

FOLSOM CORDOVA UNIFIED SCHOOL DISTRICT

**Course Outline
Algebra 100**

Date: May 2007

Subject Area: Mathematics

**Proposed Grade Level(s): 11-12
10 with permission**

Course Length: 1 Year

Grading: A-F

Numbers of Credits: 5/semester

Prerequisite: Placement by IEP Team

COURSE DESCRIPTION:

This is a traditional one-year Algebra 1 course. At the end of the course, students will have studied all of the State Algebra 1 standards at a modified reading level/pace. This course emphasizes the development of logic and skill within the framework of algebraic thought and methodology. Placement in this class is determined by IEP.

GENERAL GOALS/PURPOSES:

As stated in the mathematics framework, students in Algebra learn to reason symbolically, and the complexity and types of equations and problems that they are then able to solve increase. Key content includes understanding, writing, solving, and graphing linear and quadratic equations. Students will also study monomial and polynomial expressions. In addition to focusing on the basic techniques of Algebra, students will extend their mathematical reasoning in many ways including, justifying steps of an Algebraic procedure, and checking Algebraic arguments for validity.

STUDENT READING COMPONENT:

Students will receive instruction on the effective use of their textbook. Algebra 1 includes applications where effective reading and analysis are taught as part of the course. Also, projects may be used to emphasize reading across the curriculum.

STUDENT WRITING COMPONENT:

Students will have opportunities to express in writing their understanding of concepts. All written work will follow standard rules of English. Any research projects will follow MLA format which has been distributed at all secondary sites. Note taking will be a critical part of this class. Students will be expected to use notes taken to complete and understand problems presented to them.

STUDENT ORAL COMPONENT:

Students will have opportunities to express their understanding of concepts orally while presenting their work to the class.

FINAL ASSESSMENT:

A modified version of the District Algebra 1 final will be given according to the IEP and used for placement and assessment purposes.

DETAILED UNITS OF INSTRUCTION:

Semester 1

Connections to Algebra

1. Variables in Algebra
2. Exponents and Powers
3. Order of Operation
4. Equations and Inequalities
5. Translating words into mathematical symbols/Introduction to problem solving
6. Tables and Graphs
7. Introduction to Functions
8. Real Number Line
9. Absolute Value
10. Computations with Real Numbers
11. Distributive Property
12. Combining like Terms

Solving Linear Equations

1. Solving one-step and multi-step equations
2. Solving equations with variables on both sides
3. Formulas
4. Functions
5. Coordinate Planes
6. Functions
7. Tables and Graphs

Linear Equations and Functions

1. Graphing lines using intercepts
2. Slope
3. Graphing lines using Slope Intercept Form
4. Direct Variation

Writing Linear Equations

1. Slope Intercept Form
2. Point-Slope Form
3. Writing linear equations given two points
4. Parallel and Perpendicular Lines

Data and Data Analysis

1. Mean
2. Mode and Median
3. Minimum, Maximum, and Range
4. Frequency Tables
5. Scatter Plots

Solving and Graphing Linear Inequalities

1. Solving one-step and multi-step linear inequalities

Semester 2

Systems of Linear Equations and Inequalities

1. Graphing Linear Systems
2. Solving linear systems by substitution and linear combinations
3. Applications of Linear Systems
4. Graph solutions to Systems of Linear Inequalities

Exponents and Exponential Functions

1. Properties of Exponents
2. Zero and Negative Exponents
3. Scientific Notation

Quadratic Equations and Functions

1. Square Roots
2. Radical and the Number Line
3. Simplifying Radicals
4. Adding and Subtracting Radicals
5. Multiplying and Dividing Radicals
6. Radical Equations
7. Pythagorean Theorem
8. Solving Quadratic Equations using the Quadratic Formula
9. Solving Quadratics Equations by completing the square
9. Zeros and Quadratic Functions
10. Operations with Radical Equations

Polynomials and Factoring

1. Adding, Subtracting and Multiplying Polynomials
2. Solving Quadratics with Factoring
3. Zero Product Property

Rational Expressions and Equations

1. Proportions
2. Simplifying Rational Expressions
3. Solving Simple Rational Equations
4. Dividing Rational Expressions (include long division of the polynomials)

SUGGESTED TEXT:

Globe Fearon, Pearson Learning Group *or* current District adopted textbook, McDougal Littell for Algebra 1

All students should have access to district core materials as a first option

THIS COURSE WILL PREPARE STUDENTS FOR THE CAHSEE AND/OR FCUSD EXIT EXAMS IN:

Math

LAB FEE, IF REQUIRED:

None

SUBJECT AREA CONTENT STANDARDS TO BE ADDRESSED:

See “Detailed Units of Instruction”

DISTRICT ESLRs TO BE ADDRESSED:

When students exit a secondary mathematics course, they will be:

- **Self-directed Learners** who will be able to use notes and a textbook to assist them in continuing their learning outside of the classroom setting.
- **Effective Communicators** who can explain mathematical concepts to others and use mathematics to organize and explain data.
- **Quality Producers/Performers** who understand the importance of neat organized work that demonstrates their thinking and understanding of the solution they’ve formed to solve a problem.
- **Constructive Thinkers** who are able to attack problems with organization, logic, and mathematical skills they’ve developed in a systematic fashion.
- **Collaborative Workers** who can work in a variety of settings in culturally diverse groups. They will be able to form and use study groups to strengthen their own understanding in addition to providing the same service for classmates.
- **Responsible Citizens** who accept the consequences of their actions and who demonstrate their understanding of their role in the learning process.