

Management Information Systems

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Into which MS degree will this Graduate Certificate convert?

MBA

In what industries might a holder of this Graduate Certificate find employment?

Information Technology

In what job titles might a holder of this Certificate fit?

Director of IT, CIO, Technology Manager

Is this certificate fully available online (all courses)?

No

Description of certificate program

The courses in the MIS certificate are focused on the strategic value of information in business. They sharpen the strategic focus of the MBA degree by highlighting the role of information management in gaining competitive advantage through improved business process management and enhanced business intelligence systems. Professionals who wish to take a leadership role in the management of information in organizations. MIS managers play a critical role in planning, building and maintaining the information systems that enable the global, networked organization.

Courses in the certificate. **Select 4 from the following:**

IT 601: Web Systems Development - Open source web development through an intensive hands-on project, applying real-world problem-solving skills to meeting information systems requirements. Students will learn Web development principles, as well as professionally relevant skills including industry standards, conventions, and procedures within large-scale programming projects. Also covered are the communication tools, technologies, and practices that individuals use to coordinate and collaborate within the open source software development community.

IS 631: Enterprise Database Management - Understanding of the issues as well as hands-on experience in managing database systems as an essential organizational resource. Students will obtain a conceptual foundation of database design and explore the implications for organizational database usage. Students also will gain experience with enterprise database management systems, such as Oracle. This course introduces the design and management of enterprise-wide database systems. Topics include: (1) data modeling and database design; (2) database implementation with SQL; (3) database access standards for enterprise database systems; (4) multidimensional databases, online analytic processing (OLAP) and data warehousing, customer relationship management (CRM); and (5) web-based enterprise database systems.

IS 663 Systems Analysis & Design - This course develops the skills necessary to analyze, design and manage the development of effective enterprise-scale information systems solutions incorporating contemporary methods and effective organizational and global project management practices. It focuses on technical business systems analysis and design techniques, and covers key software engineering principles, methods and frameworks, including process models, agile and lean principles, project and risk management, estimation, requirements elicitation and analysis, modeling, system and software architecture, design patterns, and quality systems. Students will actively participate in discussions, review selected articles, participate in team exercises and collaborate on projects involving analysis and prototyping of applications addressing real-world problems and integrating current and emerging technologies.

IS 665: Data Analytics for Info Systems - A graduate level introduction to data analysis, probability and statistics from an information systems perspective, including many of the techniques that are most relevant to the profession of Data Scientist for business, data and web analytics, as well as current data sets. We will learn and conduct Python, MATLAB and R based manipulation of data. Course topics include the rudiments of probability and random variables, estimation, special distribution and sampling, Markov processes, hypothesis testing, graphics and visualization.

IS 678: IT Service Management - Introduction to IT service management, a set of specialized organizational capabilities for enabling value for customers in the form of IT services. ITIL, a globally recognized framework of best practices for IT service management is covered in some detail, along with other approaches for IT service management. The course presents ITIL key concepts, the ITIL service value system, the service value chain, the four dimensions of service management, ITIL guiding principles and ITIL management practices. ITIL is presented in the context of a specific organizational services domain.

IS 684: Business Process Innovation - A balanced approach to business process innovation (BPI) that includes both incremental improvement and re-engineering. It specifically examines the concept of a service-oriented architecture (SOA) and the use of web services as a way to enable scalable and adaptive business processes. Students will learn how to develop process maps using the Business Process Modeling Notation (BPMN) and design process improvements to achieve efficiency, effectiveness, compliance and agility objectives. The focus of the course is on ways in which information technology can be used to manage, transform and improve business processes.

MIS 648: Decision Support Systems for Managers - Covers the use of decision support systems to support management decision making in a real world environment. Topics include: establishing and measuring decision support systems success criteria, software tools, model management, elements of artificial intelligence, and statistics. Justification, design, and use of decision support systems.

MGMT 630: Decision Analysis - introduction to the methodology of decision analysis using computer-based techniques and systems analysis. Introduces concepts of modeling, probability, and choice. Addresses the philosophy and detailed methods involved in decision analysis. Methods are applied to address routine and special business decisions.

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MGMT 635: Data Mining and Analysis - This course provides an introduction to data mining with an emphasis on large scale databases as a source of knowledge generation and competitive advantage. Specific topics include: framing research questions; data modeling; inferential data mining techniques; and evaluation and deployment of data mining systems.

EM 636: Global Project Management - Introduction to concepts of project management and techniques for planning and controlling of resources to accomplish specific project goals. While the focus is on technically oriented projects, the principles discussed are applicable to the management of any project. Topics include time, cost considerations, cash flow forecasting, financial and performance control, documentation.

MGMT 650: Knowledge Management - Students will learn the principles of the knowledge management process. At the end of the course, students will have a comprehensive framework for designing and implementing a successful knowledge management effort and be able to assist in the development of knowledge.

IS 688: Web Mining - Web mining aims to discover useful information and knowledge from the Web hyperlink structure, page contents and usage logs. It has direct applications in e-commerce, Web analytics, information retrieval/filtering, personalization, and recommender systems. Employees knowledgeable about Web mining techniques and their applications are highly sought by major Web companies such as Google, Amazon, Yahoo, MSN and others who need to understand user behavior and utilize discovered patterns from terabytes of user profile data to design more intelligent applications. The primary focus of this course is on Web usage mining and its applications to business intelligence and biomedical domains. We learn techniques from machine learning, data mining, text mining, and databases to extract useful knowledge from the Web and other unstructured/semistructured, hypertextual, distributed information repositories.

These courses are already part of the MBA program concentration for MIS.