

# MANAGEMENT INFORMATION SYSTEMS, M.S.

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**Adjunct Faculty** Lawrence Dale, Neil Matkin

**Degrees offered:** Master of Science, Undergraduate Minor

## DEPARTMENTAL GOALS AND OBJECTIVES

The goal of the MIS program is to prepare students for challenging positions in the application of information technology to solving business problems. Specific objectives of the program are 1) to provide students with the analytical and practical frameworks and methodologies necessary to analyze, design, implement, and manage complex information systems in contemporary organizational structures, 2) to provide knowledge of the principles necessary for understanding basic computer hardware and software systems to ensure the data quality, transmission, processing, and storage necessary to facilitate organizational decision making and general operations, 3) to enable students to develop competencies in applying systems analysis and design strategies and techniques in realistic marketplace environ-

ments, and 4) to provide a balance between technical and organizational knowledge for a variety of professional organizations.

The master of science degree in management information systems may be earned online, on campus, or through a combination of online and on-campus courses.

## ADVISING

New students must contact the department for initial advising to plan a program of study that reflects their interests and satisfies degree requirements.

**Contact:** Information about the MIS program is available at (217) 206-6067. Information can also be requested at [mis@uis.edu](mailto:mis@uis.edu).

## THE MASTER'S DEGREE

The management information systems program is designed to provide the professional administrator/man-

ager a balance between technical expertise and organizational knowledge in the application of information technology to solving business problems.

## ENTRANCE REQUIREMENTS

Applicants must complete the following (or equivalent) coursework: introductory courses in managerial and financial accounting (or ACC 315), one semester of production/operations management (such as BUS 322 Operations Management), one semester of statistics (such as ECO 313 Statistics for Business and Economics), one semester of college algebra or mathematics, and competency in a structured high-level programming language such as Java, C++, Visual Basic, COBOL, C, Fortran, etc., either through coursework, such as MIS 322 Structured Programming, or practical experience. All students applying for admission to the MIS department are expected to submit a Graduate Management Admissions Test (GMAT) score or a Graduate Record Exam (GRE) score. Students

may take their required prerequisite courses while they are waiting to submit either of these test scores.

### COMMUNICATION SKILLS

Entering students are required to pass a diagnostic writing examination administered by the Center for Teaching and Learning. Students with deficiencies in writing may be required to take ENG 375 Expository Writing or ENG 474 Professional and Technical Writing.

### DEGREE REQUIREMENTS

MIS 502 Technical Foundations of Information Systems	4 Hrs.
MIS 513 Management Information Systems	4 Hrs.
MIS 523 Managerial Decision Support Systems <i>or</i>	
MIS 531 Strategic Decision Support Systems	4 Hrs.
*MIS 542 Management of Database Systems <i>or</i>	
CSC 572 Advanced Database Concepts	4 Hrs.
*MIS 552 Systems Analysis and Design	4 Hrs.
MIS 564 Telecommunications	4 Hrs.
MIS 573 Project Management	4 Hrs.
One approved non-MIS elective (see important notes below)	4 Hrs.
One approved course in organizational behavior (see important notes below)	4 Hrs.

MIS 583 Graduate Project and Seminar <i>or</i>	
MIS 584 MIS Capstone	4 Hrs.
**One approved MIS elective	4 Hrs.
<i>or</i>	
MIS 585 MIS Thesis and Seminar	8 Hrs.
Total	44 Hrs.

\*Students must take MIS 552 before MIS 542.  
 \*\*Those who write a thesis are not required to complete the MIS elective.

### Important Notes:

*Electives:* MIS 571 Electronic Commerce: Business Uses of the Internet and MIS 574 Marketing on the Internet may be taken either as MIS electives or non-MIS electives.

*Organizational Behavior:* Students may take BUS 541 Organizational Behavior, PAD 502 Organization Dynamics, MIS 575 Technology Management and Organizational Transformation, or an approved alternative. Students who have equivalent experience in all but MIS 583, MIS 584, or MIS 585 may substitute an approved elective but must complete 44 hours for the degree.

