

Management Information Systems (MIS)

Course information contained within the Bulletin is accurate at the time of publication in June 2025 but is subject to change. For the most up-to-date course information, please refer to the Course Catalog.

MIS 5001. Information Technology Management. 3 Credit Hours.

Organizations that strategically select, manage, and deploy digital business models prosper in the global economy. Students will use systems and business process thinking to create and analyze strategies for technology-enabled organizational and industry transformation. They will propose innovative solutions for new and existing business initiatives to leverage enterprise, consumer, and social technologies.

Repeatability: This course may not be repeated for additional credits.

MIS 5101. Business Intelligence. 3 Credit Hours.

Data is a core building block of modern organizations; transforming data into information and knowledge enables firms to compete effectively. In this course, students learn best practices for acquiring, assessing, and analyzing data to solve business problems. Students also learn the technologies that comprise an organization's information infrastructure. Students gain hands-on experience with these concepts through case studies and exercises utilizing various hands on access to technology. Students will also gain skills in understanding the principles of transaction-oriented data, and how information is stored and retrieved from a data source, apply data mining and business intelligence techniques to solve specific business problems, communicate analysis results back to management for ongoing quality assurance and process improvement, understand and select appropriate data visualization techniques to effectively communicate results.

Repeatability: This course may not be repeated for additional credits.

MIS 5102. Process Improvement and Innovation. 3 Credit Hours.

An information system is only valuable to an organization when it enables and supports a useful business process. Students learn to assess, design, and analyze processes that foster innovation. Core concepts include designing effective solutions, identifying metrics for assessment, and communicating plans to management. Students apply these skills through analysis of business problems for actual firms. Throughout the course, students will gain a deeper understanding of the role of process in the functioning of an organization and how to innovate around that process by redesigning workflows and matching requirements with organizational systems. Students will also be able to identify key stakeholders and learn the fundamentals of project management.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites: Minimum grade of B- in (MIS 5001, MIS 5302, or MIS 5402)

MIS 5105. Emerging Technologies. 3 Credit Hours.

This seminar reviews emerging technologies that will prepare students to effectively leverage new technologies to create business opportunities through innovation. The specific topic of this course varies by semester to accommodate new trends and technologies.

Repeatability: This course may not be repeated for additional credits.

MIS 5108. Digital Business Strategy. 3 Credit Hours.

Information Technology leadership is a critical function in organizations. This course teaches the skills of effective technology strategists. Students develop the business case for new technology initiatives, evaluate the success of existing initiatives and develop plans for technology-enabled organizational change. Through a series of case study analyses, students develop technological and organizational skills required of IT leaders.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites: Minimum grade of B- in (MIS 5001, MIS 5302, or MIS 5402)

MIS 5109. User Experience Design. 3 Credit Hours.

Today the user experience is the whole system; it is the interface and the experiences that define success, the code and business model are often secondary. Users only bother with activities that are obvious, simple, and pleasing. Perhaps the most challenging and interesting part of digital is the user experience (UX). This course focuses on understanding, evaluating, and designing user experiences. In the context of practical projects, we will learn the human, social, organizational, business model, and technical aspects of UX design. The goals of this course include understanding the role of usability and design principles, evaluating user experiences, and building a complete user experience using innovation to achieve the UX goals.

Repeatability: This course may not be repeated for additional credits.

MIS 5112. Business Design and Innovation. 3 Credit Hours.

Digital business opportunities are no longer limited to the technology itself; they also include the experiences and ecosystems around them. To succeed in this new economy, today's leaders require a broad set of skills that incorporate creative thinking and innovation. Students will learn the tools and methods of Business Design to address real-world business problems. They will apply design inquiry techniques to craft original solutions to a series of practical scenarios.

Repeatability: This course may not be repeated for additional credits.

MIS 5121. Enterprise Resource Planning Systems. 3 Credit Hours.

