

SPECIAL REPORT
of the
ACADEMIC MATTERS COUNCIL
and
PROGRAM AND BUDGET COUNCIL
concerning
**A PROPOSAL FOR AN INTERDISCIPLINARY
MINOR IN INFORMATION TECHNOLOGY**

Presented at the
607th Regular Meeting of the Faculty Senate
May 16, 2002

COUNCIL MEMBERSHIP

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(Approved without comment)

Background

In the Fall 2001 semester, the Academic Matters Council began review of a 131-page, multi-sectioned document with the title, "A University-wide Minor in Information Technology," and dated August 31, 2001. It became immediately clear that this document addressed many more issues than the proposal for an academic minor. The AMC restricted its review to the proposal for the Minor itself (pages 25-32 of the proposal), and that proposal was separated from the rest of the document

The AMC program subcommittee met several times with a group of faculty who were among the proposers of the Minor, and discussed a number of concerns voiced by subcommittee and Council members. As a result of these discussions, the proposers agreed to some changes to the curriculum, and revisions to much of the other text in the proposal.

AMC Recommendation

The result of the discussions among proposers and AMC members is the Appendix to this document, the "Proposal for an Interdisciplinary Minor in Information Technology (revised March 7, 2002)." The Academic Matters Council voted unanimously on February 20, 2002, to endorse the curriculum. Further minor changes to the other text of the proposal were agreed to following this meeting.

The Council believes that the Minor as described in the attached proposal will be an important and valuable addition to this University's undergraduate curriculum, and wholeheartedly recommends its adoption by the Senate. Its purpose, "to enable any student to confidently employ information technology, and to secure an intellectual platform from which to develop the capacity to innovate, using information technology in his or her field," falls clearly within the University's educational mission. It is not a program that will produce technical specialists, but one that will prepare students in all fields to use a variety of forms of information technology, which is becoming necessary in fields of endeavor pursued by students in the liberal arts as well as in the more technical fields.

The AMC was careful to separate its consideration of the Minor from the broader issues raised by the proposers in their August 2001 document. The Council is convinced that *no new resources* will be required to offer the Minor as proposed in the Appendix. The Council strongly urges the Faculty Senate to consider and adopt this Minor without awaiting the resolution of other matters related to information technology on this campus. The AMC encourages the continuation of the ongoing efforts of the Information Technology Task Force. Should these efforts need to continue indefinitely, the Council believes that the Task Force should be succeeded by a permanent Information Technology Steering Committee.

SPECIAL MOTION BY THE RULES COMMITTEE:

MOVED: That the Faculty Senate approve the proposed Interdisciplinary Minor in Information
39-02 Technology, as described in Sen. Doc. No. 02-038, for a period of five years; continuation
beyond five years is conditioned on a positive review by the Faculty Senate during the fourth
year (AY2005-2006).

APPENDIX

**PROPOSAL FOR AN
INTERDISCIPLINARY MINOR IN INFORMATION TECHNOLOGY**
(Proposal revised March 7, 2002)

College/School: **Multiple Colleges/Schools (see below for curriculum review structure)**

Department: **Intercollegiate Information Technology Task Force**
Head/Chair: **Bill Israel, Assistant Professor, Journalism (coordinator of Minor)**

Submission Date: **August 2001 (Revised March 2002)**
Proposed Starting Date: **Fall 2002**

I. PROPOSAL DEVELOPMENT

A. Describe the proposal.

This is a proposal for a campus-wide Minor in Information Technology. The 15-credit minor would be available to undergraduate students in all majors. It would require a technical core (2 courses), one course of broadened inquiry on the uses and implications of technology in society, and two courses applying aspects of technology at a more advanced level in disciplines across the campus.

B. Provide a brief overview of the process for developing the proposal

In 1998, the group that became the University's Information Technology Task Force began investigating the possibility of developing academic programs in information technology. [The Task Force includes faculty from a dozen departments in six schools and colleges. Information technology courses are being offered now in eight of the University's nine colleges and schools.] The Task Force concluded that this campus should have a multi-disciplinary program that includes the social impact of information technology and its applications in many areas of scholarship, rather than a more narrow program to produce technical specialists alone. Support was provided by the Commonwealth Information Technology Initiative (CITI) to develop new courses. However, many of the courses that are proposed for inclusion in the curriculum have been offered for some time.

II. PURPOSE AND GOALS

The goal of the Minor is to enable any student to confidently employ information technology, and to secure an intellectual platform from which to develop the capacity to innovate, using information technology in his or her field.

III. CURRICULUM

The curriculum will provide students with technical and scholarly capabilities in programming, data analysis, research methods, media theory, and other fields. This generalist background will enhance disciplinary specialization by allowing students to apply skills and knowledge in a variety of academic areas.

Prerequisite

Before embarking on the courses required for the Minor, students will need knowledge of the concepts of computer information systems (emphasizing the key concept of information), and the rudiments of electronic technology to succeed in the required technical courses. Students who lack this background may satisfy this prerequisite by completion of one of the following courses: CMPSCI 102, Computer and Society; CMPSCI 105, Computer Literacy; RES EC 197A, Computing Foundations to Frontiers; SOM 210, Introduction to Business Information Systems. The level of knowledge provided by these courses will be required for success in the two technical courses which follow. Students who believe they have the requisite level of knowledge may petition the Minor coordinator for exemption from the prerequisite.

