

**SIMON FRASER UNIVERSITY
SUMMER SEMESTER 2009-2 (1094)**

**EDUC 416-4
DESIGNS FOR LEARNING: SECONDARY SCIENCE
(E100)**

Carl Cloake
email: ccloake@sfu.ca

WEDNESDAY 5:30-9:20 EDB 7500B

PREREQUISITE: EDUC 401/402 (EDUC 405 desired)

SFU computer user-id

A laptop which connects to the Internet is to be brought to every class.

DESCRIPTION

This course focuses on the work of the science teacher in a secondary school and has been designed for students expecting to apply for science teaching positions in the near future. Through class discussion, presentations, group activities, online research and peer evaluation many of the practical aspects of preparing for and delivering of science lessons will be covered. Students will become familiar with the prescribed science curricula for their preferred student grade levels and subject areas, and will work on teaching materials, including unit plans, for eventual use in their lessons. Information technology will play an important role for the students of this course and its use will be evaluated for science lessons.

Objectives:

On completion of this course students should feel more confident about planning and teaching secondary science topics; both inside and outside their major subject area. They should be familiar with the provincial requirements for secondary science. They will have created and acquired a significant number of lesson plans, ideas and activities for their first/next term of teaching.

Assessment*:

1. (10%) Written Paper: Justify the characteristics of an exemplary teacher of science?
2. (10%) Innovation & creativity: Using a physical model represent a scientific concept from the science 8-12 curriculum *outside* your area of expertise.
3. (45%) Curriculum Project: As a group of three, design and fully document a series of six (6) consecutive lessons (two each) from a unit of your choice in the science 8-12 curriculum. Team present one of those lessons to the class for peer and instructor feedback. Write an individual response to the feedback received.
4. (20%) Course Reflection: Drawing on experiences before and during this course, write a reflective paper on what you have learnt, why it is important and how you expect to put what you've learnt into practice. Also include what you need to develop further to become an exemplary science teacher.

5. (15%) Attendance and participation: This assessment will be discussed during the course but it will likely be based on class-time activities, responses to readings, and submission of additional assignments during the course.

*Note: no Final Exam

Required Readings:

1. Science 8-10; Physics 11/12; Chemistry 11/12; Biology 11/12; Integrated Resource Package (IRP) and Grade collections. (1996+). Ministry of Education, B.C (See: http://www.bced.gov.bc.ca/irp/irp_sci.htm and http://www.bced.gov.bc.ca/irp_resources/lr/resource/gradcoll.htm last accessed on 4/3/2009)
2. Analysing exemplary science teaching: theoretical lenses and a spectrum of possibilities for practice / edited by Steve Alsop, Larry Bencze, and Erminia Pedretti. Maidenhead, England : Open University Press, 2005.
[An SFU electronic resource]
(See <http://site.ebrary.com.proxy.lib.sfu.ca/lib/sfu/docDetail.action?docID=10161375> last accessed on 4/3/2009)

Additional Readings will be assigned by the instructor during the course.