### GRADUATION REQUIREMENTS

1. Selection or assignment of a management information systems faculty adviser.

2. Fulfillment of all the prerequisites for the master's degree in MIS.  
 3. A minimum B average (3.00) in MIS 502, MIS 513, and MIS 523 or MIS 531.

At least 24 hours of the courses required for the degree must be completed following matriculation into the department.

### CLOSURE REQUIREMENT

All MIS graduates must complete MIS 583 Graduate Project and Seminar (4 hours) or MIS 584 MIS Capstone (4 hours) or MIS 585 MIS Thesis and Seminar (8 hours). The nature of the project is contingent on the individual's career goals and may or may not include a practicum experience. Projects may involve, for example, design/analysis of an information system for an existing organizational need; development of one or more databases for a potential organizational need; analysis of managerial needs or uses for information that is accessible in an existing database; or analysis, design, security, and management of networks. If the project/thesis/capstone is not completed during these initial four or eight hours, students must register for one credit hour of MIS 583/585 on an audit basis for *each* semester the project/thesis remains incomplete. UIS policy

precludes students who are not registered from using campus resources. If a leave of absence is requested and approved, continuous registration is not required. Failure to obtain a leave of absence will require retroactive registration of one credit hour per semester.

## GRADING POLICY

MIS department majors must maintain a minimum 3.00 grade-point average in all MIS degree requirements. Two successive semesters of probation may lead to a one-year suspension. One C (2.00) in an MIS course is acceptable. An MIS master's degree candidate may not take any of the 44 semester hours required for the degree on a credit/no credit or pass/fail basis. A grade of C (2.00) is not acceptable for a project (MIS 583), MIS capstone (MIS 584), or a thesis (MIS 585).


## UNDERGRADUATE MIS MINOR

To earn an undergraduate minor in management information systems, students must complete a minimum of 14 semester hours, at least 11 hours of which must be upper-division coursework taken at the University of Illinois at Springfield. Prerequisites include proficiency in a spreadsheet and/or a database pack-

age or completion of CSC 317 Software Packages. Required courses include:

ACC 311	Administrative Uses of Accounting (or two semesters of elementary accounting) <i>or</i>	
ECO 315	Economics for Administration <i>or</i>	
MGT 310	Managing Organizational Behavior	3-4 Hrs.
MIS 352	Principles of Management Information Systems	3 Hrs.
MIS 423	Decision Support Systems	4 Hrs.
MIS 424	End User Systems Development and Implementation	4 Hrs.
	Total	14-15 Hrs.

## COURSE DESCRIPTIONS

 *Course available online; may also be available on campus. Refer to the current course schedule for further information.*

### MIS 352 Principles of Management Information Systems (3 Hrs.)

*(CBM Core Course)*

Introduces students to fundamental concepts in management information systems (MIS), the role of computers in MIS, and some details of how the computer functions. Topics include various types of information systems, use of information by management, and information systems

applications. The students will also be exposed to the application of MIS technologies in the development of business solutions through end user computing and topics such as computer hardware and software, operating systems, and security. Access to the Internet is required.

### MIS 423 Decision Support Systems (4 Hrs.)


Provides non-majors an opportunity to develop personal computer skills that will help support organizational decisionmaking. Students analyze real world examples of decision support systems and design small systems to support their own decision-making activities associated with using a computerized business simulation. Computer lab time required. Access to the Internet is required. Prerequisite: MIS 352.

### MIS 424 End User Systems Development and Implementation (4 Hrs.)

Establishes a foundation for developing information systems in organizations. Fundamental concepts considered include system analysis and design, application and development of databases, troubleshooting problems, and the behavioral considerations for implementing information systems. Access to the Internet is required. Prerequisite: MIS 423.

### MIS 502 Technical Foundations of Information Systems (4 Hrs.)

Introduces details of computer hardware and software technologies necessary for information systems professionals. Particular hardware architectures (CISC, RISC), operating systems fundamentals, and concepts of object



orientation will be described. Programming skills in an object-oriented language will be developed. Access to the Internet is required. Prerequisite: Proficiency or coursework in a high level programming language such as Java, C++ , Visual Basic, COBOL , C, Fortran, etc., or MIS 322.

