

**SIMON FRASER UNIVERSITY
SUMMER SEMESTER 2006**

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

Dr. Jan van Aalst
Office: EDB 8672
Phone: 291-4825

email: vanaalst@sfu.ca

Awneet Sivia
Office: EDB 9508
Phone: 291-5992

email: asivia@sfu.ca

MONDAY 8:30-12:20
EDB 7500F

PREREQUISITE: EDUC 401/402. Educ 405 desired.

COURSE DESCRIPTION:

This course is designed for prospective and practicing secondary school teachers who wish to explore the fundamentals of the learning/teaching process as it applies to science. The course will draw from the latest research in science learning, and will show how such findings may be used in the classroom. You are expected to become familiar with and confident in the use of a variety of teaching strategies. You are also expected to prepare yourself for dealing with a range of classroom issues arising, for example, from feminist, and anti-racist research traditions. Finally, you will prepare yourself for becoming lifelong innovators in science education, continuing in your development as reflective practitioners.

OBJECTIVES:

On completion of the course it is hoped that you will feel more at ease with teaching science, be able to deal confidently with the prescribed curriculum, and be able to plan teaching and learning science instruction within a consistent framework.

TOPICS:

The nature of science; the science curriculum; misconceptions; constructivism; inquiry; critical thinking; assessment; imagination; First Nations issues; learning in the lab; computers; and further topics as decided in collaboration with students.

ASSIGNMENTS:

1. (20%; P/F) Critical Challenge. You will design a lesson that fosters critical thinking.
2. (30%; graded) Curriculum Development Project. This project is an opportunity to design a series of about five lessons on a topic of your choice, redesign one or more units you have taught in 405, design a series

of assessments for a given course, or similar work. The basis of the paper is not the actual materials you produce but a short paper in which you conceptualize your work, making contact to ideas introduced in the course.

3. (20%; P/F) Group lesson. Working in a group of 2-3 students, you prepare a lesson on a topic on the science curriculum.
4. (10%, Graded) Self-analysis of Group Lesson. After teaching your group lesson, students individually write a response to feedback received from peers and the instructors.
5. (20%; P/F) Individual inquiry. The goal of this project is to explore an area that you feel you need to work on but is not addressed by other assignments and activities. Examples might range from examining practicum experiences to exploring science within multicultural settings.

We look forward to meeting you in a stimulating course.

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