

**Chaminade University of Honolulu**  
**ED446 - Advanced Math & Geometry**  
**Instructor - Joe Monaco, 395-9261 (h); 423-9611 (w)**  
**Office Hours - Mon., 5:15-5:45 p.m.**

**Fall 2001**  
**Mon., 5:45-8:45 p.m.**

## **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

~~August 27~~ **Course Introduction**, Meanings of Operations  
Problem Solving

Assignment: Do problem solving lesson plans  
Read chapter 12

Sept. 3      Fraction Concepts

Assignment: Do fraction concept lesson plans  
Read chapter 13

Sept. 10      Fraction Operations  
Video - "Math in the Middle Grades" - part 1

Assignment: Do fraction operation lesson plans  
Read chapter 15

Sept. 17      Ratio and Proportion

Assignment: Do ratio and proportion lesson plans  
Read chapter 18

Sept. 24      Probability and Statistics

Assignment: Do probability and statistics lesson plans  
Read chapter 21

October 1      Number Theory  
Video - "Math in the Middle Grades" - part 2

Assignment: Do number theory lesson plans

October 8      Integers

Assignment: Do integer lesson plans  
Read chapter 19

October 15 Algebra

Assignment: Do algebra lesson plans

October 22 Algebra

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

Assignment: Do algebra lesson plans

October 29 Algebra

Assignment: Do algebra lesson plans

Read chapter 17

Nov. 5 Geometry

Assignment: Do **geometry** lesson plans

Nov. 12 Geometry

Assignment: Do geometry lesson plans

Read chapter 16

Nov. 19 Measurement

Assignment: Read chapter 22

Nov. 26 Geometry

Assignment: Complete all lesson plans for final manual

Prepare for lesson presentation

Dec. 3 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.