Requirements (minimum of 15 credits)

Technical courses (minimum of six credits): At least two courses, selected from two of the following three categories, are required to provide a durable, technical core on which to build the minor:

- A. *Principles of Object-Oriented Programming:* CMPSCI 121, Introduction to Problem-Solving with Computers (Java); ECE 122, Beginning Programming (C++); SOM 591I, Programming with Visual Basic [number and title may change].
- B. *Representing, Storing and Retrieving Information:* ACCTG 312, Systems Analysis and Design; CMPSCI 195, Representing, Storing & Retrieving Information; CMPSCI 187, Programming with Data Structures; ECE 242, Data Structures in Java
- C. *Introduction to Internet Technology, or Multi-Media Systems:* CMPSCI 120, Problem Solving with the Internet; ECE 197, Multimedia Systems

Broadened Inquiry (minimum of three credits): At least one course exploring social issues of technology, chosen from the following group:

- COMM 297T, Social Impact of Information Technology
- COMM 234, History of Electronic Media and Information Technology
- ENGL 391, Writing and Emerging Technologies
- ENGL/ECE 297B, Contemporary Internet Communications: Writing, Information Design, and Research on the Web
- JOURN 397, Media, Technology & Culture
- HRTA 394E, Contemporary Legal and Ethical Issues in Cyber Space
- RES EC 297, Economic Issues of Contemporary Information Technology

Departmental Electives (minimum of six credits): At least two courses from the following preliminary list. Others will be added upon approval (see Governance Review, below).

ART 271, Introduction to Computing in Fine Arts
ART 297H, Information Design
ART 372, Introduction to Computer-Aided Design in Arts
ART 374, Computer Animation I
ART 397, Computer Animation II
ART 397, Computer-Aided Graphic Design
BIOEPI 690F, Information Systems in Public Health
BIOL 572, Neurobiology
BIOL 597, Genomics and Bioinformatics
BIOL 597, Information Technology in Biology Education
BIOL 597, Sex Steroids/Advanced Physiology: Communicating Current Research in Endocrine Physiology
BMATWT 290A, Building Materials Computing and Telecommunications
CMPSCI 370, Image Processing
CMPSCI 391F, HTML for Poets
CMPSCI 551, 3-D Animation and Digital Editing
CMPSCI 552, Interactive Multimedia Production
COMLIT 236, Digital Culture
EDUC 390R, Finding, Using & Evaluating Information Electronically
FOMGT 304, Information Technology in Finance
FOREST 587, Introduction to Digital Remote Sensing
FOREST 592G, Geographic Information Systems
JOURN 391R, Travel Writing and Photojournalism
JOURN 392M, Wired Reporting
JOURN 392R, Future of On-Line Reporting
JOURN 393C, Computer-Assisted Reporting
JOURN 397P, Photojournalism
JOURN 397W, Introduction to Web Journalism
MKTG 491B, Direct Marketing
MKTG 491D, Internet Marketing
MIE 597O, Intelligent and Integrated Design Systems
MUSIC 585, Fundamentals of Electronic Music
MUSIC 586, MIDI Studio Techniques
NRC 290S, Introduction to Spatial Information Technologies
SOM 597G, Internet Business Design
W&FCON 577, Ecosystem Modeling and Simulation

Restrictions: At least two of the courses in the Minor must be taken outside the student's major department. Students should not count courses for both their major and the Minor.

Advising: Students contemplating the Minor are strongly urged to communicate with the Minor coordinator as early as possible. Access to courses may not be possible for all those interested.

Governance Review for changes to curriculum: The proposal and implementation of the Minor in Information Technology is being guided by the Information Technology Task Force's curriculum committee, which was appointed by the Provost. The curriculum committee for the Minor should have the same broad representation of schools/colleges as does the current Task Force curriculum committee, whose members are:

Glenn Caffery, Resource Economics
Seshu Desu (co-chair), Electrical and Computer Engineering
Graham Gal, Accounting & Information Systems
Copper Giloth, Art, and director, Academic Computing
Bill Israel, Journalism
David Mix-Barrington, Computer Science
Robbie Moll, Computer Science
Charles Moran, English
Charles Schweik, Political Science/Public Policy
Harlan Sturm (co-chair), Spanish & Portuguese, associate dean Humanities & Fine Arts

The Provost should make the initial appointments to the curriculum committee, with successor appointments made by deans from diverse schools/colleges to ensure continuing broad representation. The initial terms of appointment should be staggered to avoid wholesale changes in committee membership, with all appointments eventually reaching three years. The curriculum committee will select the faculty member who will serve as coordinator of the Minor (nominally the “department head or chair” in the context of curriculum change governance).

The curriculum committee may in the future propose changes to the Minor that will be reviewed as follows.

- A. Changes to the requirements outlined above (including the addition or substitution of courses that satisfy the technical course and broadened inquiry requirements) must be approved by the curriculum committees and deans of the College of Humanities & Fine Arts and the College of Natural Sciences & Mathematics, before being proposed to the Faculty Senate or the Provost’s Office through the procedures established by the campus governance.
- B. Courses may be added to the list of departmental electives upon approval of the curriculum committee and dean of the School or College offering the course.

IV. ANTICIPATED ENROLLMENT & RESOURCE IMPLICATIONS

The number of students to whom the Minor will be available will be limited to those who are able to enroll in and succeed in the technical courses. The Computer Science department and the Electrical & Computer Engineering department are prepared to make available enough capacity in those courses to “start small,” allowing about 50 students per year to complete the Minor, without additional resources. Access to seats in courses for the Minor will be determined by the Minor coordinator, based on criteria to be set as necessary by the curriculum committee, and concurred in by the collegiate deans.

The proposal for this Minor was developed through the IT Task Force, with course development supported by CITI. Implementation of the Minor by “starting small” is not dependent on additional funds. The courses required for the Minor are already offered; the broadened inquiry and departmental elective courses are already part of departmental curricula, or are planned to be part of departmental curricula.

The advising and coordination needs of about 50 students can be met by the IT curriculum committee and the Minor coordinator. Expanding access to the Minor to an extent that would require the hiring of additional support or instructional staff will be made possible only by developing additional funding sources.