

SPECIAL TOPICS - MULTI-MEDIA DATABASES IN EDUCATION:
Using HyperCard to develop Classroom Applications

Summer Session 1988
July 4 - August 12
Tuesday and Thursday
1:00 - 4:50 P. M.
MPX 8542

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PREREQUISITES: Education 401/402 and working knowledge of Macs.

COURSE DESCRIPTION

This course will explore the educational uses of multi-media systems which combine the information handling capacity of the microcomputer with the print-based resources of the textbook and the presentational power of video technology. The course will be project-oriented. Over a six week period, students will design multi-media databases in such curriculum areas as biology, art history, Canadian history, chemistry, physics, and the earth sciences. These projects will combine the use of music, computer graphics, slides, online information databases, texts, and video clips, all of which will be integrated into an electronic learning environment designed for easy and intuitive browsing and exploration. Students will make use of Apple Computer's newly released HyperCard software for the MacIntosh (which its designer Bill Atkinson has called an "electronic erector set") in order to create an interactive navigable path through each database. The course will also explore the exciting potential of videodisc and CD-ROM technology in offering learners rapid, finger-tip access to a range of educational resource materials including reference texts, flim clip libraries, image banks, and sound archives.

Through the act of compiling a database, students will not only develop their research skills and collect a great deal of information in a given curriculum area, but more importantly, they will also acquire a full range of information-management skills necessary to effective teaching and learning in the classroom of the next decade.

OUTLINE OF TOPICS:

1. "Whole Brain"/"Whole Curriculum" Education -- an overview of recent trends and research findings
2. Paradigms for learning in the Information-Age -- process vs. product
3. The Media Wars in education -- the Walkman/TV culture of the home versus the print-based environment of the school
4. The educational applications of microcomputer technology
5. The uses of telecommunications in the classroom: electronic networking and accessing online databases
6. Hypertext and Hypermedia -- Historical roots and present iterations

7. Browsing, Navigating, and Serendipitous Learning -- new tools for individual discovery-based learning
8. Optical Information Systems -- managing large visual, textual, and sound-based databases with CD ROM and videodisc technology
9. Through the Analog Tunnel to the Digital World -- the use of image-scanners, video-digitizers, and digital audio recorders in constructing multi-media classroom applications
10. Putting it all together -- the uses of Macintosh and HyperCard in orchestrating multi-media learning environments

Course Requirements:

Working together in teams of two or three persons, students will be responsible for the design and compilation of an interactive multi-media database for use in the classroom. They will also be responsible for scripting a number of flexible HyperCard navigational paths (stacks) through the database, using HyperTalk, a very "friendly" programming language. This project will account for 80% of the course grade. Students will also be required to keep a journal to document their own discoveries about the uses of technology in creating and enhancing environments for learning. The journal will be worth the remaining 20% of the grade.

Course Pre-requisites

A formal course in computer programming or the educational uses of microcomputers are not pre-requisites for this course. Students should have an enthusiastic attitude towards the creative power of computer-based tools, and ideally will have experimented with at least two of the following: word processing, computer graphics, computer music, computer conferencing, online databases, video production, Logo. Before the course begins, students are expected to become familiar with the Macintosh computer and its software (minimally MacWrite and MacPaint) either through their own resources or through use of one of the Macintosh labs at SFU.

Required Reading:*

Ambron, Sueann and Kristina Hooper, eds. **Multi-media in Education.** Learning Tomorrow Series, Apple Computer Education Advisory Council, Cupertino, 1987.

Bush, Vannevar. "As We May Think," *Atlantic Monthly*, July 1945, p.101

Goodman, Danny. **The Complete HyperCard Handbook**, Bantam, 1987

Ofiesh, Gabriel. "The Seamless Carpet of Knowledge and Learning," in **CD ROM: The New Papyrus**, eds. S. Lambert and S. Ropiequet. Microsoft PRes, 1986.