

**SIMON FRASER UNIVERSITY
SUMMER SESSION 2005**

**EDUC 416-4
DESIGNS FOR LEARNING: SECONDARY SCIENCE
(D02.00)**

Awneet Sivia

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Tuesday/Thursday 8:30-12:20 EDB 7500F
July 4 - August 12, 2005

Pre-requisite: EDUC 401/2

Description:

This course is designed for prospective and practicing secondary teachers who wish to explore the fundamentals of Science teaching and learning. The course will draw from literature about Science education and students will be expected to apply theoretical frames to classroom practice. Students are expected to be familiar with a variety of teaching strategies, including group work. Students will be expected to engage in conversations and write about curriculum development issues arising from research traditions such as constructivism, feminism, critical pedagogy, and anti-racism. Students will draw upon their passion for Science as a starting point for developing lessons and activities to inspire learning in their classrooms. Topics include holistic science, teaching/learning strategies in science, assessment approaches, critical thinking in science, story and metaphors in science, aboriginal and culturally defined science, models of teaching and learning, representations of science understanding, science literacy and special education. Finally, students will, through this course, prepare themselves to be lifelong innovators in Science education.

Objectives:

On completion of this course, it is hoped that students will feel more at ease with teaching students Science at the secondary level, be able to deal confidently with prescribed curriculum, and be able to plan teaching and learning activities which support a growth in Science understanding. Students will develop curriculum framed from a variety of theoretical perspectives and analyze how to create and nurture a scientific community in their classrooms.

Assignments:

1. Critical Challenge Lesson and Analysis 25%
2. Science Connections 15%
3. Conceptual Representation (model) 15%
4. Unit Plan 25%

5. Curriculum Inquiry Paper 20%
6. Class participation and attentiveness to readings and in class learning tasks. (REQUIRED FOR COURSE CREDIT)

Required Readings:

Science 8-10 Integrated Resource Package 1996, Ministry of Education, British Columbia. (available at www.bced.gov.bc.ca)

Articles and other readings will be supplied in class or via email.

Recommended Readings:

Minds on Science: Middle and Secondary School Methods, J. Hassard (1992) HarperCollins, New York, NY.

Creating a Classroom Community of Young Scientists: A Desktop Companion, J. Bloom (1998) Irwin Publishing, Toronto, Ontario. (ISBN 0-7725-2514-5)

Native Science: Natural Laws of Interdependence, G. Cajete (2000) Clear Light Publishers, Sante Fe, New Mexico.

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