MATH 170: COLLEGE ALGEBRA

Citrus College Course Outline of Record

Heading	Value
Effective Term:	Fall 2024
Credits:	4
Total Contact Hours:	72
Lecture Hours :	72
Lab Hours:	0
Hours Arranged:	0
Outside of Class Hours:	144
Total Student Learning Hours:	216
Prerequisite:	Intermediate algebra or higher or direct placement based on multiple measures.
District General Education:	A3. Mathematics
Transferable to CSU:	Yes
Transferable to UC:	Yes - Approved
Grading Method:	Standard Letter

Catalog Course 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. 72 lecture hours.

Course Objectives

- Analyze and investigate properties of functions;
- Synthesize results from the graphs and/or equations of functions;
- Solve and apply equations including rational, linear, absolute value, polynomial, exponential, and logarithmic equations;
- Solve linear and nonlinear systems of equations and inequalities;
- Apply functions and other algebraic techniques to model real world applications;
- Recognize the relationship between functions and their inverses graphically and algebraically;
- Apply transformations to the graphs of functions;
- Apply techniques for finding zeros of polynomials and roots of equations;
- Solve and apply linear systems using matrices and determinants; and
- Analyze conics algebraically and graphically.

Major Course 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;
8. Inverses of functions;
9. Transformations of quadratic, absolute value, radical, rational, logarithmic, exponential functions;
10. Characterization of the zeros of polynomials;
11. Matrices and determinants; and
12. Properties of conic sections.

Examples of Required Writing Assignments

Provide written solutions to application problem.

Examples of Outside Assignments

Given a polynomial function, use Descartes' Rule of Signs, the upper and lower bounds theorems, rational zeros theorem, and synthetic division to find real zeros.

Instruction Type(s)

Lecture, Online Education Lecture

IGETC Area 2: Mathematical Concepts and Quantitative Reasoning

Yes