Management Information Systems (MIS)

Courses

MIS 0855. Data Science. 3 Credit Hours.
We are all drowning in data, and so is your future employer. Data pour in from sources as diverse as social media, customer loyalty programs, weather stations, smartphones, and credit card purchases. How can you make sense of it all? Those that can turn raw data into insight will be tomorrow's decision-makers; those that can solve problems and communicate using data will be tomorrow's leaders. This course will teach you how to harness the power of data by mastering the ways it is stored, organized, and analyzed to enable better decisions. You will get hands-on experience by solving problems using a variety of powerful, computer-based data tools virtually every organization uses. You will also learn to make more impactful and persuasive presentations by learning the key principles of presenting data visually. NOTE: This course fulfills a Science & Technology (GS) requirement for students under GenEd.

Course Attributes: GS

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

MIS 2101. Information Systems in Organizations. 3 Credit Hours.
Explain the role of information technology as a business enabler and identify and explain management information systems applications including customer relationship management systems, enterprise systems, e-commerce applications, transaction processing systems, business analytics, and emerging technologies. Evaluate the organizational fit and suitability of business applications and interpret the interaction between information technology, customers, processes, data, infrastructure, participants, and environment in an organization. Understand the ethical challenges of information technology and explain the evolving role of management information systems in the organization, and the role and careers of MIS professionals. NOTE: Students pursuing the MIS major or minor need a C grade or better in this class to register for MIS 2501 and 2502.


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

MIS 2501. Enterprise IT Architecture. 3 Credit Hours.
Specify the IT architecture for the enterprise. Explain and assess information technology such as computer hardware, software, systems, and networking. Identify management, usage, security, and consumer issues related to laptops, desktops, operating systems, servers, media, smartphones, gaming, cloud computing, and other new and evolving technologies. Learn about new computing platforms and how they create business value. Explore the technologies and business models of the ecosystems for new digital products and services.


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

Pre-requisites:
MIS 2101|Minimum Grade of C|May not be taken concurrently
OR MIS 2901|Minimum Grade of C|May not be taken concurrently.
MIS 2502. Data Analytics. 3 Credit Hours.
Analyze data and learn how to present insights from business data. Analyze, model, and design database centric solutions for organizations. Create data models and data warehouses based on business rules. Learn how to operate and manage a database system and structured query language (SQL). Source traditional and new data types and apply data mining and visualization to generate business intelligence. A grade of C or better is required in this course to register for MIS 3504.


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

Pre-requisites:
MIS 2101|Minimum Grade of C|May not be taken concurrently
OR MIS 2901|Minimum Grade of C|May not be taken concurrently.

MIS 2901. Honors: Information Systems in Organizations. 3 Credit Hours.
Explain the role of information technology as a business enabler and identify and explain management information systems applications including customer relationship management systems, enterprise systems, e-commerce applications, transaction processing systems, business analytics, and emerging technologies. Evaluate the organizational fit and suitability of business applications and interpret the interaction between information technology, customers, processes, data, infrastructure, participants, and environment in an organization. Understand the ethical challenges of information technology and explain the evolving role of management information systems in the organization, and the role and careers of MIS professionals. NOTE: Students pursuing the MIS major or minor need a C grade or better in this class to register for MIS 2501 and 2502.


Cohort Restrictions: Must be enrolled in one of the following Cohorts: SCHONORS, UHONORS, UHONORSTR.

Course Attributes: HO

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

MIS 3501. Data-Centric Application Development. 3 Credit Hours.
Develop web-based data-centric applications using high level programming language. Use debugging techniques to identify errors and make improvements. Interpret system requirement specifications and explain technical components including the use of systems development lifecycles in creating software applications. Create simple data driven applications that connect with a database. A grade of C or better is required in this course to register for MIS 4596.

College Restrictions: Must be enrolled in one of the following Colleges: Business & Mngmnt, Fox School.

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

Pre-requisites:
MIS 2502|Minimum Grade of C|May be taken concurrently.

MIS 3502. Application Integration and Evaluation. 3 Credit Hours.
Use concepts of application integration to develop data driven software applications. Design the system architecture for an n-tier application. Learn how to integrate existing applications to produce new capabilities. Identify the technical and process issues of integrating a new application into the existing application structure. Relate software components such as middleware to the overall information architecture and apply software components to create client and server based applications.

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

Pre-requisites:
MIS 3501|Minimum Grade of C|May not be taken concurrently.
MIS 3503. User Interface Design. 3 Credit Hours.
This course presents basic principles of human-computer interaction and user-centered design as related to interface design for software applications. Topics include managing the design process, usability testing and assessment techniques, and the application of guidelines for window, menu and other dialogue techniques including single user and collaborative applications.

College Restrictions: Must be enrolled in one of the following Colleges: Business & Mngmnt, Fox School.

