

MEMORANDUM

To: Board of Regents

From: Board Office

Subject: Approval of a new Master of Science Program in Information Systems at Iowa State University

Date: March 12, 2001

Recommended Action:

Approve Iowa State University's proposal for a new Master of Science program in Information Systems.

Executive Summary:

Iowa State University requests approval of a new Master of Science program in Information Systems within the Department of Logistics, Operations, and Management Information Systems in the College of Business.

The primary objective of the Master of Science in Information Systems is to build on the strengths of an undergraduate Management Information Systems program. A major aspect of this objective is to provide students with an opportunity to increase their skills beyond those suited primarily for entry-level positions.

The proposed program is in response to a demand for skilled information systems graduates, due to the current and projected skill shortage in the state and across the world. The program is aimed at helping students to understand how firms can leverage the use of information technology (IT) in their business operations. It is focused on providing students with the practical skills that will be needed by employers and that can be applied directly to their jobs. The courses will be structured to teach the latest technologies in the marketplace. There will be an emphasis on experiential learning through internships between the first and second years of the program.

None of the Regent institutions currently offer a Master of Science in Information Systems, although the University of Iowa offers a Master of Arts in Business Administration that trains graduate students in information technology. It is anticipated that there will be a continued, significant demand for IT professionals and that both programs will be successful in recruiting students to meet the needs of industry in Iowa and elsewhere.

The Board Office and the ICEC have reviewed the University's responses to the Board of Regents program review questions and recommend approval. The University's responses to the Regent program review questions are attached (Attachment A).

The proposed program was reviewed and "accepted" by the Iowa Coordinating Council on Post High School Education at its meeting on March 7, 2001.


Diana Gonzalez

Approved: 
Frank J. Stork

**REGENTS PROGRAM REVIEW QUESTIONS
MASTER OF INFORMATION SYSTEMS**

1. Need

- a) **How will this proposed program further the education and curriculum needs of the students in this discipline?**

The proposed program will provide students with an opportunity to increase their skills beyond those suited primarily for entry-level positions in organizations. As such, the proposed program would award a professional degree that seeks to add value to students and employers beyond the bachelor's degree and would incorporate a recognized set of courses to assure competency in a number of fundamental skill areas.

- b) **How does it further the educational and curriculum needs of other units in the college or university?**

The proposed degree requires at least 8 credits of general business courses and 12 credits of electives that could be other business courses outside of information systems area. As a result, information systems students will have the opportunity to interact with non-IS graduate students. Such an interaction will enhance the educational experience of all the students involved. Consequently, these students will be better prepared for today's multi-disciplinary approach to solving business problems.

2. Other Programs

- a) **What programs in this field of study are available in other colleges and universities in Iowa?**

The University of Iowa has a Master of Arts in Business Administration that provides a graduate degree in Information Systems. The University of Northern Iowa (UNI) and Drake University do not offer an IS specialization in the MBA or an MS in Information Systems.

- b) **With what representatives of these programs have you consulted in developing this proposal? Provide a summary of the reactions of each institution consulted as well as the complete text of the responses.**

We sent the proposal to the University of Iowa, University of Northern Iowa, and received letters from Gary Fethke, Dean of the College of Business at the University of Iowa, Willis R. Greer, Dean of the College of Business at the University of Northern Iowa, and Steven Wartick, Head of the Management Department at the University of Northern Iowa. While these letters attest to the

need for and quality of the proposed program, they also question the ability of Iowa State University to offer this new program in the absence of additional resources. Perhaps, the confusion arose since the proposal did not clearly highlight the limited size of the program. This program is designed as a small program that takes advantage of current enrollment levels in our existing graduate programs. Using seating available in our existing MBA electives, we can offer this specialized masters degree to a limited number of students seeking information technology education beyond what our general graduate programs allow. The requirement for additional resources will be minimal since we do not plan to add any new sections specifically for this program.

c) In what ways is this proposed program similar to those mentioned in 2a? In what ways is it different or does it have a different emphasis?

None of the Regents universities has an MS program in Information Systems. The program that is closest is the Master of Arts in Business Administration from University of Iowa. Our program is a Master of Science program primarily focused on meeting the large demand for trained information technology professionals in the workplace. We are working with various software vendors to have the latest software available in our labs. We plan to emphasize practical skills in all our courses and strongly recommend our students to gain experiential learning through internships between the first and second year. The University of Iowa program is a 48 cr. program. Based on available information it seems more focused on mathematical aspects of IS. Also, one of the admission requirements is knowledge of structured and object oriented programming. Our program does not have this restriction. There are both similarities and differences in the course content of both the programs. We believe the students will go through different experiences in the two programs and will acquire slightly different skill sets. However, regardless of the differences, we believe the demand for IT professionals at the graduate level will greatly surpass the supply from the two universities.

d) How does the proposed program supplement the current programs available?

The proposed degree requires 8 credits of graduate business courses and 12 credits of approved electives, which could be other business courses. Many of the courses offered by this degree program are already offered as part of the MBA specialization in IS. As a result, it will offer significant opportunities for students to take graduate courses currently offered in the college.

e) Has the possibility of some kind of inter-institutional program or other cooperative effort been explored? What are the results of this study?

We are exploring the possibility of using some information systems related courses from others departments in the University. Further, we could consider in

future other courses, related to this area that are offered through ICN. Are present there are no courses.

