

**SIMON FRASER UNIVERSITY
SUMMER SEMESTER 2005**

**EDUC 475-4
DESIGNS FOR LEARNING: ELEMENTARY MATHEMATICS
(E01.00)**

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**WEDNESDAY 17:30-21:20
location Surrey Campus Room 540**

PREREQUISITE: EDUC 401/402

DESCRIPTION

The mathematics curriculum in British Columbia has changed dramatically in the past decade. New topics have been included, and old ones are now viewed from different perspectives, so teachers may find that they have to teach material that they did not encounter in their own schooling. There is also more focus on the use of calculators and manipulatives, on problem solving approaches to mathematics, and an emphasis on group work and new methods of assessment.

This course is designed for prospective and practicing elementary school teachers who are interested in exploring some basic ideas about teaching and learning mathematics. The sessions will be structured around chapters in Van de Walle's book and the corresponding sections of the IRP so as to encourage students to become familiar with these useful resources, but children's literature, topics from the history of mathematics and explorations of manipulatives will also be included in each class.

REQUIREMENTS

Students are expected to attend all classes, to participate fully in class work and discussions and to read sections of the required texts as specified throughout the semester.

In addition there are four projects to be completed.

1. Curriculum Project: Small groups of students will work together to produce a comprehensive plan for teaching the curriculum (as outlined in the BC IRP) at their chosen grade level. (40%)
2. Teaching Demonstration: Students will teach an activity to generate interest in mathematics. This could be a game, puzzle, historical anecdote or famous problem, art project or a children's storybook, but other ideas are welcomed. Students will also be required to produce a short written explanation of the relevance of the activity to the curriculum. (20%)
3. Resource Investigation: An exploration of the mathematics teaching resources available on the Internet. Students should visit about twenty sites, and then write a brief report on the five they consider most

useful. (20%)

4. Mathematics Investigation: A journal recording students' discoveries, thoughts and feelings as they carry out two mathematical investigations. Students may work alone or in groups, but the journals are to be written individually. (20%)

REQUIRED READINGS

Van de Walle, John A. Elementary & Middle School Mathematics: Teaching Developmentally (Canadian edition). Longman. New York, NY. ISBN: 0205-42077X.

British Columbia Ministry of Education. (1996). Mathematics K-7: Integrated Resource Package. Victoria, BC: Author. [available on-line at <http://www.bced.gov.bc.ca/irp>

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