

**Education 475-4**  
**Designs for Learning: Mathematics**  
**(Secondary)**

Intersession, 1987  
May 4 - June 11  
Tuesday & Thursday, 5:30 - 9:20 p.m.

Instructor: T. Schroeder  
Phone: 291-4418  
Location: MPX 7500F

**Prerequisite:**

EDUC 401/402 or equivalent.

**Objectives:**

The goals of this course are to increase teachers' confidence and competence by providing them a theoretical framework for discussing important issues in mathematics teaching and curriculum development and by providing them with experiences developing, discussing, and sharing teaching ideas with their colleagues.

**Outline of Topics:**

What does it mean "to understand" mathematics? How can understanding be fostered and promoted? How can teachers assess students' understanding? How can problem solving abilities be developed?

What are the practical, classroom implications of cognitive and developmental psychology for the teaching of mathematics?

What approaches can be taken to teaching particular secondary school mathematics topics (such as fractions, decimals, ratios, and proportions; formulas and algebra; geometry, measurement, and graphing; data analysis and statistics)?

How can activities with computers enhance students' learning of mathematics?

How can teachers accommodate individual differences among students and provide appropriate remediation and enrichment?

**Course Requirements:**

Course grades will be based on participation in class discussion, individually assigned class presentations, and short homework assignments.

**Textbook: (Required)**

Posamentier, A. S. & Stepelman, J. *Teaching Secondary School Mathematics: Techniques and Enrichment Units (2nd Ed.)* Columbus, Ohio: Charles Merrill, 1986.