Prologue

The MIS curriculum needs to be brought up-to-date to reflect current technology trends and industry’s skill requirements of MIS graduates; and also towards AACSB accreditation. This proposal was developed on the basis that “if it is not broken, don’t fix it.” As a result change is minimized. This is a proposal based on current data from the Bureau of Labor Statistics (BLS), IS2002 and MSIS 2000 model curriculum recommendation, current demand for information security professionals, professional certifications in demand, and the availability of the resources of the School of Management, New York Institute of Technology. This proposal is divided into 5 main sections. Section 1 provides an overview of how the proposed curriculum is derived. Section 2 presents the proposed undergraduate curriculum. Section 3 presents the proposed graduate curriculum. Section 4 recommends the relevant certificate for professional certification that is viable. Section 5 is a discussion of a proposed School of Management Computer Laboratory which can also double as a classroom for technology based courses.

Scope of this proposal do not cover the business or the MBA core courses even though the proposed MIST215 and MIST601 courses are highly recommended to be in the respective core. The proposed MIS courses are mapped to the Common Body of Knowledge (CBOK) of the model curricula and the professional certification. The MIS program needs to find a niche to fully exploit its expertise and attract students. From recent studies and the unique resources of the School of Management and its faculty, it is proposed that focus be directed at information assurance/security, systems analysis and design and global (Internet-based) information technology management.

Student career track contracts are introduced with the intention that if advisors/schedulers know the courses that students are planning to take, a more definite and concrete class schedule can be planned each semester; this is in contrast to the current “try and see” method where class cancellation is common. When students choose career tracks they specialize in a set of skills that enable them to complete projects, for example, create an impressive website, create an impressive system design or use some state of the art computer tools. Students can showcase their projects during open houses for student recruitment and also aid retention of students. Students’ projects can even be entered for competitions; it is even possible to organize competitions in our niche areas.

Location of all source document are listed in the References section.
A Proposal to Update the Management Information System Curriculum
School of Management
New York Institute of Technology

January 2008

Dr Benjamin Khoo

Preamble

The mission of the Management Information System (MIS) program is to create, disseminate and apply knowledge of information system (IS) and the technology that drives IS. (The term Information Technology (IT) is often used to describe this technology.) To fulfill this mission, the program will:

1. Educate and train students with the required skills as professionals and prepare them for positions of leadership in industry;
2. Conduct and disseminate research in IS to improve the management and utilization of IS in organizations and to enhance IS pedagogy; and
3. Provide service that responds to the needs of New York Institute of Technology (NYIT), large and small businesses, governmental agencies, professional societies and other organizations that may benefit from the expertise of its faculty and students.

Introduction

The MIS curriculum needs to be brought up-to-date to reflect current technology trends and industry’s skill requirements of MIS graduates; and also to achieve AACSB accreditation. The Association for Information Systems over the past 2 decades has developed a model undergraduate and a model graduate curriculum based on technology trends and industry’s needs. The latest version of the model undergraduate curriculum is the IS2002 model curriculum. The latest version of the model graduate curriculum is the MSIS2000 model curriculum. The US Bureau of Labor Statistics has published data for the projected occupation needs of industry from 2006-2016. The occupation (job title) provides the information for the skills in demand. This is a proposal based on current data from the Bureau of Labor Statistics (BLS), IS2002 and MSIS 2000 model curriculum recommendation, current demand for information security professionals, professional certification in demand, and the availability of the resources of the School of Management, New York Institute of Technology. This proposal is divided into 5 main sections. Section 1 provides an overview of how the proposed curriculum is derived. Section 2 presents the proposed undergraduate curriculum. Section 3 presents the proposed graduate curriculum. Section 4 recommends the relevant certificate (for professional certification) that is viable. Section 5 is a discussion of a proposed School of Management Computer Laboratory which can double as a classroom for technology based courses.

Section 1: Overview

There has been a consistent trend of increasing demand for IT professionals.¹ The “Numeric change in total employment, 2006-2016” projection data from BLS shows annual job openings from 9,000 (Computer and Information Systems Managers), 9,000 (Programmers), 24,000 (Computer Support Specialists), 28,000 (Computer Systems Analysts) to 30,000 (Computer Software Applications Engineer). The “Fastest growing occupations, 2006-2016” projection data shows number of job increases from 34,000 (Database Administrators), 140,000 (Network Systems and Data Communications Analysts), 146,000 (Computer Systems Analysts), to 226,000 (Computer Software Applications Engineer). Data is extracted from the BLS website at http://data.bls.gov The demand for IT professionals has also resulted in significant salary increases.

¹ The term “IT Professionals” is used synonymously with “IS professionals.” There is very little difference in training and job skills between them.
A recent paper (Luftman & Kempaiah, 2007) stated that between 2006 and 2012, 1 out of every 4 new jobs will be IT related. Also, as the baby boomers of the dot-com boom retire over the next 5 years, the shortage of IT professionals is expected to increase. A 2006 Society of Information Management (SIM) survey (Luftman, 2006) shows the top 10 skills employers are looking for when hiring entry-level employees (See Table 1) and the top 10 skills employers are looking for when hiring mid-level employees (See Table 2).

1. Communication  
2. Functional Area Knowledge  
3. System Analysis  
4. User Relationship Management  
5. Systems Design  
6. IT Architecture/Standards  
7. Managing Expectations  
8. Industry Knowledge  
10. Project Plan/Budget/Schedule

Table 1. Top 10 skills employers are looking for when hiring entry-level employees

1. Communication  
2. Project Leadership  
3. Functional Area Knowledge  
4. Business Process Design/Reengineering*  
5. Managing Expectations*  
6. Change Management*  
7. Systems Analysis*  
8. IT Architecture/Standards  
9. User Relationship Management  
10. Project Integration/Program Management  
* Ties

Table 2. Top 10 skills employers are looking for when hiring mid-level employees

As a result, the MIS curriculum should be developed to meet the demands of industry based on the job title (and its description) in the employment statistics and on the top skills that are in demand by employers. For purposes of discussion, entry-level employees can often be referred as a Bachelor of Science in Business Administration (MIS) graduate while mid-level employees can often be referred as a Masters of Business Administration (MBA) graduate. Note that there are similarities in the 2 tables; even though the ordering of the skills is different which is expected as mid-level employees assume greater responsibilities in an organization. The skills requirement has been updated into the IS2002 and MSIS2000 model curriculum.

Part of the foreword to the IS2002 model undergraduate curriculum states:

Students from IS programs accept jobs in widely dispersed geographic areas. Therefore, the availability of curriculum models enables local academic units to maintain academic programs that are consistent both with regional and national employment needs and with the common body of knowledge of the IS field. …

Professional society curriculum reports serve several other objectives. One important use is to provide a local academic unit with rationale to obtain proper resources to support its program. Often, the administration at a local institution is not aware of the resources, course offerings, computing hardware, software, and laboratory resources needed for a viable program. The administration may be unaware of the specialized classroom technology, library resources, or
laboratory assistants essential for proper education of IS undergraduates. Finally, the administration might not recognize the rapid turnover of knowledge in the field and the need for resources to support constant retooling of faculty. Curriculum reports provide recommendations in these resource areas as well as recommended content for the body of knowledge to be taught.

The IS2002 model undergraduate curriculum contains a Common Body of Knowledge (CBOK) that includes 10 courses (IS2002 page 18). See Table 3 below.

<table>
<thead>
<tr>
<th>Student Groups</th>
<th>Curriculum Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Students</td>
<td>IS 2002.P0 Personal Productivity with IS Technology</td>
</tr>
<tr>
<td></td>
<td>IS 2002.1 Fundamentals of Information Systems</td>
</tr>
<tr>
<td>IS Majors and Minors</td>
<td>IS 2002.2 Electronic Business Strategy, Architecture and Design</td>
</tr>
<tr>
<td></td>
<td>IS 2002.4 Information Technology Hardware and Software</td>
</tr>
<tr>
<td></td>
<td>IS 2002.5 Programming, Data, File and Object Structures</td>
</tr>
<tr>
<td></td>
<td>IS 2002.7 Analysis and Logical Design</td>
</tr>
<tr>
<td>IS Majors</td>
<td>IS 2002.3 Information Systems Theory and Practice</td>
</tr>
<tr>
<td></td>
<td>IS 2002.6 Networks and Telecommunication</td>
</tr>
<tr>
<td></td>
<td>IS 2002.8 Physical Design and Implementation with a DBMS</td>
</tr>
<tr>
<td></td>
<td>IS 2002.9 Physical Design and Implementation in Emerging Environments</td>
</tr>
<tr>
<td></td>
<td>IS 2002.10 Project Management and Practice</td>
</tr>
</tbody>
</table>

Table 3. Representative IS2002 Curriculum Design for All Students, IS Minors, and IS Majors

The recommended course sequence (IS2002, page 17) is shown as Figure 1 below.

![Figure 1. IS2002 Representative Course Sequence.](image-url)
The category “All Students” in Table 3 refers to IS2002.P0 and IS2002.1 as recommended MIS general elective courses for a university undergraduate. The other 8 IS2002 courses in Table 3 are recommended for MIS undergraduate minors and majors. The recommended course sequence in Figure 1 is also used in the proposed sequence of MIS undergraduate courses. For specific mapping of the IS2002 courses to NYIT MIS courses, see Section 2. Detailed specifications can be found from the IS2002 document listed in the Reference section.

Since the 9/11 attacks on US soil, there have been a tremendous amount of effort spent on improving and strengthening the infrastructure of the US. A principal component of the infrastructure is the telecommunication or information infrastructure. Each day millions of dollars of business transactions and many communication channels are conducted through the telecommunication/information infrastructure via the Internet. Organizations of all types (business, academia, government, etc.) are facing risks resulting from their ever-increasing reliance on the information infrastructure. Business, government, and non-profit institutions have expressed difficulty finding personnel with appropriate training in cyber security tools. Such training requires hands-on experience with secure systems work, yet many institutions of higher learning lack the resources to provide that experience. As a consequence of this, the proposed MIS undergraduate curriculum will have a new course – MIST325 Information Security. In addition, a module of security concepts is recommended to be integrated into other courses like MIST215 Information Systems Concepts, and MIST315 Application Program Development I. For more complete details of the proposed undergraduate curriculum, see Section 2.

The proposed graduate MIS curriculum will adapt from the CBOK from the MSIS2000 model graduate curriculum which was developed over 2 decades based on the skills demand in industry. Detailed specifications can be found from the MSIS2000 document listed in the Reference section. See Figure 2 below.

