

MATH 11 : COLLEGE ALGEBRA

California State University, Sacramento · Department of Mathematics & Statistics

This course is to prepare students for Math 29 and other courses requiring College Algebra. It is graded CREDIT/NO CREDIT. THERE IS A GROUP FINAL EXAM, announced in the schedule of classes each semester.

CATALOG DESCRIPTION

Prepares students for Precalculus and other courses requiring algebra. Linear equations and inequalities, absolute value equations and inequalities, systems of linear equations, quadratic equations, polynomial expressions and equations, rational expressions and equations, roots and radicals, and exponential and logarithmic equations. Note: Applicable to workload credit for establishing full-time enrollment status, but not applicable to the baccalaureate degree. **Graded:** Remedial Grade Basis. **Units:** 4.0.

PREREQUISITES

One year each of high school algebra and geometry; and a passing score on the Intermediate Algebra Diagnostic (IAD) test.

ASSIGNMENTS

A variety of reading and problem solving assignments will be part of the course.

EXAMINATIONS

There will be regular midterm examinations and a comprehensive final examination for this course.

OUTLINE

I. Basic Algebra (5 Weeks)

- A. The real numbers
- B. Absolute value
- C. Integer exponents
- D. Roots and radicals
- E. Rational exponents
- F. Polynomials
- G. Binomial theorem
- H. Rational expressions
- I. Complex numbers
- J. Partial fractions ¹

II. Equations and Inequalities (5 Weeks)

¹Optional

- A. Linear equations
- B. Formulas and word problems
- C. Quadratic equations
- D. Equations reducible to quadratics
- E. Equations containing radicals
- F. Linear inequalities
- G. Quadratic inequalities
- H. Fractional inequalities
- I. Absolute value equations & inequalities
- J. Variation and word problems
- K. Systems of equations in two variables
 - 1. Linear
 - 2. Nonlinear

III. Functions, Equations, and Their Graphs (1 Week)

- A. The Cartesian plane
- B. Functions and equations
- C. A few graphs by plotting points

IV. Logs and Exponents (3 Weeks)

- A. Exponential functions
- B. Log functions
- C. Properties of logs
- D. Solving exponent and log equations

V. Advanced Topics (As Time Permits) ¹

- A. Math induction
- B. Sequences
 - 1 Arithmetic
 - 2 Geometric
- C. Series (Finite)