

**SIMON FRASER UNIVERSITY
FALL SEMESTER 2008**

**EDUC 212-3
MATHEMATICAL EXPERIENCE II: SHAPE & SPACE
(D100)**

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Thursday 1:30-4:20 CET Lab EDB 8501

PREREQUISITE:

STUDENTS WHO HAVE CREDIT FOR MATH 151, MATH 154, OR MATH 157 NEED SPECIAL PERMISSION TO PARTICIPATE IN THIS COURSE CONTACT DR. NATHALIE SINCLAIR EMAIL: nathsinc@sfu.ca FOR PERMISSION

Text: Burger, E.B. and Starbird, M. (2000) The Heart of Mathematics Key College Publishing (2nd edition)

Readings: Supplementary material will be given out on a regular basis.

Calendar description

Contemporary theories and methodologies in mathematics education will be examined and analysed. Developing an overview of mathematics education as an evolving research domain will be focal.

Justification

This course is essential for those specializing in mathematics education. The course will provide students with a broad understanding of the field in its current "state of the art". The course will introduce students to the evolution of research in the area, where "contemporary" is roughly taken to embrace the past 30 years. Research will be examined via three different focus lenses: theory, methodology, and mathematical subject matter.

Theory: Contemporary theoretical frameworks will be introduced, discussed and critiqued. The focus will be on theories that describe and explain how mathematical knowledge is acquired.

Methodology: Contemporary methodologies will be introduced, discussed and critiqued.

Subject matter: Initially, research in mathematics education focused on topics of elementary mathematics, such as addition and subtraction, fractions or word problems. It is only recently that research reached more advanced topics and concepts. Following an overview of the existing research students will chose a topic or a concept as a focus for their in-depth investigation. In addition, issues that cut across specific subject matter topics – such as proof, generalization or problem solving – will be examined.

Assessment

Weekly reading and report on readings	20%
Paper on a theory	40%

Students will be required to focus on theoretical perspective and examine it in further detail
Paper on research related to a specific content 40%
Students will be required to examine in detail research on teaching/learning and understanding content
area of their choice.

***Students in all Faculty of Education courses are encouraged to review policies pertaining to
academic integrity available on the Undergraduate Programs website:***

http://www.educ.sfu.ca/ugradprogs/student_resources/index.html