This course introduces students to the essential concepts of an Enterprise Resource Planning (ERP) system including business processes, security, audit, and control functions. The course looks at how a business' key transactions are executed and how business process operational risks are accounted for and controlled in an ERP environment. Information system and accounting controls to assure confidentiality, integrity and reliability are examined. Finally, the course looks at how transaction processing data is transformed into data for management analysis and financial reporting.

Repeatability: This course may not be repeated for additional credits.

MIS 5122. Enterprise Architecture for IT Auditors. 3 Credit Hours.

This course teaches students about the technology concepts and components that are critical for IT auditors to understand. It uses an enterprise architecture framework to introduce students to business data, computer applications and infrastructure necessary to supporting operational business processes. The course introduces students to computer networks, operating systems, servers and applications with a focus on using the command line to audit and identify vulnerabilities.

Repeatability: This course may not be repeated for additional credits.

MIS 5170. Special Topics. 1 to 6 Credit Hour.

Repeatability: This course may be repeated for additional credit.

MIS 5182. Independent Study. 1 to 6 Credit Hour.

Repeatability: This course may be repeated for additional credit.

MIS 5190. Special Topics in MIS. 1 to 6 Credit Hour.

Special topics in current developments in the field of information systems are covered.

Repeatability: This course may be repeated for additional credit.

MIS 5201. IT Audit Process. 3 Credit Hours.

This course introduces students to the essential concepts of IT auditing. Students will learn standards and guidelines for performing an IT audit. Topics will include concepts of internal controls. Students will learn to plan and manage an audit as well as how to report on evidence collected during the audit.

Repeatability: This course may not be repeated for additional credits.

MIS 5202. IT Governance. 3 Credit Hours.

This course examines the principles of IT governance and management. Understanding IT governance and operations are an integral part of enterprise governance. Effective governance and management of IT consist of leadership, organizational structures and processes that ensure that IT operations sustain and extends the enterprise strategy and objectives. Topics includes IT frameworks, standards, policies, procedures, organizational structures, enterprise architecture, risk management, IT and cyber security management, protection of assets, maturity models, laws, regulations, IT resource management, IT service acquisition and management, quality management and IT performance management. Student will have hands-on experience in exercising IT governance and management and apply topics learned to auditing and risk assessing real organization's policy, procedures, structure and processes.

Repeatability: This course may not be repeated for additional credits.

MIS 5203. Systems and Infrastructure Lifecycle Management 1. 3 Credit Hours.

This course examines how an organization plans, designs, builds, implements and maintains information systems within an environment of IT risk management and control. Topics include information feasibility and business case assessment, requirements analysis, system design, project planning, IT risk management, development versus acquisition tradeoffs, maintenance support and return of investment analysis to assure technologies deliver value and support the organization's business objectives.

Repeatability: This course may not be repeated for additional credits.

MIS 5205. IT Service Delivery and Support. 3 Credit Hours.

Learn how the operational aspects of an IT organization deliver on the value proposition of the organization. Learn about the technical infrastructure and how this infrastructure provides a reliable and secure platform for applications. Learn about service center management and how these teams are utilized to deliver value to the organization.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites: Minimum grade of B- in MIS 5201.

MIS 5206. Protection of Information Assets. 3 Credit Hours.

Information is an organization's most precious asset. Inadvertent disclosure of sensitive information, loss of data integrity and availability of information can have significant operational and financial impact on the organization. In this course students learn to apply COBIT and the NIST Risk Management Framework to recognize and manage risks facing information assets of the organization through mitigating controls including logical, physical, and administrative IT security; and business continuity, disaster recovery and contingency strategies.

Repeatability: This course may not be repeated for additional credits.

MIS 5208. Data Analytics for IT Auditors. 3 Credit Hours.

This course introduces students to the use of data in the detection and prevention of financial fraud and the detection of cybersecurity threats and attacks. This class relies heavily on data analytics to examine datasets produced by audit and security controls (for instance, network log files). Basic data analysis concepts are presented and then applied to security or audit problems. Audit-specific and more general business intelligence tools will be used to help students better understand the analytics process.