FOUNDATION
IS Foundations (Technical Prerequisites)
- IS’97.1 – Fundamentals of Information Systems
- IS’97.4 – Information Technology Hardware and Software
- IS’97.5 – Programming, Data and Object Structures

Business Foundations (Business Prerequisites)
- Financial Accounting
- Organizational Behavior
- Marketing

IS CORE
- MSIS2000.1 – Data Management
- MSIS2000.2 – Analysis, Modeling and Design
- MSIS2000.3 – Data Communications and Networking
- MSIS2000.4 – Project and Change Management
- MSIS2000.5 – IS Policy and Strategy
- MSIS2000.6 – Integration. One of the following:
  - MSIS2000.6.1 – Integrating the Enterprise
  - MSIS2000.6.2 – Integrating the IS Function
  - MSIS2000.6.3 – Integrating IS Technologies
  - MSIS2000.6.4 – Integrating the Enterprise, IS Function and IS Technologies

CAREER ELECTIVES
Four career-oriented courses — may include a practicum. See Table 3 (page 13) for representative lists.

Figure 2. Summary of Curriculum Course Requirements
As the MSIS2000 model graduate curriculum is for a Masters of Science in Information Systems (MSIS) program, the proposed graduate MIS curriculum will adopt only the main IS Foundations and Core areas. The IS Foundations and Core areas from the MSIS2000 model graduate curriculum are as follows:

<table>
<thead>
<tr>
<th>MSIS2000 IS Foundations</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>IS’97.1 – Fundamentals of Information Systems</td>
<td></td>
</tr>
<tr>
<td>IS’97.4 – Information Technology Hardware and Software</td>
<td></td>
</tr>
<tr>
<td>IS’97.5 – Programming, Data and Object Structures</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MSIS2000 IS Core</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MSIS2000.1 – Data Management</td>
<td></td>
</tr>
<tr>
<td>MSIS2000.2 – Analysis, Modeling and Design</td>
<td></td>
</tr>
<tr>
<td>MSIS2000.3 – Data Communications &amp; Networking</td>
<td></td>
</tr>
<tr>
<td>MSIS2000.4 – Project and Change Management</td>
<td></td>
</tr>
<tr>
<td>MSIS2000.5 – IS Policy and Strategy</td>
<td></td>
</tr>
<tr>
<td>MSIS2000.6 – IS Integration</td>
<td></td>
</tr>
</tbody>
</table>

Table 4. MSIS2000 IS Foundations and Core Areas

The proposed MIS courses are mapped to the IS Foundations and Core areas of the MSIS2000 model graduate curriculum (see Table 7). Also, as a result of the current demand for IS security skills, the proposed MIS graduate curriculum will rejuvenate and update the course – MIST730 Audit and Control of Computer-based Systems. In addition, a module of security concepts is recommended to be integrated into other courses like MIST595 Information Systems for Management, and MIST750 Data Communications and Networks.

New York city is a metropolitan and global city. The School of Management has a global campus; this offers the school and the MIS program in particular, a unique opportunity to leverage this advantage. It is therefore proposed that a new course MIST735 Global IT Management be created utilizing the available unique resources of a global campus.

It is significant to note that in the MBA core (level II courses), there is not a single MIS course. It is proposed that a lower level course “MIST601 Research Methods in Information Systems” replace the current upper level “MIST705 Information Resource Management” course. It is highly recommended that the MIS course - MIST601 be included in the MBA core which will strengthen and provide a better balance to the overall MBA core courses in view of the impending AACSB accreditation evaluation exercises. For more complete details of the proposed graduate curriculum, see Section 3.

From (Luftman, 2006), skills in high demand include Systems Analysis and Design (encompassing business process reengineering, project management, system implementation/programming) and security (based on the emphasis by the US government). Employers are increasingly demanding that potential and existing employees be professionally qualified in the skills required. Professional certifications are available for each of these skills. Each certification have a CBOK. Professional certifications are earned from a professional society and, generally, need to be renewed periodically, or may be valid for a specific period of time. A professional body or professional organization, also known as a professional association or professional society, is an organization, usually non-profit, that exists to further a particular profession, to protect both the public interest and the interests of professionals (from http://en.wikipedia.org/wiki/Professional_society). As a part of a complete renewal of an individual's certification, it is common for the individual to show evidence of continual learning - often termed continuing education or earning continuing education units (CEU)(from http://en.wikipedia.org/wiki/Professional_certification). As a result of the existing and continuing demand for professional certification, it is recommended that proposed courses in the MIS curriculum cover part or if possible, the whole of the CBOK. The School of Management through the MIS program can also work towards being an academic partner for some of these professional certification, for example, IBM
(Systems Analysis & Design certification), Sun Micro System (Java certification), ISACA (Information Systems Audit and Control Association for information security certification), IIBA (International Institute of Business Analysis for Systems Analysis & Design certification) or Microsoft (Microsoft Computer Professional certification). Typically, each certification requires a few courses to adequately cover its CBOK. The MIS program should also create “crash courses” or “boot-camp” type certification classes. The classes can be offered as compressed certificate programs. Typically 4 or 5 classes are required for each certificate. The duration for each class will be 4-5 full days. These classes can be offered through one of the centers of excellence that the new dean is planning to start. Faculty will be able to teach these classes without much additional preparation as the class content matches closely to the regular course offered. The classes do not have to be taken immediately one after the other. They can be scheduled. For more complete details of the proposed certification curriculum, see Section 4.

As a technology based university, NYIT is placed to provide the skills training that industry (or employers in industry) needs. As a School of Management in a technology based university, it is important that the MIS program in particular, and the business program in general, provide the facility and computing resources for students to be trained in the latest technology. It is important that a computer laboratory/classroom be set-up, if possible, a lab for the Manhattan and another lab for the Old Westbury campus. The facility should be provided by NYIT while the funding can be solicited from donors or from government or private grants. It can be managed by a MIS faculty/staff under the jurisdiction of the School of Management administration. The availability of the lab will also enhance the scheduling of technology based business courses. For more complete details of the proposed computer laboratory/classroom, see Section 5.
Section 2: Proposed Undergraduate Curriculum

This section will present the original MIS option curriculum from the Undergraduate Catalog 2007-2008, propose the update to the MIS curriculum by updating some existing courses and proposing some new courses. Updates can just be a change in the course title, description or prerequisites. New courses are courses with new content and it can use an existing course number or new course number; in 1 instance MIST320 and MIST330 courses are swapped. This is done as recommended in the course sequence of Figure 1. A table of the comparison of the original MIS courses versus the proposed courses is presented next; followed by the proposed course sequence and requirement for the MIS option. Also included is an Expanded Course Outline for MIST 215 which is the main MIS option prerequisite (it maps to IS2002.1) and a sample Track Contract. The Track Contract list the courses a student will take and tracks the student progress through the program -- this facilitates course scheduling.

Curriculum requirements for the Bachelor of Science in Business Administration — MIS Option

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>College Success Seminar</td>
<td>2</td>
</tr>
<tr>
<td><strong>Business Core Courses</strong></td>
<td></td>
</tr>
<tr>
<td>ACCT 101 Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 105 Accounting II or</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 110 Managerial Accounting</td>
<td></td>
</tr>
<tr>
<td>MATH 151 Fundamentals of Calculus</td>
<td>3</td>
</tr>
<tr>
<td>ECON 110 Principles of Economics II</td>
<td>3</td>
</tr>
<tr>
<td>ECON 201 Money and Banking</td>
<td>3</td>
</tr>
<tr>
<td>LLAW 101 Business Law I</td>
<td>3</td>
</tr>
<tr>
<td>FINC 201 Corporation Finance</td>
<td>3</td>
</tr>
<tr>
<td>QANT 301 Statistical Sampling Theory</td>
<td>3</td>
</tr>
<tr>
<td>QANT 305 Quantitative Applications to Making Managerial Decisions</td>
<td>3</td>
</tr>
<tr>
<td>MGMT201 Business Organization and Administration</td>
<td>3</td>
</tr>
<tr>
<td>MGMT405 Business Policy Seminar</td>
<td>3</td>
</tr>
<tr>
<td>MRKT 101 Introduction to Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MIST 101 Introduction to Computer Applications</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Business Core Courses</strong></td>
<td><strong>39</strong></td>
</tr>
</tbody>
</table>

13 courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIST 215 Application Program Development I</td>
<td>3</td>
</tr>
<tr>
<td>MIST 305 Database Program Development</td>
<td>3</td>
</tr>
<tr>
<td>MIST 320 Managing Data Communications and Networks</td>
<td>3</td>
</tr>
<tr>
<td>MIST 325 Structured Systems Analysis and Design</td>
<td>3</td>
</tr>
<tr>
<td>MIST 401 MIS Seminar</td>
<td>3</td>
</tr>
<tr>
<td>MIST 430 Information Resource Management</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Required Option Courses (6 courses)</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

*Business Electives (2 courses) | 6 |
*Free Electives (3 courses)    | 9 |

*May use 12 credits of Free or Business Electives to obtain a Minor in a second option.
Original Course Description

MIST 101
Introduction to Computer Applications
3-1-3
This course provides an introduction to computer applications information systems. Topics include hardware and software, networks, the Internet, information systems and productivity tools used in business including word processing, spreadsheet, database, and presentation programs. Other applications may be discussed depending on the background of the students while projects requiring database and spreadsheet applications may be required.

MIST 215
Application Program Development I
3-0-3
Introductory problem solving and programming, to develop deterministic business systems. Development activities may include business applications such as accounts payable, order entry or the use of professional support applications such as spreadsheet, database file management, and graphic functions. Prerequisites: MIST 101 and MATH 125.

MIST 220
Application Program Development II
3-0-3
This course teaches advanced techniques of problem solving and programming using various generation languages to develop semi-structured or probabilistic business systems. Development activities emphasize the user approach and may include the use of professional support applications such as integrated software packages or generators. Prerequisite: MIST 215.

MIST 303
Introduction to Data Structures
3-0-3
This course teaches fundamental dynamic data structures, including linear lists, queues, trees, linked lists, multiple linked lists and graphs/heteroachies, including but not restricted to array strings and hash tables. Storage management, along with some elementary principles of software engineering will be the covered. Prerequisite: MIST 220.

MIST 305
Data Base Program Analysis [sic]
3-0-3
Survey of the techniques and methodology used in data base design, development and management. Analysis of the software design and programming in a relational and object-oriented data base environment. Prerequisite: MIST 101.

MIST 307
Database Management Systems Applications
3-0-3
This course presents a hands-on introduction to database management systems using core components of state-of-the-art DBMS software. Topics include Oracle database architecture, Enterprise Manager, SQL, Precompilers, Assistants, and WebDB. Coverage is consistent with the current certification standards for Database Administrators. Prerequisite: MIST 305

MIST 310
Introduction to Decision Support
and Expert Systems
3-0-3
Analysis of the human-machine interplay which utilizes decision rules, decision-models, databases, and the decision maker’s own insights to aid the manager in the decision making process. General topics covered are: Theories of organization, decision theories, quantitative methods, information systems, and DSS software and hardware. Prerequisite: MIST 305.

