

Management Information Systems

In the College of Business Administration

OFFICE: Student Services East 2411
TELEPHONE: 619-594-5316 / FAX: 619-594-3675

Faculty

Robert Pllice, Ph.D., Associate Professor of Management Information Systems, Chair of Department
Robert O. Briggs, Ph.D., Professor of Management Information Systems
Murray Jennex, Ph.D., Professor of Management Information Systems
Alexis Koster, Ph.D., Professor of Management Information Systems (Graduate Adviser)
John M. Penrose, Ph.D., Professor of Management Information Systems
Feraidoon Raafat, Ph.D., Professor of Management Information Systems (Graduate Adviser)
Bruce A. Reinig, Ph.D., Professor of Management Information Systems
Bongsik Shin, Ph.D., Professor of Management Information Systems (Graduate Adviser)
Yeongling Helio Yang, Ph.D., Professor of Management Information Systems
Theophilus Addo, Ph.D., Associate Professor of Management Information Systems
Annette C. Easton, Ph.D., Associate Professor of Management Information Systems

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 Applications Programming (3)
B A 625	Financial and Management Accounting (3)
B A 627	Marketing (3)
B A 628	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 Management Information Systems 797 (Research) 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	Enterprise Data Management (3)
MIS 687	Business Data Communications (3)
MIS 695	Business Systems Analysis and Design (3)
MIS 697	Project Planning and Development (3)
MIS 752	Seminar in Supply Chain and Enterprise Resource Planning (3)

IS Management (12 units)

MIS 688	Information Systems and Strategies in Organizations (3)
MIS 750	Strategic Project Management (3)
MIS 755	Information Systems Security Management (3)
MIS 790	Directed Readings in Management Information Systems (3) Cr/NC

OR

B A 799A	Thesis (3) Cr/NC/RP
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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. **Proof of completion of prerequisite required:** Copy of transcript.

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. **Proof of completion of prerequisite required:** Copy of transcript.

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. Enterprise Data Management (3)

Prerequisite: Classified graduate standing.

Database management technologies to host, secure, and manipulate enterprise data, information, and knowledge assets to create business value. Modeling tools for analyzing and specifying data requirements. (Formerly numbered Information and Decision Systems 686.)

MIS 687. Business Data Communications (3)

Prerequisite: Classified graduate standing.

Deployment and management of technologies for integrating resources within and between organizations through secure data communications capabilities. Data network topologies, including wired, wireless, mobile and cloud architectures. (Formerly numbered Information and Decision Systems 687.)

MIS 688. Information Systems and Strategies in Organizations (3)

Prerequisite: Classified graduate standing.

Managing information to create business value. Planning, organizing, and leading information systems initiatives. Relationship of data, information, and knowledge to strategic and operational decision making. Global aspects and ethical uses of information systems. (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. Business Systems Analysis and Design (3)

Prerequisite: Classified graduate standing.

Generating business value through analysis and design of information systems to solve problems and exploit opportunities. Feasibility studies, requirements definition, process and data modeling, development and implementation strategies for information systems. (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 adviser.

MIS 697. Project Planning and Development (3)

Prerequisite: Classified graduate standing.

Project development, planning, execution, and control for information systems. Information project development life cycle, structure project planning methodology, theories, techniques, and utilization of project management technologies. (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 Baldrige Quality Management (3)

Prerequisite: Business Administration 628.

Applications of lean principles, Six Sigma methodology, and Baldrige 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 623.

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 623.

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. Strategic Project Management (3)

Prerequisite: Business Administration 628.

Managing projects and programs to implement business strategies. Project selection, programs, and portfolios; project organization; resource conflict and resolution; stakeholder management; project team management; project risk assessment and mitigation. (Formerly numbered Information and Decision Systems 750.)

MIS 752. Seminar in Supply Chain and Enterprise Resource Planning (3)

Prerequisite: Business Administration 628.

Methodology, theory, and systems to plan and control supply chain and enterprise resources. Integrated processes of sales and operations planning, corporate accounting, materials requirement, procurement, capacity planning, and warehouse management in a simulated enterprise environment. (Formerly numbered Information and Decision Systems 752.)

MIS 753. Global Supply Chain Management (3)

Prerequisite: Classified graduate standing.

Advanced concepts, method, 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 628.

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 623. Statistical Analysis