

SIMON FRASER UNIVERSITY
EDUCATION 475-4
Designs for Learning: Mathematics (Elementary)
(D4.00)
(Cat #54693)

Fall Semester, 1993
(September 7 - December 6)
Location: Chetwynd (AHCOTE)

Instructor: G. Lorway
Phone:

PREREQUISITE: EDUC 401/402

COURSE DESCRIPTION

This course is designed for prospective and practising elementary teachers who wish to explore the fundamentals of learning and teaching processes as they apply to mathematics. The BC mathematics curriculum has undergone major changes in the past few years. The revised curriculum places greater emphasis on mathematics as a way of thinking with a focus on communicating, problem solving, reasoning and making connections in mathematics.

The course will draw on the latest research in mathematics education, the BC Ministry of Education "Year 2000" documents as well as current innovative practice. By active engagement in mathematical activities and an exploration of a variety of teaching strategies participants will be encouraged to examine their own learning styles and processes. On completion of the course participants should feel more at ease with mathematics in a variety of settings and applications, be able to deal confidently with the prescribed curriculum guidelines and be able to plan mathematical instruction within consistent framework.

OUTLINE OF TOPICS

BC Mathematics Curriculum
Theories of Mathematical learning
Mathematics as Problem Solving
Reasoning and Making Connections
Concept and Skills - for example:
 Pattern
 Number Sense and Numeration
 Operations and Computation
 Estimation
 Probability and Statistics
 Geometry and Spatial Sense
 Data Analysis
 Calculators and Computers
Assessment and Evaluation

(see over...)

COURSE REQUIREMENTS

Students will be expected to attend all classes, and to participate fully in class work and discussions. Specific assignments may depend on the number and background of students enrolled in the course. Grades will be based on:

- class participation
- a problem solving assignment in which students keep a journal to record their efforts and observations over a period of time
- an assignment related to available and recommended elementary mathematics teaching materials
- an assignment related to the examination of several professional journals related to the teaching of mathematics
- a presentation to the class demonstrating an idea, activity, or technique for teaching mathematics
- a lesson development assignment related to the BC Curriculum/Assessment Framework for Mathematics and related BC documents
- an assignment related to the evaluation and assessment of mathematical thinking as it relates to reporting for continuing progress.

TEXTBOOKS

National Council of Teachers of Mathematics (1989). Curriculum and Evaluation Standards for School Mathematics. Reston, VA; Author.

National Council of Teachers in Mathematics (1991). Professional Standards for Teaching Mathematics. Reston, VA; Author.