MIST 320
Managing Data Communications
and Networks
3-0-3
Advanced topics in network applications. Analysis of data transmission, system configuration, policies and procedures, and security of network systems. Modern network requirements, analysis and design are covered focusing on customer centric networking solutions supporting the management information system of the business enterprise. Prerequisites: MIST 101.

MIST 323
Networks Systems Planning and Operations
3-0-3
This course focuses on the advanced techniques for network planning, design and implementation to support the business processes of organizations in the 21st century. Coverage includes requirement for guaranteed performances network security and privacy mechanisms, quality of service and priority of services.
MIST 325  
**Structured Systems Analysis and Design**  
3-0-3  
This course involves use of the systems approach to analysis and design of various information systems, including, but not limited to database systems, networking systems, programming systems, accounting information systems, and decision support systems. Structured, as well as object-oriented methods of system design are treated. **Prerequisite:** MIST 101.

MIST 330  
**Software and Hardware Survey**  
3-0-3  
An introduction to middleware encompassing Operating Systems and compilers Operating systems such as Unix, Windows, and Linux are introduced and compared. Other topics include network security, and the relationships between hardware architecture systems software and application software. **Prerequisite:** MIST 305 and MIST 320.

MIST 401  
**Seminar**  
3-0-3  
Crucial study of information systems related to advanced topics such as IS in the manufacturing environment, IS in the legal environment, IS in the finance environment and, IS in the health service environment. A comprehensive MIS research project is a major deliverable of this course. Specific topics will be determined by interest of both the students and the instructor. **Prerequisites:** Approval of the Undergraduate Director, MIST 215, MIST 305 and MIST 325.

MIST 405  
**Distributed Data Processing**  
3-0-3  
All introduction to the features of data communication systems and microelectronics and their impact in the business enterprise. Topics include microprocessors, microcomputers, minicomputers, interfacing file security, equipment configurations, and required organizational structure. **Prerequisite:** MIST 305.

MIST 410  
**Introduction to Systems Simulations and Modeling**  
3-0-3  
The role of simulations and modeling in decision support systems and computer based information systems. Examination of features, kinds, uses, construction and simulation of models in the decision making process. Various quantitative methods and simulation languages are covered. **Prerequisites:** QANT 305, MIST 215.

MIST 420  
**EDP Audit and Control**  
3-0-3  
An introduction to EDP auditing with emphasis on audit of efficiency, audit of effectiveness and audit of control security. Other topics include audit techniques and their effect on information system development. **Prerequisite:** MIST 310.

MIST 425  
**Computer Security**  
3-0-3  
This course introduces fundamentals of computer and network security and its implementation in the corporate information system infrastructure. Emphasis will be put on the creation of security plans, architectures, and measures as they apply to protecting information from unauthorized access and illicit use, accident, disasters or intentional theft. **Prerequisite:** MIST 320.

MIST 427  
**Internet Applications Programming**  
3-0-3  
This course covers the different current Web programming languages, tools and techniques used to develop professional web sites. Client-side and Server-side web programming are introduced. Web authoring is reviewed. **Prerequisite:** MIST 215.

MIST 430  
**Information Resource Management**  
3-0-3  
This course examines management of information systems including how to acquire, organize, monitor and control computer resources with emphasis on management problems unique to computer based information systems environments. **Prerequisites:** MIST 215.

MIST 435  
**Information Systems Planning**  
3-0-3  
An introduction to the planning process with emphasis on financial, technical, and strategic aspects of information guidelines, priority settings, resistance to change, and preparation for implementation. **Prerequisite:** MIST 325.
MIST 450
E-Commerce
3-0-3
This course involves study of Internet technology and applications of e-commerce in various areas of management and its global use in commerce and industry. Application of e-commerce to various areas within management is discussed. **Prerequisite:** MIST 101.

The proposed MIS courses are adapted to fit the unique context of NYIT and based on the recommended courses in the IS2002 model curriculum. The course description follows after Table 5.

A Comparison of the Original MIS Undergraduate Courses Versus the Proposed Courses

<table>
<thead>
<tr>
<th>Original Courses</th>
<th>Cr.</th>
<th>Proposed Courses</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 MIST 101 Introduction to Computer Applications</td>
<td>3</td>
<td>MIST 101 Introduction to Computer Applications</td>
<td>3</td>
</tr>
<tr>
<td>2 MIST 215 Application Program Development I</td>
<td>3</td>
<td>MIST 215 Information System Concepts</td>
<td>3</td>
</tr>
<tr>
<td>3 MIST 220 Application Program Development II</td>
<td>3</td>
<td>MIST 305 Database Application Development</td>
<td>3</td>
</tr>
<tr>
<td>4 MIST 303 Introduction to Data Structures</td>
<td>3</td>
<td>MIST 307 Interactive Website Development</td>
<td>3</td>
</tr>
<tr>
<td>5 MIST 305 Database Program Development</td>
<td>3</td>
<td>MIST 310 Introduction to Decision Support and Expert Systems</td>
<td>3</td>
</tr>
<tr>
<td>6 MIST 307 Database Management System Application</td>
<td>3</td>
<td>MIST 315 Application Program Development I *</td>
<td>3</td>
</tr>
<tr>
<td>7 MIST 310 Introduction to Decision Support and Expert Systems</td>
<td>3</td>
<td>MIST 320 Software and Hardware Concepts for Management * +</td>
<td>3</td>
</tr>
<tr>
<td>8 MIST 320 Managing Data Communications and Networks</td>
<td>3</td>
<td>MIST 323 Systems Analysis and Design *</td>
<td>3</td>
</tr>
<tr>
<td>9 MIST 323 Network Systems Planning and Operations</td>
<td>3</td>
<td>MIST 325 Information Security</td>
<td>3</td>
</tr>
<tr>
<td>10 MIST 325 Structured Systems Analysis and Design</td>
<td>3</td>
<td>MIST 330 Managing Data Communications and Networks +</td>
<td>3</td>
</tr>
<tr>
<td>11 MIST 330 Software and Hardware Survey</td>
<td>3</td>
<td>MIST 401 MIS Seminar</td>
<td>3</td>
</tr>
<tr>
<td>12 MIST 401 MIS Seminar</td>
<td>3</td>
<td>MIST 403 IT Project Management</td>
<td>3</td>
</tr>
<tr>
<td>13 MIST 405 Distributed Data Processing</td>
<td>3</td>
<td>MIST 410 Introduction to Systems Simulations and Modeling</td>
<td>3</td>
</tr>
<tr>
<td>14 MIST 410 Introduction to Systems Simulations and Modeling</td>
<td>3</td>
<td>MIST 415 Application Program Development II *</td>
<td>3</td>
</tr>
<tr>
<td>15 MIST 420 EDP Audit and Control</td>
<td>3</td>
<td>MIST 425 Computer Security</td>
<td>3</td>
</tr>
<tr>
<td>16 MIST 425 Computer Security</td>
<td>3</td>
<td>MIST 427 Internet Application Programming</td>
<td>3</td>
</tr>
<tr>
<td>17 MIST 427 Internet Application Programming</td>
<td>3</td>
<td>MIST 430 Information Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>18 MIST 430 Information Resource Management</td>
<td>3</td>
<td>MIST 435 Human Factors in Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>19 MIST 435 Information Systems Planning</td>
<td>3</td>
<td>MIST 450 E-Commerce</td>
<td>3</td>
</tr>
<tr>
<td>20 MIST 450 E-Commerce</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5. Comparison of the Original MIS Courses Versus the Proposed Courses

Note:
1. Proposed course descriptions that are bolded indicate new courses.
2. Proposed course descriptions with an * indicate an update of the original course.
3. Proposed course descriptions with a + indicate a swap from original course numbers.
4. “MIST 305 Database Program Development” changed to “MIST 305 Database Application Development” to reflect the course content more accurately.
New Course Description

MIST 215
Information System Concepts
3-0-3
Examines use of information technology to meet management challenges within the business environment. Discuss and promote an understanding of the alignment of information systems with business and an appreciation for the relationship between systems and organizational processes. Prerequisite: MIST 101

MIST 307
Interactive Website Development
3-0-3
Design and development of business applications to use information on organizational intranets and the Internet. Event-driven programming to control external database/spreadsheet objects from the web. Design considerations for interactive user interfaces. Principles governing critical analysis of web-based content and graphical design. Prerequisites: MIST 215

MIST 315
Application Program Development I
3-0-3
Introduction to computer programming of business information systems. Object concepts, programming, the Java language, and an integrated development environment. Business application projects. Prerequisites: MIST 215 and MATH 125.

MIST 320
Software and Hardware Concept for Management
3-0-3
A survey of technical topics related to computer systems with emphasis on the relationships between hardware architecture, system software, and applications software. The architecture of processors and storage systems are explored and the implications for systems software design are covered along with the impact of hardware and system software design on the development of application programs in a business environment. Prerequisite: MIST 215.

MIST 323
Systems Analysis and Design
3-0-3
This course involves use of the systems approach to analysis and design of various information systems, including, but not limited to database systems, networking systems, programming systems, accounting information systems, and decision support systems. Object-oriented methods of system design are treated. Prerequisite: MIST 215.

MIST 325
Information Security
3-0-3
This course attempts to organize and review the many issues managers will be faced with when considering information systems security. The course is designed to expose each student to a detailed analysis of the role of security in information systems. A managerial and technical view of security will be presented with several news/case studies and hands on labs. Prerequisite: MIST 215.

MIST 403
IT Project Management
3-0-3
Introduces students to formal project management methods, tools and processes, including scope, quality, scheduling, cost estimation, communication, risk and change management. Follows the Project Management Body of Knowledge. Although case examples focus on information systems, it can apply to any major. Includes teamwork, guest lectures from industry project leaders and software applications. Prerequisites: MIST 215 & MIST 323.

MIST 415
Application Program Development II
3-0-3
MIST 435
Human Factors in Information Systems
3-0-3

This course provides a survey of human factors and human-centered computing relevant to the design and use of information systems. It describes the contributions of information systems, computer science, psychology, sociology, and engineering to human-centered computing. Emphasis is placed on human factors theories, human information processing concepts, interaction design approaches, and usability evaluation methods. Prerequisite: MIST 215

Updated Course Description

MIST 101
Introduction to Computer Applications
3-1-3

This course provides an introduction to computer applications information systems. Topics include hardware and software, networks, the Internet, information systems and productivity tools used in business including word processing, spreadsheet, database, and presentation programs. Other applications may be discussed depending on the background of the students while projects requiring database and spreadsheet applications may be required.