 **MIS 513 Management Information Systems (4 Hrs.)**

Provides a foundation for understanding and analyzing information in organizations. Fundamental concepts of systems and information are covered. Topics include computer-based information systems, user requirements, and analysis and specification of systems requirements, life cycle, and security. Access to the Internet is required. Open to non-majors.

**MIS 523 Managerial Decision Support Systems (4 Hrs.)**

Covers a variety of related decision support systems topics. Gives participants a flexible definition of DSS technology and introduces some principles of DSS design and use. Equips students with fundamental concepts and techniques of expert systems. Special emphasis is placed on microcomputer-based decision support systems. Access to the Internet is required. Prerequisites: MIS 513 or equivalent, and one semester of production operations management.

 **MIS 531 Strategic Decision Support Systems (4 Hrs.)**

Theoretical and practical aspects of collecting and interpreting strategic information and using the results in or-

ganizational decision making. Includes computerized and noncomputerized sources of external data, selection and reprocessing of internal data, alternative means of storage and retrieval, and effective use of information in dynamic strategic decision processes. Access to the Internet is required. Open to non-majors.

 **MIS 542 Management of Database Systems (4 Hrs.)**

The management of database systems within organizational settings. Includes features of database management systems, various data models, database schema design, normalization, relational algebra, relational calculus, SQL, query optimization, and various indexing techniques. Access to the Internet is required. Prerequisites: MIS 502, MIS 552.

 **MIS 552 Systems Analysis and Design (4 Hrs.)**

System life cycles, including planning requirements, analysis, components acquisition, installation, maintenance, and enhancement; emphasis on distributed systems, prototyping, and CASE tools. Individual and/or team project involving reports and walk-throughs. Access to the Internet is required. Prerequisite: MIS 502, or equivalent.

 **MIS 561 Competitive Information Systems (4 Hrs.)**

Explores the use of modern technology, including the Internet, to gain a competitive edge in the marketplace. Within the context of the need for having an adaptive or-

ganization, includes the examination of modern theories of competitive strategy, gathering and use of competitive intelligence, the role of the sales force in competitive strategy formulation and execution, and the ethics of competitive intelligence. Access to the Internet required. Open to non-majors. Prerequisite: Graduate standing.

 **MIS 564 Telecommunications (4 Hrs.)**

The principles and applications of telecommunications are emphasized. Technical and managerial aspects of telecommunications within a business are covered. International standardization efforts are introduced, and the development of local and public networks are compared. LAN and PBX standards, implementations, and performance are compared. Other topics include comparison between voice and data traffic and between analog and digital transmission methods and integration of voice, data, facsimile, and video. Access to the Internet is required. Prerequisite: MIS 502.

**MIS 570 Topics in Management Information Systems (1 to 4 Hrs.)**

An advanced topic from the current literature of MIS. May be repeated for an indefinite number of hours, but particular topics must differ. Access to the Internet is required.

 **MIS 571 Electronic Commerce: Business Uses of the Internet (4 Hrs.)**

Tools and technologies needed for electronic commerce are reviewed. Business opportunities, challenges, and strategies for use of the information superhighway will be explored, as will strategies and vision on how to leverage

the emerging national and global information infrastructure. Other topics include the impact of the emerging electronic market and commerce reengineering in today's corporations. Access to the Internet is required. Prerequisite: Graduate standing and familiarity with a computer and the Internet.

### **MIS 572 Neural Networks and Business Applications (4 Hrs.)**

Study of neural networks technology and exploration of its potential applications in business and management through hands-on class projects. Neural network tools such as Brainmaker (for Windows) and Neural Ware (for DOS). Topics include biological neurons and connections, expert systems vs. neural networks, fuzzy logic, machine learning, perceptron, back propagation, training and testing techniques, and others. Access to the Internet is required. Prerequisite: Graduate standing and a college-level statistics course.

