

Chaminade University of Honolulu
ED446 - Advanced Math & Geometry
Instructor - Joe Monaco
Office Hours - Mon., 5:00-5:30 p.m.

Spring 2002
Mon., 2:00-5:00 p.m.
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Rationale

The National Council of Teachers of Mathematics (NCTM) states that "knowing math is doing math." This applies to all levels of instruction, K-12. In this spirit, this course focuses on math concepts presented in grades 4-8 and how to teach them using concrete models. Since we know that students need to talk about how they think about math, emphasis is on student involvement in their own learning through communication and cooperative learning activities.

Outcomes

1. Students will model cooperative learning strategies in order to better facilitate communication and mathematical reasoning.
2. Students will use concrete models in order to improve their capacity to teach/learn mathematical concepts.
3. Students will learn how to teach mathematics in a developmentally appropriate manner.

Course Requirements and Evaluation

Manual of lesson plans	50%
Attendance and participation	40%
Presentation of lesson	10%

Manuals should be in lesson plan format (including a table of contents). Lesson plans should include the following: Objective(s), Materials, Procedure, Assessment (immediate and/or future), and any appropriate pictures, diagrams, or language

This class involves many hands-on activities in addition to lectures and readings from the textbook. Attendance and participation in class is a necessity.

Textbook

Van de Walle, John A. Elementary and Middle School Mathematics: Teaching Developmentally, 2001.

ED446 - SYLLABUS AND SCHEDULE

Jan. 14 **Course Introduction, Meanings of Operations
Problem Solving**

Assignment: **Do problem solving lesson plans
Read chapter 12**

Jan. 21 **Fraction Concepts**

Assignment: **Do fraction concept lesson plans
Read chapter 13**

Jan. 28 **Fraction Operations
Video - "Math in the Middle Grades" - part 1**

Assignment: **Do fraction operation lesson plans
Read chapter 18**

Feb. 4 **Probability and Statistics**

Assignment: **Do probability and statistics lesson plans
Read chapter 15**

Feb. 11 **Ratio and Proportion**

Assignment: **Do ratio and proportion lesson plans
Read chapter 21**

Feb. 18 **Holiday**

Feb. 25 **Number Theory
Video - "Math in the Middle Grades" - part 2**

Assignment: **Do number theory lesson plans**

March 4 **Integers**

Assignment: **Do integer lesson plans
Read chapter 19**

March 11 Algebra

Assignment: Do **algebra** lesson plans

March 18 Algebra

Video - "Math in the Middle Grades" - part 3

Assignment: Do algebra lesson plans

March 25 Spring Break

April 1 Algebra/ Geometry

Assignment: Do algebra/ geometry lesson plans
Read chapter 17

April 8 Geometry

Assignment: Do **geometry** lesson plans

April 15 Geometry

Assignment: Do geometry lesson plans
Read chapter 16

April 22 Measurement

Assignment: Complete all lesson plans for final manual
Prepare for lesson presentation

April 29 Student Presentations of Lessons
(xerox a lesson plan for each member of the class)

Note: Schedule is subject to change to meet the needs of the class.