

San Francisco State University
Department of Mathematics
Course Syllabus

MATH 575
Mathematics in the Middle School Classroom

Prerequisites

Math 565 with a C or better or consent of instructor.

Bulletin Description

Designed for current or prospective middle school teachers of mathematics. Topics in algebra, number theory, geometry, probability, and statistics.

Course Objectives

This course has two main objectives: as the first of three courses in a series that lead to a supplemental credential for teaching mathematics in middle school and as a way for current middle school teachers to improve their understanding of the mathematics they teach. The course focuses on two of the major strands in the middle school curriculum:

- Geometry and measurement
- Algebraic thinking

Other aspects of mathematics, including problem solving and reasoning, play an important part as well. In particular, students will be expected to write clear explanations of much of their work, and the course will focus on ideas and understanding rather than on mechanical procedures.

Evaluation of Students

Students are graded on their ability to write clear explanations and descriptions and to solve problems in the content area of the course. Their grade will be based on weekly problem sets, an in-class or take-home examination and a final examination.

Course Outline

Topics	Number of Weeks
Area and the Pythagorean theorem	3
Similarity and angles	2
Volume and surface area	2
Use of variables to describe different types of patterns	1
Role of distributive law in equivalent equations	1
Graphs and their relations to tables, equations in symbolic form and real world situations. Also the use of graphing calculators.	2
A study of linear equations and the role of slope.	3

Textbooks and Software

None. There will be handouts in class.

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