### **MIS 573 Project Management (4 Hrs.)**

Managing projects within an organizational context, including the processes related to initiating, planning, executing, controlling, reporting, and closing a project. Covers topics such as project integration, scope, time, cost, quality control, risk management, and earned value management. Students will be exposed to knowledge base needed for Project Management certification. Access to the Internet is required. Open to non-MIS majors. Prerequisite: BUS 322, or equivalent, or permission of instructor.

### **MIS 574 Marketing on the Internet (4 Hrs.)**

Offered only online as an MIS elective. Focuses on how the Internet is affecting traditional marketing activities and functions such as market segmentation, the marketing mix, and global marketing. Includes consideration of new Internet marketing models in business-to-consumer marketing (B2C) and business-to-business (B2B) marketing, with particular emphasis on advertising on the Internet. Open to graduate non-majors, if space is available, with permission of the instructor and their advisers. MBA students may not use this course as a substitute for BUS 512. Access to the Internet is required. Prerequisite: Graduate standing.

### **MIS 575 Technology Management and Organizational Transformation (4 Hrs.)**

Provides participants with knowledge and skills in the concepts of managing technological change within for profit and not-for-profit types of organizations. Examines how information technology makes possible new business models, new organizational structures, and new management processes. Presents different approaches and current practices in dealing with the organizational and human aspects of effective technology transition initiatives. Topics covered include change management, new information technology-based business models, planning for technology transition, managing change agents, and managerial decisions about information technology. Major emphasis on discussion of current situations faced by today's organizations and extended case studies. Access to the Internet is re-

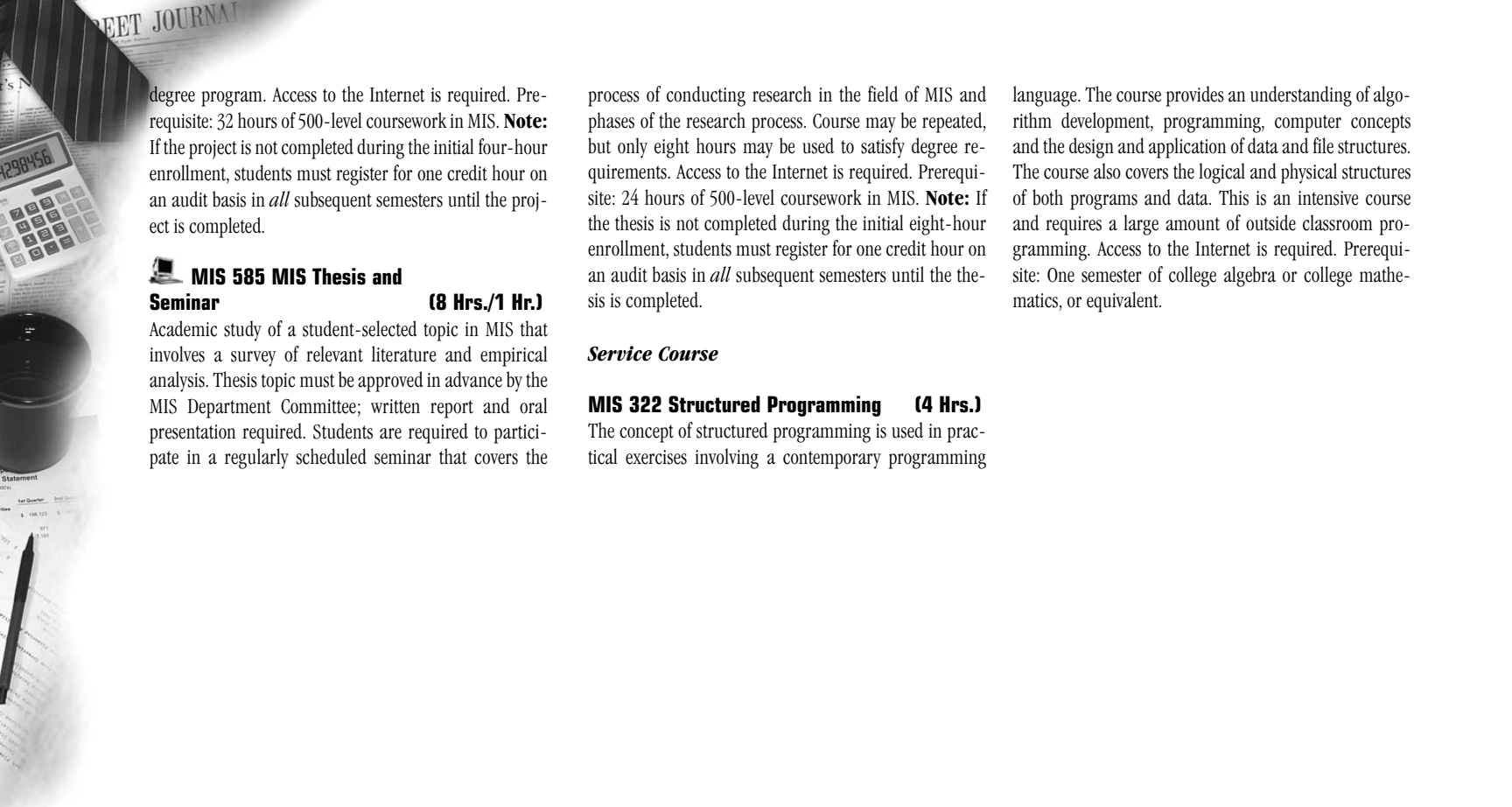
quired. Prerequisite: MIS 513, or equivalent, or permission of instructor.

