Management Information Systems

In the College of Business Administration

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Master of Science Degree in Information Systems

General Information
The objective of the Master of Science degree in information systems is to prepare students to take a senior position associated with the information systems field across all private industries and public sectors. With the broadening spectrum of the information systems field and subsequent rich set of career opportunities, there is an ongoing need to educate students so that they can take leadership positions in both established and emerging fields of information systems. To serve the student and industry needs effectively, the program is designed to balance management knowledge of business and technology, general technical knowledge in information systems, and domain knowledge in the special area selected by the student. Upon successful completion of the program, students will be competent in leading organizations in the evaluation and adoption of information systems and technologies for strategic advantage as well as in bridging the cultural and communication gaps that often exist between information systems and business function professionals.

Admission to the Degree Curriculum
In addition to meeting the requirements for classified graduate standing and the general requirements for master's degrees as described in Part Two of this bulletin, the student must have satisfactorily completed equivalents of the following courses as prerequisites:

- MIS 180 Principles of Information Systems (3)
- MIS 315 Business Application Programming (3)
- BA 650 Financial Reporting and Analysis I (3)
- BA 665 Marketing (3)
- BA 662 Operations and Supply Chain Management (3)

Notice of admission with classified graduate standing will be sent to the student upon the recommendation of the College of Business Administration and the approval of the dean of the Division of Graduate Affairs.

Advancement to Candidacy
All students must satisfy the general requirements for advancement to candidacy, as described in Part Four of this bulletin. Students concurrently enrolled in deficiency coursework may be given permission to take the comprehensive examination prior to actual completion of all coursework. However, comprehensive examinations will not be evaluated and results will not be reported to the Division of Graduate Affairs until all deficiency coursework has been successfully completed. This may delay graduation.

Specific Requirements for the Master of Science Degree in Information Systems
(Major Code: 07021) (SIMS Code: 222335)

In addition to meeting the requirements for classified graduate standing as described above and the general requirements for master's degrees as described in Part Four of this bulletin, the student must complete a graduate program of at least 36 approved units including at least 27 units in 600- and 700-numbered courses. Up to nine units of coursework may be accepted as transfer credit. Not more than a total of three units in courses Business Administration 799A, Thesis, and Management Information Systems 798, Special Study, may be accepted for credit toward the degree. With approval of the graduate adviser, a substitute course may be allowed in place of a required course after reviewing student credentials.

Required core courses:
IS Technology (15 units)
- MIS 686 Database Management Systems (3)
- MIS 687 Data Communications and Distributed Data Processing (3)
- MIS 695 Information Systems Development I (3)
- MIS 697 Information Systems Development II (3)
- MIS 752 Seminar in Supply Chain Planning and Control (3)

IS Management (12 units)
- MIS 688 Information Systems in Organizations (3)
- MIS 750 Project Management (3)
- MIS 755 Information Systems Security Management (3)
- MIS 790 Directed Readings in Management Information Systems (3) Cr/NC

OR
- MIS 797 Research (3) Cr/NC/RP

Career Track (9 units)
Students select a career track and courses with the approval of the graduate adviser.

The Master of Science in information systems requires Plan A, Thesis or Plan B, a directed readings in information systems or a written comprehensive examination offered by the department. The program must be approved by the college and departmental adviser. For regulations concerning grade point averages, final approval for the granting of the degree, award of the degree, and diplomas, see the section entitled Basic Requirements for the Master's Degree, in Part Four of this bulletin.
Courses Acceptable on Master's Degree Programs in Business Administration (MIS)

Refer to Courses and Curricula and Regulations of the Division of Graduate Affairs sections of this bulletin for explanation of the course numbering system, unit or credit hour, prerequisites, and related information.

UPPER DIVISION COURSES

MIS 515. Intermediate Programming for Business Applications (3)
Prerequisite: Management Information Systems 315 or knowledge of one computer programming language.
Intermediate programming for business applications with Java, C#, or similar languages. Data structures, control structures, and program structures. Use of object-oriented features, classes, subclasses, and inheritance for modeling and processing of business information. (Formerly numbered Information and Decision Systems 515.)

MIS 520. Advanced Programming for Business Applications (3)
Prerequisite: Management Information Systems 515.
Advanced object-oriented features using Java (abstract classes, polymorphism, interfaces, generic classes) for business application programs using graphical user interfaces. Use of multithreading for business simulation. Enhancement of business applications with multimedia and database connectivity. (Formerly numbered Information and Decision Systems 520.)

GRADUATE COURSES

MIS 609. Information Technology for Business (3)
Information technology to include major horizontal technologies: hardware, software, data, telecommunications, and Internet. Focus on emerging information technologies that will provide value to organizations. Technical aspects of information technologies and their impacts on organizations. (Formerly numbered Information and Decision Systems 609.)

MIS 610. Electronic Business Technologies (3)
Prerequisite: Classified graduate standing.
Basic concepts of e-business technologies. Development tools, languages, processes, and methodologies for electronic business applications. (Formerly numbered Information and Decision Systems 610.)

MIS 620. Electronic Business Infrastructures (3)
Prerequisite: Management Information Systems 610.
Advanced information technology concepts associated with e-business and e-commerce infrastructure and systems architecture. (Formerly numbered Information and Decision Systems 620.)

MIS 630. IT Management Strategies for E-Business (3)
Prerequisite: Management Information Systems 620.
Analysis and application of strategic information technology management initiatives, designs, and architectures for attaining an organization’s e-business goals. (Formerly numbered Information and Decision Systems 630.)

