

**SIMON FRASER UNIVERSITY
SUMMER SEMESTER 2007**

**EDUC 415-4
DESIGNS FOR LEARNING: SECONDARY
MATHEMATICS
(D01.00)**

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Tuesday 8:30-12:20 pm EDB 7500B

PREREQUISITE: EDUC 401/402

DESCRIPTION

This course is designed for prospective and practicing secondary school teachers who wish to explore the learning/teaching process as it applies to secondary school mathematics.

The objective of the course is to enhance the confidence and competence of course participants in planning and implementing instruction in the secondary school mathematics classroom while working within a consistent framework and using appropriate materials and methods.

Participants will explore both theoretical and practical aspects of mathematics teaching and learning including topics such as the role of problem solving, the role of written work, assessment and evaluation, enrichment and motivation, the structure and content of the provincial curriculum and the use of instructional resources and tools such as calculators, software, manipulatives, and the internet. Participants will also investigate and reflect upon their own mathematical thinking and learning through problem solving and extensions of the curriculum.

REQUIREMENTS

Students will be expected to attend all classes, and to participate fully in class work and discussions and complete a number of assignments. Specific details will be discussed during first session. Assignments may include the following:

- problem-solving assignments in which students keep a journal to record their efforts and solutions over a period of time
- a presentation to the class demonstrating an idea, activity, or technique for teaching mathematics or a presentation/ "dramatic enactment" of a diagnosis and remediation of a given interaction between teacher and student(s).
- brief written commentaries on selected journal and web materials relevant to class discussion
- a project of particular interest and/or relevance to the student, as negotiated with the instructor.

REQUIRED TEXTS & RESOURCES

Posamentier, A.S., Smith, B., Stepelman, J. (2006).

Teaching Secondary Mathematics: Techniques and Enrichment Units (7th ed.). Prentice Hall. Upper Saddle River, NJ. ISBN: 0131185209

British Columbia Ministry of Education (2006). Mathematics 8 and 9: Curriculum support materials. (available at http://www.bced.gov.bc.ca/irp/program_delivery/math89.htm)

British Columbia Ministry of Education (2006). Mathematics 10 to 12: Curriculum support materials. (available at http://www.bced.gov.bc.ca/irp/program_delivery/math1012.htm)

Graphing calculator: TI – 83 Plus or TI – 84 Plus recommended.

RECOMMENDED RESOURCES

Access to internet and e-mail. It is anticipated that substantial use of FirstClass accounts will be made after the first two sessions.