

CALIFORNIA STATE UNIVERSITY, SACRAMENTO
Department of Mathematics and Statistics

SYLLABUS

Math 11: College Algebra

Prerequisites: One year each of high school algebra and geometry; passing score on Elementary Algebra Diagnostic Test. This course may be taken for workload credit toward establishing full-time enrollment status, but is not applicable to the baccalaureate degree.

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.

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*Optional Sections

- II. Equations and Inequalities 5 Weeks
 - 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

- a. Math Induction
- b. Sequences
 - 1. Arithmetic
 - 2. Geometric
- c. Series (Finite)