MIST 305
Data Base Application Development
3-0-3

Survey of the techniques and methodology used in data base design, development and management. Analysis of the software design and programming in a relational and object-oriented data base environment. Prerequisites: MIST 215

MIST 310
Introduction to Decision Support
and Expert Systems
3-0-3

Analysis of the human-machine interplay which utilizes decision rules, decision-models, databases, and the decision maker’s own insights to aid the manager in the decision making process. General topics covered are: Theories of organization, decision theories, quantitative methods, information systems, and DSS software and hardware. Prerequisite: MIST 215

MIST 330
Managing Data Communications
and Networks
3-0-3

Advanced topics in network applications. Analysis of data transmission, system configuration, policies and procedures, and security of network systems. Modern network requirements, analysis and design are covered focusing on customer centric networking solutions supporting the management information system of the business enterprise. Prerequisites: MIST 215 and MIST 320.

MIST 401
Seminar
3-0-3

Crucial study of information systems related to advanced topics such as IS in the manufacturing environment, IS in the legal environment, IS in the finance environment and, IS in the health service environment. A comprehensive MIS research project is a major deliverable of this course. Specific topics will be determined by interest of both the students and the instructor. Prerequisites: Approval of the Undergraduate Director, MIST 215, MIST 305 and MIST 323.

MIST 410
Introduction to Systems Simulations and Modeling
3-0-3

The role of simulations and modeling in decision support systems and computer based information systems. Examination of features, kinds, uses, construction and simulation of models in the decision making process. Various quantitative methods and simulation languages are covered. Prerequisites: QANT 305, MIST 215.

MIST 425
Computer Security
3-0-3

This course introduces fundamentals of computer and network security and its implementation in the corporate information system infrastructure. Emphasis will be put on the creation of security plans, architectures, and measures as they apply to protecting information from unauthorized access and illicit use, accident, disasters or intentional theft. Prerequisite: MIST 215 & MIST 320.
MIST 427
Internet Applications Programming
3-0-3
This course covers the different current Web programming languages, tools and techniques used to develop professional web sites. Client-side and Server-side web programming are introduced. Web authoring is reviewed. **Prerequisite:** MIST 215 & MIST 307

MIST 430
Information Resource Management
3-0-3
This course examines management of information systems including how to acquire, organize, monitor and control computer resources with emphasis on management problems unique to computer based information systems environments. **Prerequisite:** MIST 215.

MIST 450
E-Commerce
3-0-3
This course involves study of Internet technology and applications of e-commerce in various areas of management and its global use in commerce and industry. Application of ecommerce to various areas within management is discussed. **Prerequisite:** MIST 215.
The following proposed MIS course sequence is an adaption to fit the unique context of NYIT and is a direct mapping of the recommended IS2002 course sequence.

Proposed MIS Option Course Sequence

From the CBOK recommended in the IS2002 model curriculum (as illustrated in Table 3), the following are the proposed courses for the MIS option.

<table>
<thead>
<tr>
<th>Proposed Courses Required for the MIS Option</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIST 215 Information System Concepts</td>
<td>3</td>
</tr>
<tr>
<td>MIST 305 Database Application Development</td>
<td>3</td>
</tr>
<tr>
<td>MIST 315 Application Program Development I</td>
<td>3</td>
</tr>
<tr>
<td>MIST 320 Hardware &amp; Software Concepts for Management</td>
<td>3</td>
</tr>
<tr>
<td>MIST 323 Systems Analysis and Design</td>
<td>3</td>
</tr>
<tr>
<td>MIST 330 Managing Data Communications and Networks</td>
<td>3</td>
</tr>
<tr>
<td>MIST 403 IT Project Management</td>
<td>3</td>
</tr>
<tr>
<td>MIST 430 Information Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>Total Required Option Courses (8 courses)</td>
<td>24</td>
</tr>
<tr>
<td>*Free Electives (3 courses)</td>
<td>9</td>
</tr>
</tbody>
</table>

Table 6. Proposed Courses Required for the Undergraduate MIS Option.
Suggested possible tracks and courses for the electives:

1. Business Systems Analysis/Application Development
   1. MIST 415 (Required)
   2. MIST 401
   3. MIST 325 or
   4. MIST 435

2. Security
   1. MIST 325 (Required)
   2. MIST 425
   3. MIST 307 or
   4. MIST 450

3. Website Development
   1. MIST 307 (Required)
   2. MIST 427
   3. MIST 435 or
   4. MIST 450

4. Management Information Systems
   1. MIST 310 (Required)
   2. MIST 450
   3. MIST 325 or
   4. MIST 401
A Sample Expanded Course Outline for MIST 215

New York Institute of Technology

Course title: Information System Concepts

Course number: MIST 215

Prepared by: Dr Benjamin Khoo

Date prepared: January 10, 2008

Section A

1. Catalogue description

Examines use of information technology to meet management challenges within the business environment. Discuss and promote an understanding of the alignment of information systems with business and an appreciation for the relationship between systems and organizational processes. **Prerequisite:** MIST 101

2. Required background or experience

a. Prerequisites. MIST 101 (Microcomputer proficiency)

b. Prerequisites justification. Problems and projects in the course require knowledge of managerial principles used by contemporary business organizations and basic microcomputer skills.

c. General education contribution. The student is expected to learn how organizations use information as a strategic asset. Students also acquire valuable analytical and presentation skills by learning how to convert data into information and prepare it for use by decision-makers.

3. Expected outcomes

- Students will learn to collect and analyze strategic information, analyze them with software tools, and present the results in clear, effective and meaningful ways.
- Students will learn the language and terminology of Information Systems technologies used in contemporary business
- Students will learn how information is used in different business domains, including distributed, networked, multi-national and multi-cultural environments
- Students will become aware of social/ethical impacts of information technologies and be able to define appropriate uses within cultural and ethical norms.

4. Text and references

Information Technology for Management by Turban, McLean & Wetherby; 2000; ISBN: 047138919-6, or other appropriate text.
5. Special or unique student materials
   Access to a computer with Microsoft Office including Excel, PowerPoint and Access (or other
   appropriate office automation tool as determined by the MIS Department)
   ___Zip Disk     ___Calculator     ___Camera     X__Laptop
   ___Floppy Disk   ___Graph Paper   ___Video Camera   X__Computer
   ___CD-Rom        ___Writing Pad   ___Videotape   ___Other

6. Special or unique university facilities
   Classroom projection facilities for demonstrating software. University-supported computer
   laboratories in which students can work with the software are very helpful.
   X__Computer Lab     ___Computer Connection     ___“Smart” Classroom (one
   workstation)
   ___File Server     X__White Board/Markers     X__Overhead Screen
   ___Computer Projector     ___VCR     ___Microphone
   ___Laser Pointer     X__Printer     ___Moveable Classroom
   ___Internet Connection     ___Laptop Ports     ___Other

7. Expanded description of the course and instructional methods
   a. Instructional methods used in this course include lectures, class discussions, in-class
demonstrations
      1. Lectures are used to clarify and supplement text readings
      2. Class discussions are used to facilitate student understanding and provide
         integration of course material within the business educational domain
      3. Projects provide hands-on experience with information technologies
   b. Students are expected to assimilate a significant portion of course content through self-
      study of the textbook and instructor-provided materials
   c. Student Projects provide hands-on experience with information technologies
      1. Internet Project: students collect, analyze and present information obtained
         from the Internet
      2. Spreadsheet Project: Students learn intermediate spreadsheet construction
         and analytical skills
      3. Database Project: students design and use a simple database
      4. Writing Assignment: Student gain experience in business writing using the
         vocabulary and contexts discovered during the course
   X__Lecture     ___Cases     ___Individualized Instruction
   X__Lecture/Discussion     ___Open Lab     ___Cooperative Learning
   ___Seminar     ___Videotapes     ___Distance Learning
   X__Project     ___Other

8. Methods of evaluating outcomes
   • Projects and written assignments: 50% of final grade
   • Examinations: 50% of final grade
**Evaluation Tools:**

<table>
<thead>
<tr>
<th>Individual Paper: ___%</th>
<th>Tests &amp; Exams <em>50</em>_%</th>
<th>Individual Project <em>25</em>_%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group Paper: ___%</td>
<td>Quizzes ___%</td>
<td>Team Project ___%</td>
</tr>
<tr>
<td>Individual Presentation ___%</td>
<td>Peer Evaluation ___%</td>
<td>Outside/Expert Evaluations ___%</td>
</tr>
<tr>
<td>Group Presentation ___%</td>
<td>Participation ___%</td>
<td>Other: Assignments  <em>25</em>_%</td>
</tr>
</tbody>
</table>

**Section B**

<table>
<thead>
<tr>
<th>Module Number</th>
<th>Description</th>
</tr>
</thead>
</table>
| 1             | **Orientation / Introduction**  
Course content and objectives  
Course requirements and conduct  
Grading policy, evaluation, and expectations |
| 2             | **Review of Projects and Assignments**  
Internet Project  
Excel Project  
Access Database Project  
Research Paper or Management Interview |
| 3             | **Organizations, Environments & Information Technologies**  
New World of Business  
Information Technology Developments and Trends  
Classification of Information Systems  
Information Infrastructure and Architecture  
Managing Information Resources |
| 4             | **Strategic Information Systems**  
Porter’s Competitive Forces & Value Chain Models  
Strategic Information Systems Frameworks  
Strategic Information Systems Applications |
| 5             | **BPR, ERP & Supply Chain Management**  
Business Process Reengineering  
Computerized Systems: MRP, ERP, SCM  
The Networked Organization  
Virtual Corporations |
| 6             | **Examination #1** |
| 7             | **Network Computing**  
The Internet  
Groupware Technology and Infrastructure |
| 8             | **Electronic Commerce**  
Concepts and Technologies  
Business to Consumer  
Business to Business  
Customers, Market Research and CRM  
EDI, Payments & Supply-chain Management |
| 9 | **Impact of IT on Organizations and Individuals** |
|   | Ethical Issues |
|   | Impact on Organizations |
|   | Societal Impacts |
| 10 | • **Operational Systems** |
|   | Transaction Processing Systems |
|   | Functional Information Systems |
| 11 | • **Examination #2** |
| 12 | • **Managers and Decision-Making** |
|   | The Manager’s Job |
|   | Decision Support Systems |
|   | Corporate-Level Decision Support |
| 13 | • **Data and Knowledge Management** |
|   | Data Warehousing, Data Mining & Analysis |
|   | Data Visualization Technologies |
|   | Marketing Databases & Data Marts |
|   | Knowledge Management |
| 14 | • **Intelligent Systems and Artificial Intelligence** |
|   | Expert Systems |
|   | Natural Language & Image Recognition |
|   | Neural Computing |
|   | Intelligent Agents |
| 15 | • **Examination #3** |
| 16 | • **Information Systems Planning** |
|   | Strategic Planning |
|   | Requirements Analysis |
|   | Designing Information Architectures |
| 17 | • **Information Systems Economics** |
|   | Cost / Benefit Analysis |
|   | Feasibility |
|   | Accounting for Cost: Chargeback Systems |
|   | Outsourcing |
| 18 | • **Systems Development** |
|   | Systems Development Life Cycle |
|   | Rapid Development |
|   | Outsourcing Systems Development |
| 19 | • **Managing Information Resources** |
|   | The IS Department |
|   | IS Vulnerability and Computer Crimes |
| 20 | • **Examination #4** |
Business Systems Analysis/Application Development Career Track Contract

for curriculum years 2008 - 2009 and later

WARNING – THIS CONTRACT CANNOT BE USED IF YOU ARE ON A CURRICULUM YEAR 2007-2008 OR EARLIER

Curriculum Year

____________________________________
Student Name (print last name, first name)

____________________________________
Student Id

Having studied the qualifications needed for each MIS career track, and my personal attributes, goals, and objectives, I have selected the Business Systems Analysis/Application Development Career Track. In fulfillment of the requirements for my chosen career track, I will complete the following courses:

