

EDUCATION 486-4 SPECIAL TOPICS
MICROCOMPUTERS IN EDUCATION

Summer Session 1985
Wednesday and Friday, 8:30 - 12:20

Instructor: G. Sinclair
Location: MPX 7504

OBJECTIVES:

This course will examine the various effects of microcomputers upon the teaching-learning process.

Students in this course will:

- a) develop competencies in the operation of microcomputers.
- b) develop skills in the selection, evaluation and effective utilization of computer-based learning materials.
- c) develop an awareness of the ways computers can be used to support the instructional and administrative tasks of teachers.
- d) develop a critical awareness of the role of computers in society in general and education in particular.

This is an introductory course in which students will develop a level of computer literacy sufficient for the intelligent and critical implementation of the Apple II family of microcomputer hardware and software. It is not designed to prepare teachers to teach computing science courses nor will it prepare teachers to write computer-assisted learning materials.

OUTLINE OF TOPICS:

1. Operation of Microcomputers
 - a) components and their function
 - b) connecting peripheral devices
 - c) programs and programming
2. The Microworld Model
 - a) process versus product learning
 - b) self-directed learning
 - c) co-operative learning
 - d) learning through debugging
 - e) meta-cognitive learning
 - f) teaching and coaching
3. Uses and Abuses of Computer-Assisted Instruction (CAI)
 - a) drilling and practising
 - b) Computer tutorials and electronic workbooks
 - c) simulations
 - d) game playing

4. Explorations in Logoland
 - a) a taste of turtle graphics
 - b) a glimpse of list processing
 - c) a flash of Sprite Logo

5. Survival in the Information/Communications Age
 - a) computer as classroom manager
 - b) the classroom computer network
 - c) electronic mail
 - d) accessing electronic information banks
 - e) teleconferencing for business and pleasure

6. Social Issues
 - a) role of computers in schools and society
 - b) status of computers in B.C. schools
 - c) computers and ethics

EVALUATION:

Evaluation will be based on:

1. Four 2 page journal assignments
2. A critical evaluation of a piece of software (software review) (2-3 pages)
3. A paper discussing the implementation of a specific computer application in a classroom with a single computer, and within a classroom computer lab. (10 pages)
4. Demonstration of computer operating skills
5. Participation in class seminars and discussions

REQUIRED TEXTBOOKS:

Seymour Papert, *Mindstorms: Children, Computers, and Powerful Ideas* Basic Books, 1980

Bitter, G. & Camuse, R. *Using a Microcomputer in the Classroom* Reston Publishing, 1984

Readings in Lab Book to be distributed during the first class

NOTE -- Students are requested to read the first two chapters of *Mindstorms* before the course begins.