SIMON FRASER UNIVERSITY
SUMMER SESSION 2004

EDUC 416-4
DESIGNS FOR LEARNING: SECONDARY SCIENCE
(D01.00)

Anweet Sivia

Mondays/Wednesday 13:00-16:50 EDB 7600
June 21 - July 30, 2004

***NOTE: The course EDUC 416-4/476-4 is now being taught by two instructors as separate sections. The course is divided into Elementary focus (D03.00) and Secondary focus (D02.00) courses. The following course outline differs slightly in content and sequence from the original EDUC 476/416 Elementary/Secondary Designs for Learning Science course outline posted by Dr. Kalra. Please note the required text and recommended readings vary as well. Topics will overlap and in cases where appropriate, there may be collaboration between the two classes.**

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 (Group lesson) 25%
2. Science Connections 15%
3. Conceptual Representation (model of science concept) 15%

4. Unit Plan 25%
5. Reflective 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 on the web at www.bced.gov.bc.ca)
Creating a Classroom Community of Young Scientists: A Desktop Companion, J. Bloom (1998) Irwin Publishing, Toronto, Ontario. (ISBN 0-7725-2514-5)
Articles and other readings will be supplied in class or via email.

Recommended Readings:
Philosophy and Science: The Wide Range of Interaction, F.E. Mosedale (1979) Prentice-Hall, Englewood Cliffs, New Jersey ISBN: 0136625770
Minds on Science: Middle and Secondary School Methods, J. Hassard (1992) HarperCollins, New York, NY ISBN: 0787950459.
Native Science: Natural Laws of Interdependence, G. Cajete (2000) Clear Light Publishers, Sante Fe, New Mexico ISBN: 1574160419.

Return to Education's Undergraduate 2004-2 Course Outlines Main Page.