

SIMON FRASER UNIVERSITY

EDUCATION 476-4

Designs for Learning: Natural Sciences

Regular Summer Semester, 1989
(May 8 – August 4)
Thursdays, 1:00 p.m. – 4:50 p.m.
Location: MPX 7500F

Instructor: About Cherif
Office: MPX 8667

PREREQUISITE:

Educ. 401/402 or equivalent.

AIM:

The aim of this course is to explore effective ways of teaching science to student science teachers and future science educators in B.C. The course also focuses on applying what is covered in the course to micro teaching situations. By the end of the course students should have a sufficient background necessary for both designing curriculum and teaching science.

TOPICS:

This course will examine the following topics; students will have the opportunity in the first meeting to suggest other topics they feel necessary to their development as teachers.

The nature of science and science education.

What is science? What is science education? How does the nature of science affect teaching and learning science?

Science curriculum.

The science curriculum as prescribed, curriculum models, the science curriculum as practiced, the influence of various societal and educational trends on the development of science curriculum.

B. C. Elementary Science curriculum.

Its rationale, philosophy, and goals; its content, learning approaches, and learning outcomes; critical analyses of science curricula in B.C.

Teaching and learning science.

The relationship between science and teaching science, teaching models and strategies, learning science from the urban environment, learning science through living materials, application of what is learned in the course to micro teaching.

Research in science instruction.

The teacher as researcher, what does research say about teaching, lesson and unit planning for teaching science?

Evaluation and science teaching.

Assessing science learning in students; assessing instructional effectiveness.

READINGS:

Reading materials (for which a small fee will be charged) will be distributed throughout the course. A subset of these readings can be obtained from the instructor of the course or the Faculty of Education at the beginning of the semester. In addition, we will use the Elementary Science Curriculum Guide 1-7 and Science For Children: A Book For Teachers (required text). Guest speakers will be invited and films will be shown.

REQUIREMENTS:

Students will be expected to attend regularly, read extensively, and participate actively throughout the course. As course requirements, students will be based to prepare a minor two to three page think paper which focuses on research in science teaching as well as a final paper or project and an interview.

REFERENCES:

For the students who wish to do pre-reading, the following references are recommended:

Holborn, P., Wideen, M., & Andrews, I. (1988). *Becoming A Teacher*. Toronto: Kagan and Woo Limited.

Jacobson, W. J., & Bergman, A. B. (1987). *Science For Children: A Book For Teachers*. New Jersey: Prentice-Hall, Inc.

Mays, Pamela. (1985). *Teaching Children Through Environment*. London: Hodder & Stoughton.

Row, Mary Budd. *Teaching Science as Continuous Inquiry*. McGraw-Hill.

Wassermann, S., & Ivany, J. W. G. (1988). *Teaching Elementary Science*. New York: Harper & Row, Publishers.