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# Master of Science in Information Systems Status Report of the Joint ACM/AIS task Force on Graduate IS Curriculum

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# **Master of Science in Information Systems Status Report of the Joint ACM/AIS task Force on Graduate IS Curriculum**

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## **Abstract**

*This paper presents the initial results of the work of the joint ACM/AIS Task Force on Graduate IS Curricula. This task force was appointed in January 1998 with the charge of recommending a curriculum guideline for MS programs in Information Systems.*

## **History**

At each of the three previous AIS national meetings, a session for faculty from MS programs in IS was held under the chairmanship of Paul Gray and John Gorgone. As a result of the first meeting, a study of existing programs was undertaken and the results presented at AIS '96 (Gorgone and Kanabar, 1996). In brief, the study found approximately 50 MS programs in the US, with half in Business Schools and half elsewhere in the university. The content and length of these programs varied widely. It was clear that the most recent graduate model curriculum, issued in 1982 (Nunamaker 1982), needed extensive revision.

While Curriculum '82 is still a useful course reference, course content has changed drastically. The external job market has changed and new technologies have appeared: World Wide Web, end-user, data warehouses, rapid application development, and more. New concepts have appeared or have become important: competitive and strategic use of IS, project management, change management and group work. More skills are needed in GUI and object-oriented design.

Based on these results, the joint committee of ACM and AIS was appointed. The members of the committee are:

John T. Gorgone, Co-chair, Bentley College  
Paul Gray, Co-chair, Claremont Graduate University  
David Feinstein, University of South Alabama  
George Kasper, Virginia Commonwealth University  
Jerry Luftman, Stevens Institute of Technology  
Ted Stohr, New York University  
Joe Valacich, Washington State University  
Dick Welke, Georgia State University  
Rolf Wigand, Syracuse University

The committee first held two interactive meetings over the Internet, using AIS's Virtual Meeting Center (VMC), run by M. Mandviwalla of Temple University. The first considered a "straw model" curriculum and the second focused on what the content of a graduate "IS core" should be. A meeting of the full committee at Bentley College followed these virtual meetings from June 18-20, 1998.

Before describing the results, it is important to point out that what follows is not a final model program. Rather it is designed to be discussed by the IS community and hopefully lead to consensus. The procedure being followed is similar to the procedure for the undergraduate program known as IS '97 (Davis et. al. 1997).

## **Agenda**

The following items were on the agenda at Bentley College:

1. Input skills and output characteristics of potential MS students
2. The philosophies and principles underlying the MS program
3. The program building blocks
4. The suggested program
5. Next steps.

## **Input Skills and Output Characteristics**

We anticipate that the MS program will attract students with a wide range of backgrounds. Those entering straight from undergraduate college may have a BS degree in IS, computer science, business, or some outside field. The graduate program will also draw individuals with experience including both IS professionals and those seeking career changes.

The output should create people with the following characteristics:

- Broad business and real world perspective
- Communication, interpersonal, and team skills
- Analytical and critical thinking skills
- Integration of IT and business foundations, a core of IS, and specific skills leading to a career.

### Underlying Principles and Philosophy

The following underlying principles and philosophy were developed:

- The MS is a professional degree that integrates *information* and organizational cultures.
- The degree adds value to students beyond the bachelor's degree and to the organization.
- The curriculum is flexible for students with differing backgrounds, skills, and career objectives.
- The degree includes a consistent IS core across institutions so that employers know students are learning a common set of fundamentals.
- The program focuses on current and emerging concepts.
- The program has the following themes running through it: ethics and professionalism; oral, written, and graphic presentation skills; promoting ideas and negotiating, people skills, business skills, real-world focus.

These general principles lead to the idea that programs should ensure that students have solid foundations in information systems and business. Furthermore, students should have a common body of knowledge (i.e., core) yet be sufficiently flexible to meet both institutional and student needs and objectives. From an operational point of view, flexibility implies that students may gain advanced standing credit and/or substitute other courses for material they already know, thus enabling them to take electives outside IS. Students should also have the opportunity to obtain practical experience through practicums in industry.

Advanced standing credit (ASC) can shorten a student's program to a minimum of 30 units. Undergraduate or graduate courses previously taken may be eligible for ASC (if equivalent), which may reduce the number of courses needed for completion of a program that is more than 30 units. ASC may be granted for any or all of the foundation and core courses. Students receiving ASC for courses in the IS Core may substitute elective courses, as necessary, for those IS Core courses that are waived in order to complete the necessary minimum 30 units.

### Proposed Degree Structure

The degree structure consists of the following elements:

IT Foundations	Minimum requirement of 3 courses, based on IS '97, taken as prerequisites by students who do not have an IS background: Fundamentals of IS, IT Hardware and Software, and Programming, Data and Object Structures, preferably at the graduate level. Not required of students with an IS degree.
Business Foundations	Minimum requirement of 3 courses: financial accounting, economics, and organizational behavior, preferably at the graduate level. Not required of students with a business degree.
IS Core	Five courses: database management; analysis, modeling, and design; data communications and networking; project and change management; IT policy and strategy. Required of all students
Integration	One of two courses that tie the Core together, either internal or external to the IS shop. A practicum may be substituted or the integration may be achieved in another way.
Career Track	3 or more related electives that prepare a student for an emerging specialization. Topic areas include knowledge management, electronic commerce, ERP, systems design. Specific tracks depend on a school's markets and faculty expertise.

A student entering with an undergraduate IS degree in a business school could complete the program with 10 courses (30 units) whereas a student with no experience and a non-technical degree would be required to take 17 courses (51 units). The core represents the fundamental knowledge all students know when they have completed an MS in IS.

### Next Steps

This draft proposal will be presented at a number of academic conferences and industry roundtables, as well as being posted at (<http://cis.bentley.edu/msis>). Feedback will be obtained and consolidated. A draft report will be prepared and posted to the web at the above URL. The objective is to submit report recommendations to ACM and AIS for approval in August 1999.

### References

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