Repeatability: This course may not be repeated for additional credits.

MIS 5211. Ethical Hacking. 3 Credit Hours.

This course introduces students to the hacking strategies and tactics used by ethical or "White Hat" hackers. Methods of vulnerability exploitation to be used primarily in the process of Security Penetration will be explored in theory and in hands on exercises. The course will require simple programming using Open Source scripting languages and hacking tool kits. For that reason some knowledge of and experience with computer programming is required.

Repeatability: This course may not be repeated for additional credits.

MIS 5212. Penetration Testing. 3 Credit Hours.

This course introduces students to Penetration Testing. Methods of vulnerability assessment and exploitation are examined as a means of identifying areas requiring improved security and recommended changes. The ethical, business governance and legal implications of penetration testing are examined. Specific techniques are examined in detail with the intent of giving the students a practical understanding of how Penetration Tests are conducted and laboratory-based experience in their actual conduct.

Repeatability: This course may not be repeated for additional credits.

MIS 5213. Intrusion Detection & Response. 3 Credit Hours.

While all businesses work to be as secure as possible, no organization can be completely secure. Preventing attacks, quickly identifying successful attacks, detecting advanced persistent threats and monitoring systems activity in order to deter intrusions can result in significant business benefit. This course examines the variety of tools and techniques used to do this work. This course also examines the process and procedures required for an effective intrusion detection and response through preparation, monitoring, eradication, and compliance.

Repeatability: This course may not be repeated for additional credits.

MIS 5214. Security Architecture. 3 Credit Hours.

Examines the methodology by which an organization aligns its business strategy with its security operations. Both the current and desired future states of the business' security efforts are described so that resources can be directed to the security efforts most needed to support the business.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites: Minimum grade of B- in MIS 5206.

MIS 5215. Operating System Security. 3 Credit Hours.

This course introduces students to operating system security and tools to secure and audit an organization's computer operating systems. Methods of securing operating systems are explored in theory and through hands-on exercises. The first part of the course focuses on processes used to secure the Microsoft Windows operating system. The second part of the course applies similar techniques to secure the Linux operating system. The course will discuss techniques and tools used to help reduce weaknesses in default installations and configurations of different operating systems.

Repeatability: This course may not be repeated for additional credits.

MIS 5216. Organizational Forensics. 3 Credit Hours.

This course provides students with a broad understanding of the investigation of digital data to gather evidence relating to criminal or other legal incidents and events. The class examines how technology and law interact. Lecture and hands-on exercises enable students to gain a practical understanding of: incident response, processing a crime/incident scene and gathering evidence, performing forensics analysis and conducting forensics investigation. This course helps students understand how to respond to computer incidents. Legal issues involved in responding to computer attack are explored, including employee monitoring, working with law enforcement and handling evidence.

Repeatability: This course may not be repeated for additional credits.

MIS 5217. Network Security. 3 Credit Hours.

This course introduces students to network architectures, network security concepts, threats and the methods used to protect network communication, which determine an organization's "Security Posture". Students will perform an in-depth examination of the OSI model and TCP/IP protocol in order to understand the technologies behind protecting network communications (firewalls, routers, switches, virtual private networks, intrusion prevention and detection systems, and highly available architectures). With this fundamental understanding of network communication, students will explore the inherent vulnerabilities related to network communications and the challenges of implementing an enterprise security architecture that aligns with business goals, IT strategy, and Governance.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites: Minimum grade of B- in MIS 5206.

MIS 5282. Independent Study. 1 to 3 Credit Hour.

Repeatability: This course may be repeated for additional credit.

Pre-requisites: Minimum grade of B- in MIS 5001.

MIS 5287. Business Skills for ITACS Professionals. 3 Credit Hours.

In this course students practice a variety of business skills that are necessary to be effective as an IT auditor. These skills include managerial communications and public speaking skills, interviewing skills, negotiation and personal selling skills, business writing, industrial psychology/behavioral science skills, project/time management and team building skills. The course is delivered through a series of workshops and simulations and include observations of business practices at host IT companies.

