

SIMON FRASER UNIVERSITY
SUMMER SESSION 2004

EDUC 476-4
DESIGNS FOR LEARNING: ELEMENTARY/SECONDARY
SCIENCE
(D03.00)

Dr. Rajinder Kalra

Office:

Phone:

June 21-July 30
M/W 13:00-16:50 EDB 7600

PREREQUISITE: EDUC 401/402.

Learning:

1. Teaching of Science at the school level (elementary and secondary) in the 21st century.
2. Diminishing interest in science among students - issues and suggestions.
3. General Philosophy of Designing of Science Education program based on the "OPEN COMPETENCE" approach (UNESCO).
4. Teaching Learning Strategies in the "OPEN COMPETENCE" (UNESCO) approach to Science Education at the school level.
5. Learning and Evaluating Science Education at the Elementary and Secondary level based on "Individualized Evaluation Approach".
6. School Science: Psychological Basis of Learning.
7. Science Education for Aboriginals basing on their cultural heritage.
8. Development of Scientific temper among students.
9. Science Teaching and Inculcation of Values.
10. Teaching of Science - Forgotten Silent Majority (FSM) - Encouraging Average Achievers for Excellence in Science Education.
11. Science, Technology and Humanism at the School level - a source of Personality Development.
12. Action Research in Science Education at the Elementary Level popularizing science in schools.
13. Science as fun experiences based on activities beyond the classroom at the Elementary Level.
(Enrichment activities encouraging creativity among children.

Assignment:

Course components may include any one of the following: (25 points)

- Designing a lesson plan which lays emphasis on process skills (scientific matters)
- Comprehension of fundamentals of science

- Science as a way of thinking
- Development of scientific attitude and temper
- Science and values
- Science and citizenry

Group Discussion (10%)

On diminishing interest in science among students issues and suggestions.

Science for Aboriginals (25%)

Designing a course outline based on their cultural heritage.

Symposium (10%)

Science is fun designing of activities at the elementary/secondary level.

Secondary - questions to wonder about. (20%)

Overall comprehensive active participation in the class evaluation. (10%)

Required Text Books:

Acaster, David (etal), Cambridge Co-ordinated Science Peppin Publishing Ltd., 8th Floor, 481 University Avenue Toronto ON M5G 2E9, ISBN/order no 521-459435

Teaching of Science, Series 1&2

Nelson Canada, 1120 Birchmount Road, Scarborough, ON M1R 5G4, ISBN/order no 0-538-65563-1

Teaching of Science Techniques and Innovations with focus on values in the 21st Century

Kalra, R.M. (2002), New Delhi: Vikas Publishers Pvt Ltd (Foreward: His Holiness Dalai Lama)
ISBN 81-259-1231-2

Re-defining Science Education for Aboriginal Students

in MacIvor (1995), M. Battiste and J. Barnom (Ed.) First Nations Education in Canada, The Circle Unfolds, Canada, Univ. of B.C. Press

Recommended Science Education Journals:

Towards a First Nations Cross-cultural Science and Technology Curriculum, Aikenhead Glenns. (1996)
Curriculum Studies, Univ. Of Saskatchewan, Saskatoon (Internet)

Science Taught with a Focus on Values, Kalra, R.M. (1975) Journal of American Indian Education, College of Education (Arizona) (Internet)

Traditional Native Beliefs, Culture, Values and Science Instruction, Snivety, G. (1990), Canadian Journal of Native Education (P44-59) (UBC)

Books on Reserve in the Library:

Fullan M. and Steigelbaur S. (1991), The New Meaning of Educational Change, New York: Teachers College Press

Nehru, Jawahar, Lal (1961), Discovery of India Asia Publishing House. (Scientific Temper)

Nehru, Jawahar, Lal (1935), Glimpses of World History, Allahabad: Kitabestan

OECD (2001), Schooling for Tomorrow: What Schools for the Future? Paris

Sachs, J. (2003) The Activist Teaching Profession Buckingham Open Univ. Press

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