



## **I. Objectives**

The objective of the MS in Business and Information Systems is to give graduates appropriate information systems, information technology and business knowledge to function effectively in using, designing, building, enhancing, and maintaining software systems and applications in the context of business environments. Thus, these graduates will not have to spend a substantial time on the job learning business topics.

Students with a strong knowledge of information systems (databases, application use and evaluation, management information systems, decision support systems, networks, etc.) and relevant business topics (e.g., accounting, finance, business operations, marketing, etc.) will be able to find well paying computing related jobs in the business world.

## **II. Need**

### **II. A. Need for the Program**

Technology and science are dramatically changing our economy and our society. This is creating new business opportunities and needs, with an increasing push for IT employees (in the generic sense as used in business to mean all facets of computing) to be more involved in designing and evaluating business information systems for both small companies as well as major corporations. Information systems employees must have a solid understanding of business fundamentals to succeed. The Business and Information Systems degree program will give its graduates enough breadth and depth in both business and computing sciences to be more effective much sooner after graduation without a long on-the-job learning curve as often encountered by new IT graduates in the business world.

Thus we want our Business and Information Systems students to have a strong knowledge of both information systems and business topics so that they are ready and prepared to be hired into or move into better paying and more skilled jobs than might be commanded by students with expertise only in information systems. Such jobs, demanding more skills, are less likely to be subject to outsourcing as compared to simple programming jobs.

This degree will enable the student to learn about both information systems and business. Moreover, through courses with strong project perspectives and synergism between these two topics, students will be able to integrate the knowledge from both business and information systems courses and be able to design meaningful applications and systems in the business environment.

## **II. B. Relationship to the Institute Master Plans**

Business management is one of the areas singled out for growth at NJIT. At the graduate level a degree in Business and Information Systems would educate students in both advanced information systems, technology and business topics. With all the businesses in the New Jersey area with large IT needs, the graduates would provide a trained workforce to the businesses.

## **II. C. Relationship to Similar Programs in the State and Region**

Stevens Institute of Technology has an MSIS program that has both an IT and business perspective. However, it does not have the strong combination of information systems and business core and electives that this NJIT program does. Pace University and Drexel have MSIS programs as well but again without the strong technological focus.

## **II. D. Distinguished Programs Nationally**

Many universities have information systems programs, which include some business knowledge. Similarly, many universities offer programs in "Management Information Systems," but these tend to emphasize business knowledge with a lesser focus on technical skills. The proposed program is fairly unusual in that the coverage of information systems and computing topics will be approximately the same depth as business and management courses, thus providing students with a solid, dual background in information systems and business. It would be our goal to strive to make our proposed degree program a distinguished model for others to follow and replicate.

## **III. Students**

With the proximity to New York City, the business capital of the world, we think that students from New Jersey and the surrounding areas will find the MS in Business and Information Systems to be very attractive. This program will also be attractive to professionals in IT who can join the program on a part-time basis.

Both domestic and international students are expected to apply. NJIT's traditional methods of student recruitment will be used. Moreover, the faculty and administrators involved in the program will work with NJIT's Office of Admissions to publicize the opportunities available to students interested in the confluence of information systems and business. We anticipate that we will attract 25 students in the first year. After 5 years, we foresee an entering class of about 40 first-year students.

## **IV. Resources to Support the Program**

### **IV.A. Course Development**

All of the courses applicable to the new degree are already offered in NJIT's Information Systems department, School of Management and the College of Science and Liberal Arts. Other elective courses will be developed as the program evolves. There are sufficient faculty members involved in business and information systems at NJIT to support this planned course development.

### **IV.B. Faculty**

There are a significant number of faculty members with credentials and research interests in business and information systems in the School of Management and in the departments of Computer Science, Information Systems and Mathematical Sciences.

### **IV.C. Libraries and Computing Facilities**

Since this program will draw upon many existing courses and upon the same supplemental literature that supports other related NJIT programs, library holdings are more than adequate to support the new program. NJIT's Van Houten Library has a collection of more than 130,000 books and subscribes to about 160 printed journals and about 15,000 electronic journals. The library purchases between 2,500 and 3,000 new books each year including a small but growing collection of electronic books. Requests for new books or journals are made through the academic department's faculty representative to the library.

The library's home page provides access to the library's online catalog and links to a wide array of information services. The library has an information commons with 120 networked PCs that provide access to a large number of electronic search tools and bibliographic and full-text sources. These include journal and conference literature in computer science, engineering, science, information systems and management, and other subject areas. All are available onsite and remotely with a current university UCID and password login. Among the 100+ databases available online are SCOPUS, IEEEEXplore, ACM Digital Library, Business Source Premier, Wilson Omnifile, the HSDL (Homeland Security Digital Library) and many more. The library also obtains books on loan and article photocopies for users through inter-library loan.

The libraries web site describes the services and resources more completely. Please see [www.library.njit.edu](http://www.library.njit.edu).

As a technological research university, NJIT has excellent computing systems, networks and software to support this program. The Newark campus' gigabit

Ethernet network backbone connects more than 6,000 nodes in classrooms, laboratories, residence halls, faculty and staff offices, the library, and student organization offices. Wireless access is available in over 90% of campus buildings and locations. The network provides access to a wealth of shared information services. Some of these include high-performance computing servers providing CPU cycles for simulation and computational research, disk arrays for storage of large data sets, communication servers for electronic mail and document exchange, databases, digital journal subscriptions and a virtual "Help Desk." A virtual private network combined with Internet access, plus a large ISDN modem bank extend access to campus information resources to faculty, staff and students working at home, work, any of the university's extension sites or throughout the world. Wide-area network access through NJEDge.Net, New Jersey's Higher Education Network, and through Internet2 provides collaboration opportunities with students, faculty, and researchers, locally, regionally, nationally, and throughout the world.

#### **IV.D. Classrooms and Laboratories**

There is a broad range of classrooms and laboratories available to offer the courses and projects in this program, including many with Internet access and multimedia facilities. Thus, no new classrooms or laboratories are specifically needed for the program.

## V. Curriculum

CCS and SOM, the two colleges offering the degree, will jointly administer the MS in Business and Information Systems degree. This degree does not require prior business or information systems/information technology knowledge.

### **MS in Business and Information Systems Curriculum (Total Credits Required 33 credits)**

#### **Core: 27 credits**

##### **Business Core**

Acct 615 – Management Accounting  
Fin 600 – Financial and Economic Environments  
HRM 601 – Organizational Behavior  
MIS 645 or IS 677 – Information Systems Principles

##### **Information Systems Core**

IS 631\* – Enterprise Database Management  
IS 663\* – Advanced System Analysis and Design  
IS 684 – Business Process Innovation  
IS 685\*\* – Enterprise Architecture and Development  
IS 678\*\*\* – Business Systems Management

\* *Students may apply for a waiver to substitute electives for these courses based on prior coursework or work experience.*

\*\* *Course to be proposed to Graduate Council in November 2007. It was previously taught as a special topics course.*

\*\*\* *Course to be proposed to Graduate Council in November 2007.*

#### **Electives: Choose 6 credits**

Students choose 2 electives from the following list, consistent with their career goals and in consultation with an advisor. Other courses may be considered in consultation with an advisor.

Mgmt 620 – Management of Technology  
Mgmt 635 – Data Mining and Analysis  
Mgmt 660 – Managing Supply and Value Chains  
IS 680 – Information Systems Auditing  
Math 644 – Regression Analysis Methods  
Math 661 – Applied Statistics