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

Pre-requisites:
(MIS 3596|Minimum Grade of C|May not be taken concurrently)
OR (MIS 3504|Minimum Grade of C|May not be taken concurrently)
AND (MIS 2501|Minimum Grade of C|May not be taken concurrently)

MIS 3504. Digital Design and Innovation. 3 Credit Hours.
Learn business process analysis including requirements analysis, feasibility, and data and process modeling. Develop the skills required to create innovative, technology enabled, corporate and consumer products and services. Apply information gathering techniques to elicit requirements. Compose business and technical requirements. Work in teams to design and recommend information systems solutions to improve or transform business processes. Lead the "make vs. buy" decisions. Justify proposed process improvements and proposed information systems solutions. Learn how to implement and negotiate changes to requirements.

Field of Study Restrictions: May not be enrolled in one of the following Majors: Management Information Systems.

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

Pre-requisites:
MIS 2502|Minimum Grade of C|May not be taken concurrently.

MIS 3505. Applied Predictive Analytics. 3 Credit Hours.
This course gives students the applied, hands-on experience necessary to derive patterns and insight from large data sets. Students will learn how to select relevant variables for analysis, apply the appropriate analytic technique, and interpret the practical implications of the results. Topics also include unstructured "big" data, sentiment analysis, and articulating results to a business audience. Students will have hands-on experience with current, cutting-edge tools such as SAS Enterprise Miner.

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

Pre-requisites:
MIS 2502|Minimum Grade of C|May not be taken concurrently.

MIS 3506. Digital Solutions Studio. 3 Credit Hours.
Students learn to translate business needs into technology enabled solutions. In a studio setting and working with a real client, students learn to interact with clients as they learn to collect requirements, model processes and data and design solutions to the client's problems. After learning to scope a project and compile the associated set of business rules, students learn to utilize a number of design frameworks and structured techniques for creating innovative solutions.

Field of Study Restrictions: Must be enrolled in one of the following Majors: Management Information Systems.

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

Pre-requisites:
MIS 2502|Minimum Grade of C|May not be taken concurrently.

MIS 3507. Defending Against Cyber Crime. 3 Credit Hours.
In this course you will learn the importance of Information Security through modern case studies and pragmatic approach to evaluating security as an executive.

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

Pre-requisites:
MIS 2101|Minimum Grade of C|May not be taken concurrently
OR (MIS 2901|Minimum Grade of C|May not be taken concurrently.

MIS 3508. Retail Management. 3 Credit Hours.
This course presents the knowledge and skills necessary to manage a retail operation. The course is divided into two parts: 1) the retail environment: customer behavior, marketing, finance, new product development, store evaluation, and store design. 2) retail operations: systems, processes and strategies, inventory control, labor management, customer service, and customer information systems. The course is designed to provide a broad understanding of retail methods and techniques.

Field of Study Restrictions: May not be enrolled in one of the following Majors: Management Information Systems.

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

Pre-requisites:
MIS 2502|Minimum Grade of C|May not be taken concurrently.

MIS 3509. Supply Chain Management. 3 Credit Hours.
This course provides an introduction to supply chain management and its role in today's global economy. The course examines the complexity of supply chain interactions and the challenges of managing a supply chain in an increasingly competitive environment. The course covers the fundamental concepts of supply chain management, including: supply chain design, inventory management, demand forecasting, supply chain planning, and supply chain performance measurement.

Field of Study Restrictions: May not be enrolled in one of the following Majors: Management Information Systems.

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

Pre-requisites:
MIS 2502|Minimum Grade of C|May not be taken concurrently.

MIS 3510. Information Systems for Business. 3 Credit Hours.
This course provides a comprehensive overview of information systems and their role in business decision making. The course covers the fundamental concepts of information systems, including: information systems architecture, information systems planning, information systems implementation, and information systems evaluation. The course is designed to provide a broad understanding of information systems and their role in business decision making.

Field of Study Restrictions: May not be enrolled in one of the following Majors: Management Information Systems.

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

Pre-requisites:
MIS 2502|Minimum Grade of C|May not be taken concurrently.

MIS 3511. Information Systems for Business. 3 Credit Hours.
This course provides a comprehensive overview of information systems and their role in business decision making. The course covers the fundamental concepts of information systems, including: information systems architecture, information systems planning, information systems implementation, and information systems evaluation. The course is designed to provide a broad understanding of information systems and their role in business decision making.

Field of Study Restrictions: May not be enrolled in one of the following Majors: Management Information Systems.

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

Pre-requisites:
MIS 2502|Minimum Grade of C|May not be taken concurrently.
MIS 3533. Electronic Commerce Site Design. 3 Credit Hours.
Learn web application development including requirements analysis, usability evaluation, specification, and implementation. Focus on both traditional transaction based systems and new applications for advertising, ordering, payment, and communication. Learn specific skills and tools for the development and management of electronic commerce initiatives. Understand the distinguishing features of front ends, server side code, and third party systems.


