

Master of Science in Information Systems

The Master of Science in Information Systems (MSIS) program is a 36 semester-hour applied graduate program. Building upon a core of six foundation courses and a capstone policy course, the MSIS program offers a number of specialization opportunities including: e-Business Systems, Information Security, and Systems Administration. Each of these specializations prepares graduates for employment within niches of the IT profession experiencing critical shortages of employees.

General Requirements for Admission to the MSIS Program

MSIS program admissions requires:

- Baccalaureate degree from an institution accredited in a manner accepted by Kennesaw State University. Admission will only be granted to students showing high promise of success in the program.
- Minimum cumulative undergraduate adjusted grade-point average of 2.75 on a 4.0 scale.
- Successful completion of required undergraduate course work (or fulfillment of preparatory knowledge clusters through professional work experience).
- Minimum score of 500 on the Graduate Management Admission Test (GMAT) with a minimum score of 30 in the verbal category, 30 in the quantitative category and 3.0 in the analytical writing category.
OR
- Minimum score of 400 in the verbal and 400 in the quantitative categories and 3.0 in the analytical writing category on the General Test of the Graduate Record Examination (GRE). (Applicants submitting scores for the GRE taken prior to October 1, 2002, must submit a minimum score of 400 in each of the verbal, quantitative, and analytical portions of the GRE.)
- Other criteria will be considered by the MSIS Admissions Committee for applicants, including:

-performance on previous computer science, information systems, and management coursework;

-GPA attained in other junior/senior level course work; certificates of attainment in computing-related training/self-study programs; -accomplishment in professional activities; -relevant work experience.

- A current résumé.
- A Statement of Interests that states the applicant's professional career goals. This Statement of Interests should indicate how the applicant plans to leverage the MSIS degree in their career plan.
- International applicants (see page 19).

Non-Degree Admission

The MS in Information Systems program does not admit students as non-degree, nor are non-degree students allowed to enroll in MS Information Systems courses.

Transfer Credit

A student may transfer up to six (6) semester hours of graduate courses taken at an accredited institution, providing the transfer hours are made prior to the last 30 hours of course work. Special hardship cases, such as job transfers, will be decided on an individual basis by the program director.

The transfer of credit for course work completed at another institution will be approved only under the following conditions:

- The course work was completed at a regionally accredited institution;
- A minimum grade of 'B' was received in the course;
- The course was restricted to graduate students only;
- The content of the course corresponds to that of a course required or permitted in the student's program at KSU; and
- The credit to be considered for transfer will not be more than five years old at the time the student enters.

Grades in Graduate Courses

Expectations for satisfactory graduate level student performance are detailed in Academic Policies section of this catalog.

Petition to Graduate

Each MSIS candidate must petition to graduate at least one semester prior to completion of program requirements. The student must contact the MSIS program office and schedule an appointment in order to complete the petition. Applicants should meet with the MSIS director and complete a graduation checklist prior to submitting their petition to the KSU's registrar's office.

MSIS Program of Study Preparatory Courses

The MSIS program coursework is developed on the assumption that students will be sufficiently prepared to enter the 8000-level courses. For those students who do not have sufficient preparatory knowledge, several alternatives exist:

- The student may take undergraduate courses in the fundamental technologies and functional areas of information systems. Should the student select this option, each course must be completed with a "B" or better, and may only be attempted twice at KSU;
- The student may take special MSIS-prep courses through Continuing Education scheduled each May.
- The student may submit a portfolio of work for evaluation for exempting one or more preparatory courses.

Preparatory Knowledge Clusters

Successful admission to the MSIS program requires:

- Basic knowledge of computer information systems, including proficiency in the use of common PC-based software environments
- Quantitative skills including algebra, calculus, and statistics
- Programming skills
- Familiarity with systems analysis and design methodologies
- Experience using relational or object-based database management systems

Master of Science in Information Systems

All MSIS graduates will complete the Core Requirements (24 hours) and four elective courses (12 hours). The Core Requirements include a capstone IS policy course, IS 8950, which includes a substantial IS project that enables students to summarize and apply their coursework to a real world system. The elective coursework may include a Collaborative Studies elective taken outside the department, at the approval of the program director. All coursework will focus on the integration of IS theory into practice.