Repeatability: This course may not be repeated for additional credits.

MIS 5411. Business Intelligence and Data Visualization. 3 Credit Hours.

The first part of this course will focus upon the strategic role of information technology from the perspective of a non-technical manager. Key topics include IT strategy, systems thinking, disruptive innovations and digital transformation, digital business models, cybersecurity, cloud computing, IT governance and ethics. The second part of this course follows completion of an Excel module, and will explore the principles of data literacy and analysis through tools that enable turning data into insight through analysis and visualization. Students will also learn to evaluate visualizations by applying key principles of presenting data effectively.

Repeatability: This course may not be repeated for additional credits.

MIS 5603. Social Media Innovation. 1.5 to 3 Credit Hour.

In Social Media Innovation, students will review concepts and principles related to social and digital media. Through a combination of readings, discussion, presentations and projects, we examine (i) why social media is often a crucial channel for business success; (ii) how organizations are and should be using social media to achieve their goals; and (iii) the role of centralized, decentralized, and crowd-sourced information online. At the end of the course students will have gained deeper knowledge on understanding the tenants of social business governance, be able to analyze how modern marketers navigate the major platforms, explore social media listening and data management best practices, and identify approaches for successful social media campaign planning and implementation.

Repeatability: This course may not be repeated for additional credits.

MIS 5651. Digital Innovation in Marketing Capstone. 6 Credit Hours.

In this fully immersive, experiential capstone, students will design and measure the efficacy of a digital marketing strategy across multiple channels, evaluate the suitability for new digital marketing technology such as mobile apps, and manage a portfolio of digital marketing assets such as mobile apps, websites, social media and others. Students will design a fully formed digital marketing campaign around their own team generated idea. Students will spend the semester applying knowledge gained in all previous coursework including building the collateral, analyzing data, developing a UX - culminating in one final presentation of their work.

Repeatability: This course may not be repeated for additional credits.

MIS 5687. Business Skills for ITACS Professionals I. 1.5 Credit Hour.

In this course students develop and practice a variety of business skills that are necessary to be effective as an ITAC professional. These skills include managerial communications and public speaking skills, interviewing skills, negotiation and personal selling skills, business writing, industrial psychology/behavioral science skills, project/time management, leadership and team building skills. The course is delivered through a series of workshops and simulations that enable students to practice leadership, team building, and management communications.

Repeatability: This course may not be repeated for additional credits.

MIS 5688. Business Skills for ITACS Professionals II. 1.5 Credit Hour.

In this course, you will increase the business and interpersonal skills necessary to be a competent and successful ITACS Professional. These skills build upon those covered in the previous semester as students learn how to improve their responsive listening skills, achieve intention in communication, clarify their roles as leaders in decision making contexts, build teams, improve their writing effectiveness in IT auditing and security reports and assignments, and build credibility in the ITACS professions.

Repeatability: This course may not be repeated for additional credits.

MIS 5801. Managing Information Systems in the Enterprise. 3 Credit Hours.

This course provides an introduction to the strategic role of information technology in today's digital centric world. You will learn how to apply systems thinking to analyze and understand organizational IT strategy and usage. You will also learn how to apply theories of innovation to analyze the disruptive potential of technology. Organizations that strategically select, manage, and deploy digital business models prosper in the global economy. Students will use systems and business process thinking to create and analyze strategies for technology-enabled organizational and industry transformation. They will propose innovative solutions for new and existing business initiatives to leverage enterprise, consumer, and social technologies.

Repeatability: This course may not be repeated for additional credits.

MIS 5811. Data Literacy: Understanding and Communicating with Data. 3 Credit Hours.

Data Literacy is the ability to explore, understand and communicate with data. In today's organization, data is collected, analyzed and disseminated at all levels. Managers utilize data to monitor the health of the organization and respond to challenges faced before those challenges become a crisis. This course will provide students with access to various data analysis tools and provide insight into how to utilize data to communicate a story to an organization's stakeholders in a concise, meaningful way.