- f) **List the Iowa institutions in which articulation agreements are being developed for the proposed program.**

None currently

- g) **Provide the Classification of Instructional Program (CIP) code for the proposed program.**

52.1201

3. **Please estimate the enrollment in this program (for the next five years) as follows:**

	2000/01	01/02	02/03	03/04	04/05
a. Undergraduate	NOT APPLICABLE				
b. Graduate Majors	15	15	20	20	20
Non-Majors*	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Totals	15	15	20	20	20

*There will be no nonmajors or minors associated with this program. MS-IS students will, however, be enrolled in courses with students from other programs, namely the MBA.

- a. **On what basis were these estimates made?**

The graduate student enrollment is based on estimates of similar programs in other universities of similar size. This is a very conservative estimate since there is a strong demand in the industry for graduates with IS background. Estimate reflect the number of students we expect to attract from working professionals, students from four-year colleges, as well as ISU students who might pursue graduate education in IS to enhance their careers. We expect to keep the enrollment at approximately 15-20 students to provide good education with reasonable class sizes. This enrollment limit also helps to ensure that our business core courses are not overloaded. We estimate that 50% of these students (about 7) will not have a business background and will be required to take the business core courses.

b. What are the anticipated sources of these students?

Students will matriculate from a variety of sources, but would include:

- New graduates with degrees in fields ranging from business, information systems, computer science, the humanities, social science, engineering, and physical science.
- Experienced IS professionals seeking to upgrade their skills and understand management issues.
- Professionals from a variety of fields seeking a career change.

The MBA program is primarily designed to provide a broad business background to individuals with limited technical proficiency. However, the Master of Science in Information Systems provides students with the opportunity to gain in-depth technical knowledge and proficiency in IS as practiced within business organizations. We also expect to attract international students who may find this program very relevant to start a career in IS.

4. Please provide any available data or information on employment opportunities available to graduates of this program in Iowa and nationally.

We believe the employers who recruit in our undergraduate MIS program will also recruit in our graduate program. Based on current placement of our MBA students and information from other universities we are **estimating** the placement in the different sectors.

1997-98 Bachelor of Science (MIS) Graduates		
Professional Career	Number	Percent
Big 5 accounting & other consulting firms	6	40%
Industry	6	40%
Graduate School	1	7%
International students returning home	2	13%
TOTAL	15	100.0%

City/Area	Number	Percent
Des Moines	3	20%
Cedar Rapids	2	13%
Other Iowa locations	2	13%
Chicago	3	20%
Minneapolis	2	13%
Other cities and states (graduate study)	1	7%
International students returning home	2	13%
TOTAL	15	100.0%

5. Are there accreditation standards for this program? If so, please provide a copy of the Accreditation standards.

International Association for Management Education (AACSB) is the accreditation organization and is the primary accrediting body for the graduate programs in business. However, they do not have special accreditation requirements for the MS program. A joint committee task force of the ACM (Association for Computing Machinery) and the AIS (Association for Information Systems) (two major professional societies in this field) developed a model curriculum for the MS program that has been endorsed by various professional institutions in academics and industry. This MS program is based on the guidelines provided in the model curriculum suggested by the task force.

a. What is the accreditation organization?

There is no specific accrediting body for this program, although as a program administered by the College of Business, it has been designed to meet the standards for specialized masters programs as specified by the International Association for Management Education (AACSB).

b. What accreditation timetable is acceptable?

Currently there is no accreditation organization for this program. This program has been developed based on the guidelines provided by a joint committee task force of the ACM (Association for Computing Machinery) and the AIS (Association for Information Systems), the two professional organizations in our field. As a business program, it will be part of the overall reaffirmation of the college during our next reaccreditation effort, which will occur in approximately 10 years (having been reaffirmed in April, 2000).

- 6. Does the proposed program meet minimal national standards for the program, e.g., Council of Graduate Schools or other such bodies.**

Not applicable.

- 7. Please report any reactions of the Iowa Coordinating Council for Post-High School Education.**

The proposal has not yet been submitted to the Council.

EXHIBIT A
COMPANIES RECRUITING MIS STUDENTS (1998-2000)

3M	Hewlett Packard
Alcoa	IBM
American Century Investments	Information Technology, Inc.
Andersen Consulting	KPMG Peat Marwick LLP
Arthur Andersen & Company	Kraft Foods
Bureau of the Census	Kimberly-Clark Corporation
Burlington Northern Santa Fe	Lands' End
Carlson Companies	MCI Worldcom
Cargill	Micron Technology
Caterpillar	Microsoft Corporation
Cerner	Norwest Bank Iowa, N.A.
Deere & Company	Payless Shoe Source
Deloitte & Touche LLP	Pella Corporation
Dell Corporation	Principal Financial Group
Dynegy Inc.	Procter & Gamble
Ecolab	Professional Computer Systems Company
Eli Lilly and Company	Quaker Oats Company
Engineering Animation, Inc.	Robert W. Baird & Company
Equitable Life of Iowa/Vision Financial Group	Software Architects
Equiva Services LLC	Sprint PCS
Ernst & Young	Sprint Technology Services
Farm Credit Services	State Farm Insurance
FDIC	Teradyne
Federal Express	Union Pacific Railroad
Federated Insurance	Vermeer Manufacturing Company
Fisher Controls International, Inc.	Wellmark Blue Cross/Blue Shield
General Mills, Inc.	Wells Fargo Home Equity Advantage
Hewett & Associates	Yellow Technologies