Credit Hours

CORE REQUIREMENTS

24

The Informatics course must be completed in the student's first semester of coursework. The IS Policy and Strategy course should be completed in the student's final semester of work.

IS 8005	Informatics (Must be completed in student's first semester in MSIS)	3
IS 8020	Object-Oriented Software Dev. Methods & Technologies	3
IS 8040	Data Communication Theory and Practice	3
IS 8050	Information Systems Project Management Methods	3
IS 8060	Information Systems Dev. Methods and Technologies	3
IS 8070	Legal and Ethical Issues in Information Systems	3
IS 8080	Database Application Design and Implementation	3
IS 8950	Information Systems Policy and Strategy (Capstone Experience - should be taken in the students last semester in the MSIS)	3

ELECTIVES

12

Students must select four courses from the following list of approved electives. Students may select no more than three (3) hours of coursework from outside the department.

IS 8110	Information Security Administration (3)
IS 8112	Information Security Technologies (3)
IS 8120	Human-Computer Interface and Design (3)
IS 8130	Query Languages (3)
IS 8622	Network Implementation and Security (3)
IS 8625	Networking Protocols (3)
IS 8628	Internetworking Technologies (3)
IS 8722	e-Business Systems Strategy (3)
IS 8724	e-Business Technologies (3)
IS 8726	e-Business Systems Solutions (3)
IS 8822	Information Systems Integration (3)
IS 8825	Current Issues in Systems Administration (3)
IS 8826	Information Systems Services (3)
IS 8900	Special Topics in Information Systems (3)
IS 8910	Special Projects in Information Systems (3)
IS 8916	Cooperative Study in Information Systems (3)
IS 8918	Internship in Information Systems (3)

Collaborative Studies Elective: Students may select no more than three (3) hours of coursework from outside the department. Contact the MSIS program director for a listing of approved courses.

RECOMMENDED CONCENTRATIONS

Candidates for the Master of Science in Information Systems may coordinate their elective courses to form one of the following specialty concentrations.

I. e-Business Systems

The e-Business specialty concentration in the Master of Science in Information Systems program will meet the expanding demand for designers, developers, and managers of electronic business solutions. The new e-Business concentration consists of three courses: e-Business Systems Strategy, e-Business Technologies, and e-Business Systems Solutions. Each course focuses on specific aspects of how organizations are moving from traditional processes and physical products to electronic processes and digitized products. As a whole, the courses flow from analysis of business processes to core e-business technologies to implementation and management of e-business solutions. Into each course will also be woven an overview of the issues organizations encounter as they undertake e-business initiatives. As such, while the concentration is designed as a sequence, each course could be successfully undertaken piecemeal or out of order.

- IS 8722 e-Business Systems Strategy
 - IS 8724 e-Business Technologies
 - IS 8726 e-Business Systems Solutions
- An elective from the approved listing

II. Information Security

The graduate with a concentration in Information Security will complete coursework and projects emphasizing the protection of the confidentiality, integrity, and availability of information while in transmission, storage, or processing through the applications of policy, education, and training, and technology.

- IS 8110 Information Security Administration
 - IS 8112 Technical Aspects of Information Security
- and TWO from the following list:
- IS 8622 Network Implementation and Security
 - IS 8628 Internetworking Technologies
 - IS 8724 e-Business Technologies
- An elective from the approved listing

III. Systems Administration (Choose 12 hours from the following)

The graduate with a concentration in Systems Administration will complete coursework and projects in selection and implementation of information systems; effective negotiation and marketing of information technology including human resources; information technology organizations and relationships, database application development methods, documentation practices, inter operability issues, and training of end-users.

- IS 8822 Information Systems Administration
 - IS 8825 Current Issues in Systems Administration
 - IS 8826 Information Systems Services
- An elective from the approved listing

PROGRAM TOTAL: 36

MSIS Course Descriptions

IS 8005. Informatics. 3-0-3.

