

EDUC 416 - 4
Designs for Learning: Secondary Science

Michael Cummings
Office: TBA
Phone: 291-3395 / 469-3005
Email: mcumming@sfu.ca

D02.00

Tuesday & Thursday 9:30-15:20 in EDB 7500F

PREREQUISITES

Educ 401/402

COURSE DESCRIPTION AND OBJECTIVES

Science education has been undergoing a revolution. Knowledge, student's learning, and how individuals make sense in the world in general have changed significantly over the past two decades. These ideas have contributed important dimensions to the teaching of science in schools. Recent research suggests knowledge to be a *social construction* within community environments. Such *socio-historic* viewpoint includes the need to understand *tools, goals, and motive* as being important elements of such learning process. This contemporary awareness is crucial for teachers developing genuine curricula and understanding their role in classrooms as science teachers. The importance of this new role arises from the need to identify the learner as being "involved" in his or her meaning-making process during social settings.

Central to our agenda, therefore, will be modeling the theme of teacher as "facilitator," rather than teacher as disseminator of knowledge. Guided by on-line (Internet) resources, the IRP, and class needs we will develop our own pedagogical and curricular program concerning *doing science, knowing science, and knowing about science*. Learning from and with various science activities will shape our classroom dialogues and writing projects. Teachers will learn to develop their own low-cost, hands-on/minds-on curriculum materials; and like the students we teach in schools, we will sort and organize elements of our own experiences into personal identities of knowledge.

COURSE REQUIREMENTS

PARTICIPANTS MUST BE ACTIVELY "ON LINE," PREFERABLY WITH INTERNET ACCESS FROM HOME.

- Each class will be followed up with an appropriate internet reading. A subsequent one-page analysis reflecting how this might impact on one's classroom practice will be due the following class. Value: 20%
- Final assignment will include developing a series of science lessons plans based on a theme appropriate to a particular learning level. Value: 40%
- Class participation that includes a group presentation of a science activity is comprised of attendance and preparedness in class. Value: 40%

READINGS

Based on on-line assignments from our web page.