SIMON FRASER UNIVERSITY

Intersession 2001

EDUC 476 - 4
Designs for Learning: Elementary Science

*D03.00

NEWCALTEC

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PREREQUISITES

Educ 401/402

COURSE DESCRIPTION

This course brings together theoretical and practical considerations of what it means to teach science. Central to our theoretical considerations are such questions as: what is science?; what is ethno-science and why should we care?; what is the nature of scientific knowledge?; what is scientific inquiry?; and why should we teach science? On the practical side, we will consider such questions as: how can we facilitate children and young adults' engagement in scientific inquiry, development of critical thinking abilities, examination of the impact of scientific knowledge on their lives, consideration of the relationship between society and the environment, and development of a critical attitudes toward science? We will also consider practical ways of addressing our mandate to meet the goals of the BC science curriculum.

OBJECTIVES

Students will be asked to:

- develop clear and defensible statements about what science and scientific knowledge are
- present a rationale for "their" particular approach to science teaching (Why teach science?).
- demonstrate knowledge of ethno science and its implications in science teaching
- consider current issues in science teaching
- demonstrate knowledge and understanding of a "critical thinking" approach to science teaching
- develop lessons and a unit plan framed by a "critical thinking" approach to science teaching
- develop assessment criteria and standards that support learning and the development of critical thinking
- engage in a critical examination of practice

In general, this course is intended to provide an opportunity for students to examine alternative approaches to teaching/learning and to make defensible decisions about the theory(s) and practice(s) associated with science teaching and learning within the K—12 school system.

REQUIREMENTS

1 Critical Challenges—30%
Students are expected to develop three "critical challenges" from a content area of their choice and that meet the criteria outlined in class. (assessment rubric provided)

2. Midterm 40%
The construction of a unit plan, theme study, or other (5-6 lessons). This work is to be accompanied by a short paper that outlines the rationale for the general approach used, the linking of subject matter with teaching activity, and the choice of assessment/evaluation strategy. The plan should be of high quality. (assessment rubric provided/negotiated)

3. Final –20%
A written analysis of a science lesson taught by you or your group during the course. The lesson you report on should be part of your unit plan or theme study from the mid-term. (assessment rubric provided)

4. Participation 10%
This involves constructive participation in small groups and in the class. Criteria for the assessment of your participation will be negotiated with the class.

READINGS

Xeroxed copies will be provided during the class.

(Crosslisted with EDUC 416 D03.00)