Prerequisite: Full admission to the MSIS program or permission of the program director.

This course will provide students with a study of the application of computer and statistical techniques to the management of information, and the science and art of turning data into information. This course requires the student to further refine technical research and authoring skills, report writing and presentations, computer-based statistical analyses and information organization and presentation. This course is required of all MSIS students in their first semester.

IS 8020. Object-Oriented Software Development Methods and Technologies. 3-0-3.

Prerequisite: Admission to the MSIS program or permission of the graduate program director.

Current technologies and practices of object-oriented software engineering. Topics include data structures, design optimization, file and stream processing, templates, inheritance and reusability.

IS 8040. Data Communication Theory and Practice. 3-0-3.

Prerequisite: Admission to the MSIS program or permission of the graduate program director.

Overview of the principles of data communication including protocols, communication software, switching, networks design and management practices, and network implementation projects.

IS 8050. Project Management Methods. 3-0-3.

Prerequisite: Admission to the MSIS program or permission of the graduate program director.

Application of project management principles to Information Systems projects. Topics include project planning and estimation techniques, management of JAD projects, budgeting, concurrent project management strategies, managing project relationship with IT customers, and controlling project risks. Project Management software will be used to facilitate team projects and project reporting.

IS 8060. Information Systems Development Methods and Technologies. 3-0-3.

Prerequisite: MSIS 8005.

This course examines the Systems Development Life Cycle and the technologies used to implement high-quality information systems. A variety of modeling techniques will be used by students to articulate client requirements and convert them into implementable specifications. Prototyping and methodology engineering will be covered.

IS 8070. Legal and Ethical Issues in Information Systems. 3-0-3.

Prerequisite: MSIS 8005.

This course is a case-based survey of contemporary legal and ethical issues faced by IS professionals. Topics include a review of applicable statutes and regulations that impact the IS organization. Students will conduct on-line research and explore ethical issues at the leading edge of the organization's technology frontiers.

IS 8080. Database Application Design and Implementation. 3-0-3.

Prerequisite: Admission to the MSIS program or permission of the graduate program director.

This course examines contemporary strategies for the design and implementation of applications supported by back-end database systems. Topics include data administration, data mining, user-interface design, reporting, data integrity issues, and distributed databases. Relational and object-oriented technologies are covered.

IS 8110. Information Security Administration. 3-0-3.

Prerequisite: Admission to the MSIS program or permission of the graduate program director.

Examination of current Standards of Due Care and Best Business Practices in Information Security. Includes examination of security technologies, methodologies and practices. Focus is on evaluation and selection of optimal security posture. Topics include evaluation of security models, risk assessment, threat analysis, organizational technology evaluation, security implementation, disaster recovery planning and security policy formulation and implementation.

IS 8112. Information Security Technologies. 3-0-3.

Prerequisite: IS 8040.

Detailed examinations of the application of technical controls to protect the confidentiality, integrity and availability of information and information assets. Includes tools, techniques and technologies in the protection of information from internal and external threats. Topics covered include: firewall configurations, hardening operating systems, intrusion detection systems and virtual private networks.

IS 8120. Human Computer Interface Design. 3-0-3.

Prerequisite: Admission to the MSIS program or permission of the graduate director.

The human-computer interface models the ways in which humans use and react to computer systems. Topics: help systems, interaction styles, visual design principles, user interface prototyping, and human factor analysis.

IS 8130. Query Languages. 3-0-3.

Prerequisite: IS 8080.

This course will provide students with in-depth understanding of SQL from the Oracle perspective. Additional topics will include SQL*Plus and PL/SQL. Objectives for the course will be organized around the Oracle certification exam for SQL and PL/SQL. The class will include a hands-on lab.

IS 8622. Network Implementation and Security. 3-0-3.

Prerequisite: IS 8040.

Design, implementation and security of small-scale computer networks that support the organization's applications. Contemporary commercial systems will be evaluated and installed. Administration, maintenance, and security issues are explored.