<table>
<thead>
<tr>
<th>Courses Required for the MIS Option</th>
<th>Credits</th>
<th>Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIST 215 Information System Concepts</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MIST 305 Database Application Development</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MIST 315 Application Program Development I</td>
<td>3</td>
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<tr>
<td>MIST 320 Hardware &amp; Software Concepts for Management</td>
<td>3</td>
<td></td>
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<tr>
<td>MIST 323 Systems Analysis and Design</td>
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<td></td>
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<tr>
<td>MIST 330 Managing Data Communications and Networks</td>
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<td></td>
</tr>
<tr>
<td>MIST 403 IT Project Management</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MIST 430 Information Resource Management</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Total Required Option Courses (8 courses)</strong></td>
<td><strong>24</strong></td>
<td></td>
</tr>
<tr>
<td>*Free Electives (3 courses)</td>
<td>9</td>
<td></td>
</tr>
</tbody>
</table>

Select three (3) courses from the following:

<table>
<thead>
<tr>
<th>Free Electives (3 courses)</th>
<th>Credits</th>
<th>Take</th>
<th>Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIST 415 Application Program Development II (Required)</td>
<td>3</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>MIST 401 MIS Seminar</td>
<td>3</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>MIST 325 Information Security OR</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MIST 435 Human Factors in Information Systems</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

____________________________________
Student Signature

____________________________________
Advisor Signature

____________________________________
Date

____________________________________
Advisor Printed Name
Section 3: Proposed Graduate Curriculum

This section will present the original graduate MIS option curriculum from the Graduate Catalog 2007-2008, propose the update to the MIS curriculum by updating some existing courses and proposing some new courses. Updates can just be a change in the course title, description or prerequisites. New courses are courses with new content and it can use an existing course number or new course number. A table of the comparison of the original graduate MIS courses versus the proposed courses is presented next; followed by the proposed course sequence and requirement for the MIS option. Also included is an Expanded Course Outline for MIST601 which is the proposed MBA core MIS course.

Original MBA Curriculum Requirements (from Graduate Catalog 2007-2008)

Credits required for the General M.B.A. degree range from a minimum of 36 credits to a maximum of 54 credits. The program is divided into three levels. A summary of the levels and credits required in each level is shown below:

<table>
<thead>
<tr>
<th>Minimum</th>
<th>Maximum</th>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>12</td>
<td>I</td>
<td>Prerequisites</td>
</tr>
<tr>
<td>27</td>
<td>27</td>
<td>II</td>
<td>Core Courses</td>
</tr>
<tr>
<td>9</td>
<td>9</td>
<td>III</td>
<td>Electives/Thesis</td>
</tr>
<tr>
<td>0</td>
<td>6</td>
<td>III</td>
<td>Orals/Thesis Substitutes</td>
</tr>
<tr>
<td>36</td>
<td>54</td>
<td>Total</td>
<td></td>
</tr>
</tbody>
</table>

The M.B.A. degree with a specialized concentration usually requires six additional credits. A minimum of sixty credits are required for the completion of the M.B.A.-CPA track.

LEVEL I

MIST 595 Information Systems for Management 3 credits
Waiver conditions. The student must demonstrate proficiency with word processing, spreadsheets, database, presentation software, and Internet/web development techniques by passing a school of management MIST placement test or by successfully completing 6 credits of applied computer courses within the last five years. Upon review of the individual student's learning credentials, the MBA Program Director may grant waivers as exceptions to these stipulated conditions where appropriate.

LEVEL II
None

LEVEL III

Elective Courses and M.B.A. Degree Types and Options
Student may elect to pursue either a General M.B.A. or the M.B.A. with a Concentration and choose either the Comprehensive Oral Examination option, or extra coursework in lieu of the Oral Examination. While there is no required time at which the choices must be made, the earlier decisions are made, the easier it is to optimize the student's educational program in terms of selecting and scheduling of courses. A detailed description of choices and options follows.

M.B.A. With Concentration
In order to earn an M.B.A. with a concentration, students must concentrate their elective coursework (15 credits) in any one specialized area of study. Any combination of LEVEL III electives may be taken by students pursuing General M.B.A. degree, provided they have the necessary prerequisites. Each of the following elective LEVEL III courses counts for 3 credits of graduate coursework.
E-Commerce
MGMT 706 Cyber Law, Policy and Ethics
MGMT 755 Security Risk Analysis
MGMT 775 Introduction to E-Commerce (Required)
MGMT 780 Supply Chain Management
MIST 705 Information Resource Management
MIST 710 Systems Hardware and Software
MIST 720 Database Management Systems
MIST 750 Data Communication and Networks
TECH 701 Technology and Organizations
MRKT 740 Marketing on the Internet (Required)

Management of Information Systems
MIST 705 Information Resource Management
MIST 710 Systems Hardware and Software
MIST 715 Systems Analysis and Design
MIST 720 Database Management Systems
MIST 735 Computer Simulation and Modeling
MIST 740 Decision Support Systems
MIST 750 Managing Data Communications and Networks
MIST 757 Computer Information Systems Security
MIST 760 Current Topics in MIS

Original Course Description

MIST 595 Information Systems for Management 3 credits
This course is an introduction to the use of computer systems as problem-solving tools of management. Software in several functional areas will be reviewed with illustrations of word processing, spreadsheets, presentation, database, and internet/web applications. The web component covers site development, incorporation of applets, forms processing, and the file transfer protocols.

MIST 705 Information Resource Management 3 credits
Introduces the use of the information resources through which a business can achieve competitive advantage. Topics covered include systems development, end-user computing approaches, computer-based information systems, and enterprise computing, both domestic and global. Prerequisite: MIST 595 or demonstrated proficiency using Excel, Access and Internet.

MIST 710 Systems Hardware and Software 3 credits
Analyze the general characteristics of computer systems and programming languages. Develop criteria to evaluate hardware and software selection for "end users" and information systems development. Prerequisite: MIST 705.

MIST 715 Systems Analysis and Design 3 credits
Application of systems approach to the analysis and design of information systems. Topics covered include techniques for information requirement analysis, systems analysis issues, design theory, design techniques, system development life cycle and project management issues. Prerequisite: MIST 705 or equivalent work experience.

MIST 720 Data-Base Management Systems 3 credits
This course focuses on the general concepts and methodologies in file and data-base management systems-data representation, data modeling and file organization. Additional focus will be on the movement of data to related data-base systems within and outside the user organization. Students are required to understand the architecture of and start implementing simple data-base applications using commercially available packages such as MS-ACCESS, and ORACLE. Prerequisite: MIST or equivalent.

MIST 722 Database Management Systems Applications 3 credits
This course presents a hands-on introduction to database management systems using core components of state-of-the-art DBMS software such as Oracle 8i. Topics include Oracle 8i architecture, Enterprise Manager, EXP & IMP, SQL*Plus, Precompilers, Assistants and WebDB. A comprehensive project is required. Coverage is consistent with the current certification standards for Database Administrators. Corequisite: MIST 720
MIST 730 Audit and Control of Computer-Based Systems 3 credits
Examines the theory and practice of audit control as applied to computer-based information systems with emphasis on audit of efficiency, audit of effectiveness and audit of control security. Prerequisites: ACCT 595, MIST 705 or equivalents.

MIST 735 Computer Simulation and Modeling 3 credits
Analyzes the role of simulation and modeling in decision-support systems and computer-based information systems. Examines the features, types, uses, construction and simulation of models in management decision-making process. Prerequisite: MIST 705.

MIST 740 Decision Support Systems 3 credits
Decision-support systems (DSS) support management decision-making in a business environment. Its focus is to provide viable alternatives for managers rather than replacing judgement with an optimized solution. General topics covered include theories of organization, decision theories, inferential process, information systems, DSS software and hardware and model building. Prerequisite: MIST 705.

MIST 745 Distributed Processing 3 credits
Examines the features of data communication systems and their impact in the business enterprise. Topics include microprocessors, computers, interfacing file security, equipment configurations, local area networks, managerial implications and required organizational structure. Prerequisite: MIST 705.

MIST 750 Data Communication and Networks 3 credits
This course provides an introduction to networking, generating and receiving data, encoding and decoding, local area and wide area networks, client server networks, decentralized and centralized networks. Topics include data transmission channels, procedures, security, electronic mail, electronic fund transfer, network administration, and integration of networks and databases. Prerequisite: MIST 705 or equivalent.

MIST 752 Data Communications and Networks Applications 3 credits
This course presents a hands-on introduction to networking principles and administration using state-of-the-art network operating systems such as Microsoft Windows 2000 Server. Topics include Network Essentials, NT Server versus Workstation, Installation, Accounts and Shared Resources, Groups, Security, Rights, Policies, Enterprise Networking, Printing, Client Connections, Network Applications, TCP/IP, IIS Internet/Intranet Services, Remote Access Services (RAS), Monitoring and Security. A comprehensive project is required. Coverage is consistent with the current certification standards for data communications and networks administration. Corequisite: MIST 750.

MIST 757 Computer Information Systems Security 3 credits
Reviews the current security issues in terms of technical, managerial, and legal aspects in a gamut of information systems, with emphasis on e-Commerce. Prevention and administration techniques for securing computers and networks will be discussed in terms of theory and practice. Prerequisite: MIST 750.