### **MIS 583 Graduate Project and Seminar (4 Hrs./1 Hr.)**


Closure experience involving an advanced problem or need in MIS; may or may not involve a practicum. For project examples, see "Closure Requirement" above. Project topic must be approved in advance by the MIS Department Committee; written report and oral presentation required. Students are required to participate in a regularly scheduled seminar that covers the process of project design and methods in MIS. Course may be repeated, but only four hours may be used to satisfy degree requirements. Access to the Internet is required. Prerequisite: 24 hours of 500 level coursework in MIS. **Note:** If the project is not completed during the initial four-hour enrollment, students must register for one credit hour on an audit basis in *all* subsequent semesters until the project is completed.

### **MIS 584 MIS Capstone (4 Hrs./1Hr.)**

Covers current topics in MIS including issues related to areas of business environment, technology, globalization, politics, ethics, legal, regulatory, and demographic diversity. The role of MIS in those areas will be addressed. In each semester, these selected topics may not be the same depending on what topics are current and emerging. Assignments include paper critiques, group discussions, and a final paper or project. This course is primarily for MIS majors and should be taken in the last semester of the MIS



degree program. Access to the Internet is required. Prerequisite: 32 hours of 500-level coursework in MIS. **Note:** If the project is not completed during the initial four-hour enrollment, students must register for one credit hour on an audit basis in *all* subsequent semesters until the project is completed.

 **MIS 585 MIS Thesis and Seminar (8 Hrs./1 Hr.)**

Academic study of a student-selected topic in MIS that involves a survey of relevant literature and empirical analysis. Thesis topic must be approved in advance by the MIS Department Committee; written report and oral presentation required. Students are required to participate in a regularly scheduled seminar that covers the

process of conducting research in the field of MIS and phases of the research process. Course may be repeated, but only eight hours may be used to satisfy degree requirements. Access to the Internet is required. Prerequisite: 24 hours of 500-level coursework in MIS. **Note:** If the thesis is not completed during the initial eight-hour enrollment, students must register for one credit hour on an audit basis in *all* subsequent semesters until the thesis is completed.

***Service Course***

**MIS 322 Structured Programming (4 Hrs.)**

The concept of structured programming is used in practical exercises involving a contemporary programming

language. The course provides an understanding of algorithm development, programming, computer concepts and the design and application of data and file structures. The course also covers the logical and physical structures of both programs and data. This is an intensive course and requires a large amount of outside classroom programming. Access to the Internet is required. Prerequisite: One semester of college algebra or college mathematics, or equivalent.