MIS 680. Information Systems Hardware and Software (3)
Prerequisite: Classified graduate standing.
Computer architecture, programming languages, programming systems, and operating systems. (Formerly numbered Information and Decision Systems 680.)

MIS 686. Database Management Systems (3)
Prerequisite: Classified graduate standing.
Applications of database management systems in business. Design and administration of database processing systems applications. (Formerly numbered Information and Decision Systems 686.)

MIS 687. Data Communications and Distributed Data Processing (3)
Prerequisite: Classified graduate standing.
Applications of data communications hardware, software, and services in business data processing. Design and implementation of network applications and distributed processing systems. (Formerly numbered Information and Decision Systems 687.)

MIS 688. Information Systems in Organizations (3)
Prerequisite: Classified graduate standing.
Evolutionary role of information systems: from support function to strategic entity, planning, organizing, and administering the information systems function. Information and its relationships to business decision making. Global and ethical aspects of information technology. (Formerly numbered Information and Decision Systems 688.)

MIS 691. Decision Support Systems (3)
Prerequisite: Completion of MBA core or MS prerequisites.
Design, implementation, and integration of computerized decision support systems into business management. Problem representation, modeling, and simulation. (Formerly numbered Information and Decision Systems 691.)

MIS 695. Information Systems Development I (3)
Prerequisite: Classified graduate standing.
System development life cycle. Life cycle methodologies with emphasis on analysis of requirements using structured methodology and automated tools. Feasibility study, developmental strategies, needs management, and prototyping. (Formerly numbered Information and Decision Systems 695.)

MIS 696. Seminar in Selected Topics (3)
Intensive study in specific areas of information systems. May be repeated with new content. See Class Schedule for specific content. Credit for 596 and 696 applicable to a master’s degree with approval of the graduate advisor.

MIS 697. Information Systems Development II (3)
Prerequisite: Management Information Systems 695.
Business information systems design, installation, and implementation as part of the systems development life cycle. Structured design, prototyping, controls, the make vs. buy decision, selection of hardware and software. (Formerly numbered Information and Decision Systems 697.)

MIS 705. Communication Strategies (3)
Prerequisite: Classified graduate standing.
Development of advanced written, oral, and interpersonal communication strategies for the business environment. (Formerly numbered Information and Decision Systems 705.)

MIS 744. Seminar in Lean Six Sigma and Baldridge Quality Management (3)
Prerequisite: Business Administration 662.
Applications of lean principles, Six Sigma methodology, and Baldridge processes for business quality, agility, improvement, Advanced concepts, methods, lean tools, statistical quality tools for process improvement. (Formerly numbered Information and Decision Systems 744.)

MIS 748. Seminar in Applied Multivariate Analytics (3)
Prerequisite: Business Administration 652.
Applications of various statistical techniques and design of experiments for business. Advanced ANOVA and Taguchi designs, multiple regression modeling methodologies, and multivariate techniques, such as factor analysis, judgment analysis, multiple discriminant analysis, multivariate analysis of variance, and canonical correlation. (Formerly numbered Information and Decision Systems 748.)

MIS 749. Business Analytics (3)
Prerequisite: Business Administration 652.
Business analytics techniques for predictive modeling and customer segmentation. Applications include churn management, business experiments, cluster segmentation, and market basket analysis. (Formerly numbered Information and Decision Systems 749.)

MIS 750. Project Management (3)
Prerequisite: Business Administration 662.
Managing projects. Includes network modeling, defining activities and events, cost estimating and reporting, single and multiple resource allocation and leveling. Computerized project management software will be used. (Formerly numbered Information and Decision Systems 750.)
MIS 752. Seminar in Supply Chain Planning and Control (3)
Prerequisite: Business Administration 662.
Methodology and theory to plan and control operations and supply chain. Topics include bill of materials, sales and operations planning, master scheduling, materials requirement planning and scheduling, capacity planning, product design, and process selection. (Formerly numbered Information and Decision Systems 752.)

MIS 753. Global Supply Chain Management (3)
Prerequisite: Classified graduate standing.
Advanced concepts, methods, and implementation of global supply chain strategies and management; global sourcing and supplier development; global logistic network and management; information technology and e-business for supply chain; supply chain design and optimization; performance metrics and measurements. (Formerly numbered Information and Decision Systems 753.)

MIS 754. Seminar in Operations Strategy (3)
Prerequisite: Business Administration 662.
Strategic issues in operations and their integration with other functional areas. Includes operations strategy, product and process planning, experience curves, productivity measurements, and information technology implementation. (Formerly numbered Information and Decision Systems 754.)

MIS 755. Information Systems Security Management (3)
Prerequisite: Classified graduate standing.
Information systems management. Focus on creation of a security plan for an organization to include risk analysis, security issues, security design, security plan, disaster recovery/business continuity, and threat analysis. (Formerly numbered Information and Decision Systems 755.)

MIS 790. Directed Readings in Management Information Systems (3) Cr/NC
Prerequisite: Advancement to candidacy.
Preparation for the comprehensive examination for students. (Formerly numbered Information and Decision Systems 790.)

MIS 797. Research (3) Cr/NC/RP
Prerequisite: Advancement to candidacy.
Research in the area of management information systems. Maximum credit six units applicable to a master’s degree.

MIS 798. Special Study (1-3) Cr/NC/RP
Prerequisite: Consent of staff; to be arranged with department chair and instructor.
Individual study. Maximum credit six units applicable to a master’s degree.

For additional courses applicable to the Master of Science degree in Information Systems see:
Business Administration 652. Statistical Analysis