

SIMON FRASER UNIVERSITY
EDUCATION 475-4
DESIGNS FOR LEARNING: MATHEMATICS
(ELEMENTARY)

Fall Semester, 1991

Mondays and Thursdays 3:30-5:30 p.m.

**Location: Northern Lights College,
Fort Nelson, B.C.**

Instructor: Allan Forsberg
Phone: 774-4281, 774-2738
Messages: 774-2741

COURSE DESCRIPTION:

This course is designed for prospective and practising elementary school teachers. The broad goals of the course are:

- to help students explore the fundamentals of the teaching/learning process as it applies to elementary mathematics
- to help students feel more at ease with the subject of mathematics
- to help students relate mathematics to the world outside the classroom
- to help students become familiar with and confident in the use of a variety of manipulative materials.
- to help students discuss and formulate their own rationale as to the how and the why of teaching mathematics.
- to help students deal confidently with the revised prescribed curriculum
- to help students learn to plan mathematical instruction within a consistent framework

TOPICS:

- Week 1 - The Nature of Learning, mathematical Reasoning, and Making Mathematical Connections
- Week 2 - Planning for Mathematics Instruction
 - Using the Integrated Resource Package 1995, N.C.T.M. Standards, and other resources
- Week 3 - Mathematics as Problem Solving
- Week 4 - Number Theory, Patterns and Relationships
- Week 5 - Number Operations - Addition and Subtraction
- Week 6 - Number Operations - Multiplication and Division

- Week 7 - Rational Numbers and Decimal Concepts
- Week 8 - Estimation and Mental Computations
- Week 9 - Measurement - Foundational Ideas
- Week 10 - Ratios and Proportional Thinking
- Week 11 - Geometry and Visual Thinking
- Week 12 - Mathematics and Integration
- Week 13 - Classroom Organization
- Week 14 - Assessment, Evaluation and Remediation

EVALUATION:

Due dates and details will be discussed during the first session.
Evaluation will be based upon the following criteria:

- 25% - attendance and participation
- 25% - completion and presentation of unit plans and teaching strategies
- 25% - review and comparison of textbooks and/or resources
- 25% - written work: a response journal, and a reflection paper.

TEXTBOOKS:

Reys, R.E., Suydam, M.N. and Lindquist, M.M. (1994). **Helping Children Learn Mathematics and Manipulating**