MIST 760 Current Topics in Management Information Systems 3 credits
Coverage includes technological changes related to management, organization and information sciences. Relevant topics such as strategic planning, artificial intelligence and expert systems will be covered. Prerequisite: MIST 705.
The proposed MIS graduate courses are based on the recommended IS Foundations and Core courses in the MSIS2000 model graduate curriculum and adapted to fit the unique context of the School of Management at NYIT. The IS Foundations and Core areas from the MSIS2000 model graduate curriculum can be mapped to the proposed MIST courses as follows:

<table>
<thead>
<tr>
<th>MIS2000 IS Foundations</th>
<th>Proposed MIST courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>IS’97.1 – Fundamentals of Information Systems</td>
<td>MIST601 Research Methods in Business Information Systems</td>
</tr>
<tr>
<td>IS’97.4 – Information Technology Hardware and Software</td>
<td>MIST710 Systems Hardware and Software</td>
</tr>
<tr>
<td>IS’97.5 – Programming, Data and Object Structures</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MIS2000 IS Core</th>
<th>Proposed MIST courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSIS2000.1 – Data Management</td>
<td>MIST720 Database Management Systems</td>
</tr>
<tr>
<td>MSIS2000.2 – Analysis, Modeling and Design</td>
<td>MIST715 Systems Analysis and Design</td>
</tr>
<tr>
<td>MSIS2000.3 – Data Communications &amp; Networking</td>
<td>MIST750 Data Communications and Networks</td>
</tr>
<tr>
<td>MSIS2000.4 – Project and Change Management</td>
<td>MIST745 Information Systems Strategy and Management</td>
</tr>
<tr>
<td>MSIS2000.5 – IS Policy and Strategy</td>
<td></td>
</tr>
<tr>
<td>MSIS2000.6 – IS Integration</td>
<td></td>
</tr>
</tbody>
</table>

Table 7. MSIS2000 IS Foundations and Core Areas Mapped to MIST Courses

A Comparison of the Original Graduate MIS Courses Versus the Proposed Courses.

<table>
<thead>
<tr>
<th>Original Courses</th>
<th>Cr.</th>
<th>Proposed Courses</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 MIST595 Information Systems for Management</td>
<td>3</td>
<td>MIST595 Information Systems for Management</td>
<td>3</td>
</tr>
<tr>
<td>3 MIST710 Systems Hardware &amp; Software</td>
<td>3</td>
<td>MIST705 Electronic Business</td>
<td>3</td>
</tr>
<tr>
<td>4 MIST715 Systems Analysis and Design</td>
<td>3</td>
<td>MIST710 Systems Hardware &amp; Software</td>
<td>3</td>
</tr>
<tr>
<td>5 MIST720 Database Management System</td>
<td>3</td>
<td>MIST715 Systems Analysis and Design*</td>
<td>3</td>
</tr>
<tr>
<td>6 MIST722 Database Management System Appln.</td>
<td>3</td>
<td>MIST720 Database Management System</td>
<td>3</td>
</tr>
<tr>
<td>7 MIST730 Audit &amp; Control of Computer-based Systems</td>
<td>3</td>
<td>MIST730 Audit &amp; Control of Computer-based Systems*</td>
<td>3</td>
</tr>
<tr>
<td>8 MIST735 Computer Simulation &amp; Modeling</td>
<td>3</td>
<td>MIST735 Global Information Technology Management</td>
<td>3</td>
</tr>
<tr>
<td>9 MIST740 Decision Support Systems</td>
<td>3</td>
<td>MIST740 Decision Support Systems</td>
<td>3</td>
</tr>
<tr>
<td>10 MIST745 Distributed Processing</td>
<td>3</td>
<td>MIST745 Information Systems Strategy and Management</td>
<td>3</td>
</tr>
<tr>
<td>11 MIST750 Data Communication &amp; Networks</td>
<td>3</td>
<td>MIST750 Data Communication &amp; Networks</td>
<td>3</td>
</tr>
<tr>
<td>12 MIST752 Data Communication &amp; Networks Appln.</td>
<td>3</td>
<td>MIST757 Computer IS Security</td>
<td>3</td>
</tr>
<tr>
<td>13 MIST757 Computer IS Security</td>
<td>3</td>
<td>MIST760 Current Topics in IS</td>
<td>3</td>
</tr>
<tr>
<td>14 MIST760 Current Topics in IS</td>
<td>3</td>
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</tbody>
</table>

Table 8. Comparison of the Original Graduate MIS Courses Versus the Proposed Courses

Note:
1. It is proposed that a lower level course “MIST601 Research Methods in Business Information Systems” replace the current upper level “MIST705 Information Resource Management” course and be the MIS core course for the MIS option (should also be included in the MBA core).
2. 75% of the content for the proposed course MIST601 introduces business research methods.
3. Proposed courses in bold are new courses.
4. Proposed courses with @ are new courses with an existing course number.
5. Proposed courses with * have its content updated from the existing course.
6. The proposed course MIST730 is updated to include the CBOK for the Certified Information Systems Auditor (CISA). See Section 4 for more details.
7. The proposed course MIST715 is updated to include the CBOK for the IBM Certified Solution Designer (Object Oriented Analysis and Design, vUML 2). See Section 4 for more details.

New Course Description

Proposed MIS (or MBA) Core

MIST601 Research Methods in Business Information Systems 3 credits
This course will introduce students to business research methods to identify and investigate business problems; stating problem statements and hypotheses; defining and collecting data; and selecting appropriate analysis techniques. Students will examine different types of business research (laboratory, field, delphi or survey) and limitations for inference. Issues and various approaches involved in defining, developing or acquiring, and deploying information systems are studied within both strategic and support roles. Students will examine how information technology can be used as an enabler for business process improvement and service innovation, how to recognize business processes and assess their information related needs, and how to develop organizational agility through business process innovations enabled by information technology. **Prerequisite:** MIST595

Proposed MIS Option Courses

MIST705 Electronic Business 3 credits
This course aims to provide a broad-based foundation for the study of Electronic Business (EB) through examining how new information technologies and the Internet are used to affect the exchange of goods and services between buyers and sellers and within organizations. It will provide an overview of the fundamentals required for setting up an E-Commerce strategy for a company. It takes a management- and business-oriented approach to ICT in E-Business and E-Government. Students will become familiar with the notions, definitions and basic methods of E-Business, E-Commerce, E-Procurement and Internet technology. It emphasizes e-business models and technology, assessing company performance and value; design, promotion, global and social issues. It also critically examines a few contemporary electronic commerce applications and analyze cases that illustrate both failures and successes and make a critical assessment of different E-Commerce strategies. **Prerequisite:** MIST601

MIST 715 Systems Analysis and Design 3 credits
This course teaches the application of object-oriented systems approach to the analysis and design of information systems. Content for the analysis portion of the course include UML and the Modeling Process, Concepts of Object Orientation, Architectural Analysis, and Use Case Analysis while the design portion include Identify Design Elements, Identify Design Mechanisms, Distribution, Use Case Design, Subsystem Design and Class Design. Topics covered include techniques for information requirement analysis, systems analysis issues, design theory, design techniques, system development life cycle and project management issues. **Prerequisite:** MIST601 or equivalent work experience.

MIST730 Audit & Control of Computer-based Systems 3 credits
This course examines the fundamentals of advanced concepts in IS Auditing to identify technological risks to the business and operational environments and how to use relevant business analysis as well as IT audit tools and techniques. Examines the theory and practice of audit control as applied to computer-based information systems with emphasis on audit of efficiency, audit of effectiveness and audit of control security. Topics discussed include: IS Audit Process, IT Governance, Systems and Infrastructure Lifecycle Management, IT Service Delivery and Support, Protection of Information Assets, Business Continuity and Disaster Recovery. **Prerequisites:** ACCT 595, MIST 601 or equivalents.
MIST735 Global Information Technology Management 3 credits
This course addresses the use of information technology as a major component of the business plan for global organizations. Issues in the diffusion, acceptance and use of IT in different countries, global out-sourcing, the strategic role of organizing the cross-national IS function and using information technology to develop products, services, and capabilities to support strategic advantage in a global marketplace are discussed. Students will examine interesting topics related to the influences between the growth in information technology, culture and globalization of business such as: Frameworks/models for global information systems (GIS); development, evaluation and management of GIS; Organizational and management structures for GIS; Global issues in Electronic Commerce and Supply Chain Management (SCM); Societal impacts of IT in developing countries; IT and Economic Development; Transborder data flow issues; Distributed global databases and networks; Comparative studies of nations. Prerequisite: MIST601

MIST745 Information Systems Strategy and Management 3 credits
This course will explore how IT fits into traditional business models, how it is modifying those, and how entirely new business models are being enabled by cutting edge information and communication technologies. Students will study the expectations of general management with respect to the IT components of their own business, businesses with which their business interacts, and their competitors. Students will analyze and discuss the challenges and opportunities for strategic management and utilization of contemporary information technologies; learn about the frameworks for multifaceted decisions associated with planning, developing, implementing and using computer-based information systems in business organizations; and examine current and emerging IT issues and best practices. Prerequisite: MIST601

Original Course Description

MIST 595 Information Systems for Management 3 credits
This course is an introduction to the use of computer systems as problem-solving tools of management. Software in several functional areas will be reviewed with illustrations of word processing, spreadsheets, presentation, database, and internet/web applications. The web component covers site development, incorporation of applets, forms processing, and the file transfer protocols.

Updated Course Description

MIST 710 Systems Hardware and Software 3 credits
Analyze the general characteristics of computer systems and programming languages. Develop criteria to evaluate hardware and software selection for “end users” and information systems development. Prerequisites: MIST 601.

MIST 720 Data-Base Management Systems 3 credits
This course focuses on the general concepts and methodologies in file and data-base management systems-data representation, data modeling and file organization. Additional focus will be on the movement of data to related data-base systems within and outside the user organization. Students are required to understand the architecture of and start implementing simple data-base applications using commercially available packages such as MS-ACCESS, and ORACLE. Prerequisite: MIST601 or equivalent.

MIST 740 Decision Support Systems 3 credits
Decision-support systems (DSS) support management decision-making in a business environment. Its focus is to provide viable alternatives for managers rather than replacing judgment with an optimized solution. General topics covered include theories of organization, decision theories, inferential process, information systems, DSS software and hardware and model building. Prerequisite: MIST601.

MIST 750 Data Communication and Networks 3 credits
This course provides an introduction to networking, generating and receiving data, encoding and decoding, local area and wide area networks, client server networks, decentralized and centralized networks. Topics include data transmission channels, procedures, security, electronic mail, electronic fund transfer, network administration, and integration of networks and databases. Prerequisite: MIST601 or equivalent.
MIST 757 Computer Information Systems Security 3 credits
Reviews the current security issues in terms of technical, managerial, and legal aspects in a gamut of information systems, with emphasis on e-Commerce. Prevention and administration techniques for securing computers and networks will be discussed in terms of theory and practice. **Prerequisite:** MIST601.