Repeatability: This course may not be repeated for additional credits.

MIS 5882. Independent Study. 1 to 6 Credit Hour.

Repeatability: This course may be repeated for additional credit.

MIS 5890. Special Topics. 1 to 6 Credit Hour.

Repeatability: This course may be repeated for additional credit.

MIS 5901. Capstone in Information Technology. 3 Credit Hours.

Open only to M.S. in MIS students who must have completed all 4 core courses and 2 electives. For this capstone experience, students select a topic in their area of interest and write a research paper or implement an information system.

Repeatability: This course may not be repeated for additional credits.

MIS 5902. IT Auditing Capstone. 3 Credit Hours.

This is the final course of the ITACS IT Auditing track. This course has two purposes. First, students are guided through an in-depth review of what they learned in prior courses of the track, with emphasis on mastering key points of the five Certified Information Systems Auditor (CISA) knowledge domains while preparing for the CISA exam. Second, students work on a project focused on integrating what they have learned through research of an emerging topic in the field of IT assurance.

Repeatability: This course may not be repeated for additional credits.

MIS 5903. Cyber Security Capstone. 3 Credit Hours.

This is the final course in the ITACS Cyber Security track. This course has two purposes. First, students are guided through an in-depth review of what they learned in prior courses of the track, with emphasis on mastering key points of the eight Certified Information Systems Security Professional (CISSP) knowledge domains while preparing for the CISSP exam. Second, students work on a project focused on integrating what they have learned through research of an emerging topic in the field of IT assurance.

Repeatability: This course may not be repeated for additional credits.

MIS 9002. Inf Sys Found & Theory. 3 Credit Hours.

Repeatability: This course may not be repeated for additional credits.

MIS 9003. Foundations of Electronic Commerce Research. 3 Credit Hours.

This course offers an overview of electronic commerce research in the domain of Information Systems (IS). An impressive body of work on electronic commerce has developed over the last two decades in IS research, and this course aims at reviewing and integrating this large body of research toward identifying gaps in the literature and proposing new opportunities for research that students can pursue as part of independent research projects. This course overviews the electronic commerce literature in IS research under a framework based on the main entities involved in electronic commerce - businesses and consumers that interact with the aid of Internet technologies, resulting in three broad research areas - (1) Business to Consumer (B2C), (2) Consumer to Consumer (C2C), and (3) Business to Business (B2B). These three broad research areas are further categorized into sixteen specialized topics and sub-areas, which help summarize the literature and integrate the body of work.

Repeatability: This course may not be repeated for additional credits.

MIS 9004. Adv Research Methods-IS. 3 Credit Hours.

Repeatability: This course may not be repeated for additional credits.

MIS 9011. Proseminar in Management Information Systems. 1 to 3 Credit Hour.

This course is required for all first year PhD in Business Administration - MIS students. It offers an overview of electronic commerce research in the domain of Information Systems (IS) under a framework based on the main entities involved in electronic commerce - businesses and consumers that interact with the aid of Internet technologies, resulting in three broad research areas - (1) Business to Consumer (B2C), (2) Consumer to Consumer (C2C), and (3) Business to Business (B2B). These three broad research areas are further categorized into sixteen specialized topics and sub-areas, which help summarize the literature and integrate the body of work. An impressive body of work on electronic commerce has developed over the last two decades in IS research, and this course aims at reviewing and integrating this large body of research toward identifying gaps in the literature and proposing new opportunities for research that students can pursue as part of independent research projects.

Repeatability: This course may be repeated for additional credit.

MIS 9090. Contemp Topics & Res-IS. 1 to 6 Credit Hour.

Repeatability: This course may be repeated for additional credit.

MIS 9183. Directed Study in MIS. 3 Credit Hours.

Repeatability: This course may be repeated for additional credit.