions and their inverses graphically and algebraically;
5. Solve and apply rational, linear, polynomial, radical, absolute value, exponential, and logarithmic equations and solve linear, nonlinear, and absolute value inequalities;
6. Solve systems of equations and inequalities;
7. Apply techniques for finding zeros of polynomials and roots of equations;
8. Apply functions and other algebraic techniques to model real world STEM applications;
9. Analyze conics algebraically and graphically; and
10. Use formulas to find sums of finite and infinite series.

**Evaluation Methods**

Tests, examinations, homework or projects where students demonstrate their mastery of the learning objectives and their ability to devise, organize and present complete solutions to problems.

**Textbooks**

A college level text designed for science, technology, engineering and math majors, and supporting the learning objectives of this course.