MIST 760 Current Topics in Management Information Systems 3 credits
Coverage includes technological changes related to management, organization and information sciences. Relevant topics such as strategic planning, artificial intelligence and expert systems will be covered. **Prerequisite:** MIST601.
From the skills in demand by employers (Luftman, 2006), the demand for information security, the demand for professional certification and the recommended MSIS2000 model graduate curriculum (as illustrated in Table 4), the following are the proposed courses for the concentrations in the MIS option:

1. **Electronic Business**
   1. MIST 705 Electronic Business (Required)
   2. MIST 715 Systems Analysis and Design
   3. MIST 720 Database Management Systems
   4. MIST 735 Global IT Management (Required)
   5. MIST 740 Decision Support Systems
   6. MIST 750 Data Communication and Networks
   7. MGMT 775 Introduction to E-Commerce
   8. MGMT 780 Supply Chain Management
   9. MRKT 740 Marketing on the Internet

2. **Information Systems Security**
   1. MGMT 706 Cyber Law, Policy and Ethics
   2. MGMT 755 Security Risk Analysis (Required)
   3. MIST 705 Electronic Business
   4. MIST 710 Systems Hardware and Software
   5. MIST 715 Systems Analysis and Design
   6. MIST 730 Audit & Control of Computer-based Systems (Required)
   7. MIST 745 Information Systems Strategy & Management
   8. MIST 750 Data Communication & Networks
   9. MIST 757 Computer Information Systems Security
3. Management Information System
   1. MIST 710 Systems Hardware and Software
   2. MIST 715 Systems Analysis and Design (Required)
   3. MIST 720 Database Management Systems
   4. MIST 735 Global IT Management
   5. MIST 740 Decision Support Systems
   6. MIST 745 Information Systems Strategy & Management (Required)
   7. MIST 750 Data Communication & Networks
   8. MIST 757 Computer Information Systems Security
   9. MIST 760 Current Topics in MIS
A Sample Expanded Course Outline for MIST 601

New York Institute of Technology

Course title: Research Methods in Information Systems

Course number: MIST 601

Prepared by: Dr. Benjamin Khoo

Date prepared: January 15, 2008

Section A

1. Catalogue description

This course will introduce students to business research methods to identify and investigate business problems; stating problem statements and hypotheses; defining and collecting data; and selecting appropriate analysis techniques. Students will examine different types of business research (laboratory, field, delphi or survey) and limitations for inference. Issues and various approaches involved in defining, developing or acquiring, and deploying information systems are studied within both strategic and support roles. Students will examine how information technology can be used as an enabler for business process improvement and service innovation, how to recognize business processes and assess their information related needs, and how to develop organizational agility through business process innovations enabled by information technology. **Prerequisite:** MIST 595

2. Required background or experience

1. Prerequisites. MIST 595
2. Prerequisites justification. Problems and projects in the course require knowledge of managerial principles used by contemporary business organizations and basic microcomputer skills.
3. General education contribution. The student is expected to learn business research methods to identify and investigate business problems; stating problem statements and hypotheses; defining and collecting data; and selecting appropriate analysis techniques. Students also acquire valuable analytical and presentation skills by learning how to convert data into information and prepare it for use by decision-makers.

3. Expected outcomes

It is expected that students will:

a. learn the rudiments of research in MIS.
b. learn to collect and analyze strategic information, analyze them with software tools, and present the results in clear, effective and meaningful ways.
c. learn how information is used in different business domains, including distributed, networked, multi-national and multi-cultural environments
d. learn how information technology can be used as an enabler for business process improvement and service innovation, how to recognize business processes and assess their information related needs, and how to develop organizational agility through business process innovations enabled by information technology
3. **Text and references**


4. **Special or unique student materials:**

   Students should have access to a computer with Microsoft Office and with access to the Internet.

   - Zip Disk
   - Calculator
   - Camera
   - Laptop
   - Floppy Disk
   - Graph Paper
   - Video Camera
   - Computer
   - CD-Rom
   - Writing Pad
   - Videotape
   - Other

5. **Special or unique university facilities**

   Classroom projection facilities for lectures and demonstrating applications. University-supported computer laboratories in which students can work with the application software are very helpful.

   - Computer Lab
   - Computer Connection
   - “Smart” Classroom (one workstation)
   - File Server
   - White Board/Markers
   - Overhead Screen
   - Computer Projector
   - VCR
   - Microphone
   - Laser Pointer
   - Printer
   - Moveable Classroom Furniture
   - Internet Connection
   - Laptop Ports
   - Other

6. **Expanded description of the course and instructional methods**

   a. Instructional methods used in this course include lectures, class discussions, in-class demonstrations
      1. Lectures are used to clarify and supplement text readings.
      2. Class discussions and in-class demonstrations are used to facilitate student understanding and provide integration of course material within the business educational domain.
      3. Projects and assignments reinforce students’ understanding of current issues in MIS.

   b. Students are expected to assimilate a significant portion of course content through self-study of the readings, textbook and instructor-provided materials.

   c. The research papers allow the students to put into practice what they have learned and exercise the students’ ability to conduct research in MIS. The instructor will provide assistance and guidance in the research and writing the paper.
d. Two research papers are required. More detailed discussion of the papers will be done in class. The length of a research paper is typically between 7 to more than 20 pages depending on the publication.

**Topic area:** Any issue related to MIS -- for example, e-business, ethics, security, distance learning, system design, e-cash, etc.

The information for the paper should come from current issues -- current means from 2005-2007. Source material should be copied and attached to your paper. You also need to cite your source within the paper. Assistance on "how-to" for a research paper can be found at [http://owl.english.purdue.edu/workshops/hypertext/ResearchW/index.html](http://owl.english.purdue.edu/workshops/hypertext/ResearchW/index.html) and the APA style format guide can be found at [http://owl.english.purdue.edu/owl/resource/560/01/](http://owl.english.purdue.edu/owl/resource/560/01/)  **Note:** Most publications provide their guidelines for formatting the research paper to be published.

(X) Lecture  ____Cases  ____Individualized Instruction
(X) Lecture/Discussion  ____Open Lab  ____Cooperative Learning
 ____Seminar  ____Videotapes  ____Distance Learning
(X) Project  ____Other

8. Methods of evaluating outcomes

<table>
<thead>
<tr>
<th></th>
<th>50% of final grade</th>
<th>20% Mid-term Exam</th>
<th>20% Final Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Research Papers:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Examinations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class Participation:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Evaluation Tools:**

- Individual Paper: _50__% 
- Tests & Exams _40__% 
- Individual Project ___%

- Group Paper: ___%  
- Quizzes ___%  
- Team Project ___%

- Individual Presentation ___% 
- Peer Evaluation ___% 
- Outside/Expert Evaluations ___%

- Group Presentation ___% 
- Participation ___% 
- Other: _Participation _10__% 

9. Independent Work

All work is to represent the student’s own efforts. Students are permitted to seek help in clarifying paper requirements or related concepts, but all materials submitted must represent original work by each student. Students MUST not duplicate work done by others. Students not adhering to this policy is subject to disciplinary action (see the University Catalog for specific penalties).
## Important Resource Link:

| Research & Writing: | [http://www.cs.cmu.edu/afs/cs.cmu.edu/user/mleone/web/how-to.html](http://www.cs.cmu.edu/afs/cs.cmu.edu/user/mleone/web/how-to.html) |
| ISWorld Ph.D. Page: | [http://www.isworld.org/phd/phd.htm](http://www.isworld.org/phd/phd.htm) |
| Research & Writing: ISWorld Research Resources: | [http://www.isworld.org/#research](http://www.isworld.org/#research) |
| Global Information Systems | ASEAN, Global IS, |
| MIS Journals List | [Journal-List.htm](http://www.isworld.org/#research) |
| List of some call for papers | [cfp.htm](http://www.isworld.org/#research) (Note the paper due date of the cfp that you are interested in) |

### Section B

<table>
<thead>
<tr>
<th>Week #</th>
<th>Material Covered</th>
<th>Readings/Presentation</th>
<th>Assignment/Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>Introduction to the course &amp; Syllabus The Business Research Process</td>
<td>Slides1</td>
<td>(check cfp <a href="http://www.isworld.org/#research">February8-2008_HICB.htm</a>) Research in IS, IS Research Papers</td>
</tr>
<tr>
<td>Week 4</td>
<td>Design Strategies Sampling Design</td>
<td>Slides4</td>
<td>Preliminary Research Proposal#1</td>
</tr>
<tr>
<td>Week 5</td>
<td>Measurement Measurement Scales <strong>Mid-Term Exam</strong></td>
<td>Slides5</td>
<td><strong>Theory Building</strong></td>
</tr>
<tr>
<td>Week 6</td>
<td>Exploring Secondary Data Survey Methods: Communicating with Participants</td>
<td>Slides6</td>
<td><strong>Theory in MIS</strong></td>
</tr>
<tr>
<td>Week 7</td>
<td>Instruments for Participant Communication Observational Studies Experimentation</td>
<td>Slides7</td>
<td>Methodological Issues in Expt. Research</td>
</tr>
<tr>
<td>Week 8</td>
<td>Data Preparation and Description Exploring, Displaying, and Examining Data</td>
<td>Slides8</td>
<td>Final Research Paper#1 due</td>
</tr>
<tr>
<td>Week 9</td>
<td>Hypothesis Testing Measures of Association</td>
<td>Slides9</td>
<td>Preliminary Research Proposal#2</td>
</tr>
<tr>
<td>Week 10</td>
<td>Multivariate Analysis: An Overview Presenting Results: Written and Oral Reports</td>
<td>Slides10</td>
<td>Validating Instruments in MIS research</td>
</tr>
<tr>
<td>Week 11</td>
<td>Paper Presentations 1</td>
<td>Students</td>
<td>Taking Industry Seriously in MIS research</td>
</tr>
<tr>
<td>Week 12</td>
<td>Case Based Research</td>
<td>Slides12</td>
<td>Validating MIS Research</td>
</tr>
<tr>
<td>Week 13</td>
<td>Technology Acceptance Model</td>
<td>Slides13</td>
<td></td>
</tr>
<tr>
<td>Week 14</td>
<td>Information Systems Security</td>
<td>Slides14</td>
<td></td>
</tr>
<tr>
<td>Week 15</td>
<td>Paper Presentations 2</td>
<td>Students</td>
<td>Final Research Paper#2 due</td>
</tr>
<tr>
<td>Week 16</td>
<td><strong>Final Exam</strong></td>
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</table>
Section 4: Proposed Certification Preparation Curriculum

From (Luftman, 2006), skills in high demand include Systems Analysis and Design (encompassing business process reengineering, project management, system implementation/programming) and security (based on the emphasis by the US government). Employers are increasingly demanding that potential and existing employees be professionally qualified in the skills required.