IS 8625. Networking Protocols. 3-0-3.

Prerequisite: IS 8040.

This course provides a detailed examination of networking protocols using TCP/IP protocol stack as the primary instructional tool. It also addresses the OSI reference model. Topics include the basic functions of the seven layers of the OSI model, Application layer functions, TCP and UDP data transfer, IP addressing and subnetting, and associated support functions (DNS, DHCP, ICMP etc). Additional protocols: IPXSPX, NetBUI will be examined.

IS 8628. Internetworking Technologies. 3-0-3.

Prerequisite: IS 8040.

This course examines the integration of Local Area Network (LAN) and Wide Area Network (WAN) networking environments. The course also addresses key protocols, hardware, software and networking components. Topics include: router and switch operations, Internet gateway and firewall configuration, client/server systems and internetworking security.

IS 8722. e-Business Systems Strategy. 3-0-3.

Prerequisite: Admission to the MSIS program or permission of the graduate program director.

This course focuses on business process redesign and change management in the context of e-business. Topics include impact of e-business on business models, channel relationships and the value chain, integration of emerging technologies with legacy systems, functional and inter-organizational integration, and transaction cost issues. Applications include supply and selling chain management, customer relation management, enterprise resource planning, e-procurement, and knowledge tone applications.

IS 8724. e-Business Technologies. 3-0-3.

Prerequisite: Admission to the MSIS program or permission of the graduate program director.

This course focuses on core e-business technologies. Topics include risk management, Internet protocols and security standards, cryptography and authentication, firewalls, electronic payment systems and intelligent agents. Students will conduct an analysis of infrastructure components from functional and management perspectives.

IS 8726. e-Business Systems Solution. 3-0-3.

Prerequisite: Admission to the MSIS program or permission of the graduate program director.

This course focuses on analysis, design, development, and deployment of e-business solutions. Topics include World Wide Web site design, application development structures such as Java, ColdFusion, and CGI, Web database integration, hypermedia development tools, and implementation strategies.

IS 8822. Information Systems Integration. 3-0-3.

Prerequisite: Admission to the MSIS program or permission of the graduate program director.

Modern information systems contain many purchased components, which must be selected, integrated, tested, and installed. This course addresses the skills required to develop system RFPs, evaluate and manage contracts and contractors, testing methodologies, installation planning, and outsourcing.

IS 8825. Current Issues in Systems Administration. 3-0-3.

Prerequisite: Admission to the MSIS program or permission of the graduate program director.

The topics covered in this subject vary to maintain currency with current thinking and discussion in the information systems profession. Students will choose or be given topics to be investigated either individually or in groups, and will perform library, on-line, and field research, prepare and deliver reports and presentations, and analyze and critically evaluate the reports and presentations of other students.

IS 8826. Information Technology Services. 3-0-3.

Prerequisite: Admission to the MSIS program or permission of the graduate program director.

Design and management of the service functions performed by the Information Systems organization. Topics include: Managing help desks, customer support, training end users, developing professional development programs for IS employees, documentation management, and marketing IT products. Internal and external clients are considered.

IS 8900. Special Topics in Information Systems. 1 to 3.

Prerequisite: Must be approved by advisor and graduate program director.

Exploration of selected contemporary topics of interest to the student and sponsoring faculty. Can be repeated for credit.

IS 8910. Special Projects in Information Systems. 1 to 3.

Prerequisite: Must be approved by advisor and graduate program director.

Special projects and/or thesis option for students who wish to pursue advanced work on a particular subject in a specialized area. Can be repeated for credit.

IS 8916. Cooperative Education. 1 to 3.

Prerequisite: Must be approved by graduate program director.

IS 8918. Internship. 1 to 3.

Prerequisite: Must be approved by graduate program director.

IS 8950. Information Systems Policy and Strategy. 3-0-3.

Prerequisite: IS 8005.

A capstone course, which integrates the program's coursework into comprehensive, IS policies and procedures, which support the organization's mission. Students will review and evaluate actual corporate IS strategies in a case-study format.

