C-ID Descriptor
College Algebra for Liberal Arts

Descriptor Details

- **Descriptor Title**: College Algebra for Liberal Arts
- **C-ID Number**: 150
- **Units**: 3.0
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General Description

College level course in algebra for majors in the Liberal Arts: 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, absolute value, rational, radical, exponential, logarithmic: definitions, evaluation, domain and range;
2. Algebra of functions;

3. Graphs of functions including asymptotic behavior, intercepts, vertices;
4. Equations including rational, linear, absolute value, polynomial, radical, exponential, logarithmic;
5. Linear and nonlinear inequalities;
6. Systems of equations;
7. Complex numbers; and
8. Substantial introduction to at least two of the following:
    a. Inverses of functions
    b. Transformations of quadratic, absolute value, radical, rational, logarithmic, exponential functions
    c. Linear programming
    d. Characterization of the zeros of polynomials
    e. Matrices and determinants.
    f. Properties of conic sections
    g. Combinatorics and probability theory
    h. 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. Solve and apply equations including rational, linear, absolute value, polynomial, exponential, and logarithmic equations;
4. Solve linear and nonlinear systems of equations and inequalities;
5. Apply functions and other algebraic techniques to model real world applications; and
6. For additional topics:
    a. Recognize the relationship between functions and their inverses graphically and algebraically
    b. Apply transformations to the graphs of functions
    c. Use linear programming to solve problems.
    d. Apply techniques for finding zeros of polynomials and roots of equations
    e. Solve and apply linear systems using matrices and determinants

f. Analyze conics algebraically and graphically
g. Use combinatorial rules to calculate probabilities.
h. Use sequences and series to solve application problems.

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 supporting the learning objectives of this course.