As a result of the existing and continuing demand for professional certification, it is recommended that proposed courses in the MIS curriculum cover part or if possible, the whole of the CBOK. The School of Management through the MIS program can also work towards being an academic partner for some of these professional certification, for example, IBM (Systems Analysis & Design certification), Sun Micro System (Java certification), ISACA (Information Systems Audit and Control Association for information security certification), IIBA (International Institute of Business Analysis for Systems Analysis & Design certification) or Microsoft (Microsoft Computer Professional certification). Typically, each certification requires a few courses to adequately cover its CBOK.

The MIS program should also create “crash courses” or “boot-camp” type certification classes. The classes can be offered as compressed certificate programs. Typically 4 or 5 classes are required for each certificate. However, certificate classes can be customized as well. The duration for each class will be 4-5 full days. These classes can be offered through one of the centers of excellence that the new dean is planning to start. Faculty will be able to teach these classes without much additional preparation as the class content matches closely to the regular course offered. The classes do not have to be taken immediately one after the other. They can be scheduled.

For example, a program “Object Oriented Analysis and Design Certificate” can be designed to prepare students for the IBM Certified Solution Designer - Object Oriented Analysis and Design -- UML 2 certification (see documentation in the References section). Another program “Business Systems Analysis and Design Certificate” can be designed for the International Institute of Business Analysis (IIBA) certification (see documentation in the References section).

From the IBM Certified Solution Designer CBOK, the Object Oriented Analysis and Design Certificate can be made up of 2 classes:
   1. Object Oriented Analysis, and
   2. Object Oriented Design

The Object Oriented Analysis class will cover:

Section 1: UML and the Modeling Process (20%)
   a. The Unified Modeling Language
   b. Process and Visual Modeling
   c. Analysis & Design Key Concepts

Section 2: Concepts of Object Orientation (40%)
   a. Relationships
   b. Class
   c. Polymorphism
   d. Interface
      1. Provided
      2. Required
   e. Structured Classes & Ports

Section 3: Architectural Analysis (20%)
   a. Key Concepts
   b. Define high-level organization of the model
c. Identify analysis mechanisms
d. Identify key abstractions
e. Create use-case realizations

Section 4: Use Case Analysis (20%)
   a. Supplement the Use-Case Description
   b. For each Use-Case Realization
      1. Find Classes from Use-Case Behavior
      2. Distribute Use-Case Behavior to Classes
   c. For each resulting analysis class
      1. Describe Responsibilities
      2. Describe Attributes and Associations
      3. Qualify Analysis Mechanisms
d. Unify Analysis Classes

The **Object Oriented Design class** will cover:

Section 1: Identify Design Elements (17%)
   a. Identify classes and subsystems
   b. Identify subsystem interfaces
   c. Update the organization of the Design Model

Section 2: Identify Design Mechanisms (8%)
   a. Categorize clients of analysis mechanisms
   b. Document architectural mechanisms

Section 3: Distribution (17%)
   a. Define the network configuration
   b. Allocate processes to nodes
   c. Define the distribution mechanism

Section 4: Use Case Design (22%)
   a. Describe interaction among design objects
   b. Simplify sequence diagrams using subsystems
   c. Describe persistence-related behavior
   d. Refine the flow of events description
   e. Unify classes and subsystems

Section 5: Subsystem Design (11%)
   a. Distribute subsystem behavior to subsystem elements
   b. Document subsystem elements
   c. Describe subsystem dependencies

Section 6: Class Design (25%)
   a. Create Initial Design Classes
   b. Define Operations
   c. Define Methods
   d. Define States
   e. Define Attributes
   f. Define Dependencies
   g. Define Associations
   h. Define Internal Structure
   i. Define Generalizations
   j. Resolve Use-Case Collisions
   k. Handle Nonfunctional Requirements in General
From the International Institute of Business Analysis (IIBA) certification CBOK, the Business Systems Analysis and Design can be made up of 2 classes:

1. Application Program Development, and
2. Information Technology Project Management

The Application Program Development class will cover:

1. Enterprise Analysis
   Enterprise Analysis describes how we take a business need, refine and clarify the definition of that need, and define a solution scope that can feasibly be implemented by the business. It covers problem definition and analysis, business case development, feasibility studies, and the definition of a solution scope.

   Purpose
   Identify and propose projects that meet strategic needs and goals.

2. Elicitation
   Elicitation describes how we work with stakeholders to find out what their needs are and ensure that we have correctly and completely understood their needs.

   Purpose
   Explore, identify and document stakeholder needs.

3. Requirement Analysis
   Requirements Analysis describes how we progressively elaborate the solution definition in order to enable the project team to design and build a solution that will meet the needs of the business and stakeholders. In order to do that, we have to analyze the stated requirements of our stakeholders to ensure that they are correct, assess the current state of the business to identify and recommend improvements, and ultimately verify and validate the results.

   Purpose
   1. Progressively elaborate stated requirements to sufficient level of detail that accurately defines the business need within specified scope
   2. Validate requirements meet the business need
   3. Verify requirements are acceptable quality

4. Solution Assessment and Validation
   Solution Assessment and Validation describes how to assess proposed solutions to determine which solution best fits the business need, identify gaps and shortcomings in solutions, and determine necessary workarounds or changes to the solution. It also describes how we assess deployed solutions to see how well they met the original need in order to enable businesses to assess the performance and effectiveness of projects.

   Purpose
   Assess solutions to ensure that strategic goals are met and requirements are satisfied.
The Information Technology Project Management class will cover:

1. Requirements Management and Communication

Requirements Management and Communication describes how we manage conflicts, issues and changes and ensure that stakeholders and the project team remain in agreement on the solution scope. Depending on the complexity and methodology of the project, this may require that we manage formal approvals, baseline and track different versions of requirements documents, and trace requirements from origination to implementation.

Purpose
1. Recognize that communication takes place throughout all knowledge areas and is important for managing requirements
2. Manage the approved solution and requirements scope
3. Ensure stakeholders have access to business analysis work products
4. Prepare and communicate requirements to stakeholders
5. Facilitate enterprise consistency and efficiency by re-using requirements whenever possible

2. Business Analysis Planning and Monitoring

Business Analysis Planning and Monitoring describes how to determine which activities are necessary to perform in order to complete a business analysis effort. It covers identification of stakeholders, selection of business analysis techniques, the process we will use to manage our requirements, and how we assess the progress of the work in order to make necessary changes in work effort. Business analysis planning is a key input to the project plan, and project management responsibilities include organizing and coordinating business analysis activities with the needs of the rest of the project team.

Purpose
1. Plan the execution of business analysis tasks
2. Update or change the approach to business analysis as required
3. Assess effectiveness of and continually improve business analysis practices

3. Business Analysis Techniques

Various business analysis techniques will be discussed (see the International Institute of Business Analysis (IIBA) certification CBOK for specific details).

Other certificate programs in Information Security, Java Programming or Microsoft software products can be designed by covering the CBOK from each of these certification bodies.

Fees

Typically, each 4-5 full-day class will cost a student between $1,200 - $2,400 depending on the resources to be provided, for example, lab facilities, computer usage, type of software used in class and class materials provided.
Section 5: Proposed School of Management Computer Laboratory

As a technology based university, NYIT is placed to provide the skills training that industry (or employers in industry) needs. As a School of Management in a technology based university, it is important that the MIS program in particular, and the business program in general, provide the facility and computing resources for students to be trained in the latest technology. The facility should be provided by NYIT while the funding can be solicited from donors or from government or private grants. It can be managed by a MIS faculty/staff under the jurisdiction of the School of Management administration. The availability of the lab will also enhance the scheduling of technology based business courses.

It is proposed that a 24 station computer laboratory with an instructor’s podium and desk-chair would be ideal. The computer tables each have a recess for the flat screen monitor while the keyboard and tower can be mounted under the table. This configuration allows each station to be used either as a computer station or a class desk, if there is no need for the computer. See sample illustrations/photos below.

Sample photos
## Estimated Startup Budget For A Computer Lab

<table>
<thead>
<tr>
<th>Description</th>
<th>Qty</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lab/ Classroom</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Classroom Desks and Chairs</td>
<td>24</td>
<td>$14,000.00</td>
</tr>
<tr>
<td>Instructors Podium</td>
<td>1</td>
<td>$1,500.00</td>
</tr>
<tr>
<td><strong>Hardware</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dell Vostro 200 Slim Tower</td>
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<td>$23,000.00</td>
</tr>
<tr>
<td>Dell 1800MP Projector</td>
<td>1</td>
<td>$700.00</td>
</tr>
<tr>
<td>Projection Screen</td>
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<td>$100.00</td>
</tr>
<tr>
<td>HP Laser Jet Printer</td>
<td>1</td>
<td>$400.00</td>
</tr>
<tr>
<td>Cat 6 Cables</td>
<td>1000 ft</td>
<td>$200.00</td>
</tr>
<tr>
<td>RJ 45 Modular Connectors</td>
<td>100</td>
<td>$100.00</td>
</tr>
<tr>
<td>Cisco - Switch</td>
<td>1</td>
<td>$700.00</td>
</tr>
<tr>
<td>Cisco - Router</td>
<td>1</td>
<td>$3500.00</td>
</tr>
<tr>
<td>Dell Power Edge Server</td>
<td>1</td>
<td>$6300.00</td>
</tr>
<tr>
<td><strong>Software</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cisco Security Agent</td>
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</tr>
<tr>
<td><strong>Sub Total</strong></td>
<td></td>
<td>$47,700.00</td>
</tr>
<tr>
<td>Misc. (e.g. backup hard-disk, wireless routers, etc)</td>
<td></td>
<td>$2,000.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>$55,000.00</td>
</tr>
</tbody>
</table>

**Note:**
Other required software & licenses (estimate) $10,000.00

(table partially adapted from MIST710 project assignment submission by Babu S.)
References


International Institute of Business Analysis Certification – IIBA Body of Knowledge (at http://www.theiiba.org/content.asp?contenttype=Body%20of%20Knowledge)

Information Systems Audit and Control Association Certification (at http://www.isaca.org/Template.cfm?Section=Certification&Template=/ContentManagement/ContentDisplay.cfm&ContentID=19934)

IS2002 Model Undergraduate Curriculum
(a copy is available at http://iris.nyit.edu/~kkhoo/Curr_Curr_IS2002-12-31.pdf)


MISIS2000 Model Graduate Curriculum
(a copy is available at http://iris.nyit.edu/~kkhoo/Curr_CURR_MSIS_2000.pdf)