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

Pre-requisites:
(MIS 3501|Minimum Grade of C|May not be taken concurrently)
AND (MIS 2502|Minimum Grade of C|May not be taken concurrently)

MIS 3534. Strategic Management of Information Technology. 3 Credit Hours.
This course prepares students to be effective exploiters and managers of information technology. The management of information technology is addressed by considering the contemporary issues faced by general managers, e.g., globalization, time compression, and technology integration. Strategic approaches for dealing with these issues are explored. An integrative class project is used to pull together operational concepts from lower level information system and business courses as they apply to the management of information technology.


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

Pre-requisites:
MIS 2101|Minimum Grade of C|May not be taken concurrently
OR MIS 2901|Minimum Grade of C|May not be taken concurrently.

MIS 3535. Lead Global Digital Projects. 3 Credit Hours.
Learn how to lead, plan and manage global technology-enabled, process-centric information systems projects by focusing on initiating, planning, executing, controlling and closing projects in the context of topics such as integration, scope, timing, cost, quality, human resource, technology, communications, and risk and procurement. Explore the impact of the human element as it relates to the success and failure of information systems projects. Learn how to monitor project plans and communicate status reports to clients, and create and respond to request for proposals. A grade of a C or better is required in this course to register for MIS 4596.

Field of Study Restrictions: Must be enrolled in one of the following Majors: Management Information Systems.
College Restrictions: Must be enrolled in one of the following Colleges: Business & Mngmnt, Fox School.

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

Pre-requisites:
MIS 3506|Minimum Grade of C|May not be taken concurrently.
MIS 3536. Information Systems Innovation. 3 Credit Hours.
This course provides the knowledge and skills to leverage emerging and innovative information technology to create business opportunities for both new entrepreneurial ventures and traditional firms. As we move into the digital world, the ways by which companies create value is fundamentally shifting from products to experiences. The rapid convergence to digital technology opens up new opportunities to offer novel products and services that did not exist before. In this course, students will be asked to think how entrepreneurs and companies produce radically new products and services in the increasingly digital world. The course focuses on how organizations can design novel and desirable products and services. Through applied projects, student teams will learn how to evaluate and apply new innovative technologies to create new digital experiences, products, and services.


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

Pre-requisites:
MIS 2101|Minimum Grade of C|May not be taken concurrently
OR MIS 2901|Minimum Grade of C|May not be taken concurrently.

MIS 3537. Internet Enabled Supply Chains. 3 Credit Hours.
This course provides an understanding of how smart companies are revolutionizing their supply chains through the use of the Internet. Topics include e-business models, network-ready businesses, information hubs, collaboration in supply chains, eMarketplaces and eAuctions, supply chain visibility and security. The course draws from a host of real-world case studies and computer simulations to reinforce learning and understanding of Internet-enabled supply chains.


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

Pre-requisites:
MIS 2101|Minimum Grade of C|May not be taken concurrently
OR MIS 2901|Minimum Grade of C|May not be taken concurrently.

MIS 3538. Social Media Innovation. 3 Credit Hours.
In this course we review concepts and principles related to new business models supported by innovative use of Web 2.0 and social media. Through a combination of readings, discussion, presentations, and hands-on projects we examine (i) the organizational use of key media technologies such as web sites, blogs, web analytics, and search engine optimization, (ii) the business models underlying successful innovative new media organizations including Wikipedia, Craigslist, YouTube, and Facebook, and (iii) the role of centralized, decentralized, and crowd-sourced information resources in online media innovation.


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

Pre-requisites:
MIS 2101|Minimum Grade of C|May not be taken concurrently
OR MIS 2901|Minimum Grade of C|May not be taken concurrently.
MIS 3580. Special Topics. 3 Credit Hours.
Special topics in current developments in the field of information systems.


Repeatability: This course may be repeated for additional credit.

Pre-requisites:
MIS 2101|Minimum Grade of C|May not be taken concurrently
OR MIS 2901|Minimum Grade of C|May not be taken concurrently.

MIS 3581. Co-operative Experience in Management Information Systems. 3 Credit Hours.
Students undertake a research project that integrates their current work experience with their classroom experience at Temple University. The results are reported in a series of status reports, blogs and a PowerPoint presentation prepared under the supervision of a faculty member. NOTE: Arrangements are made through the Management Information Systems Department and this course is open to ALL Fox business students. A 2.7 cumulative GPA or higher is recommended. http://ibit.temple.edu/industryexperience/


Repeatability: This course may be repeated for additional credit.

Pre-requisites:
MIS 2101|Minimum Grade of C|May not be taken concurrently
OR MIS 2901|Minimum Grade of C|May not be taken concurrently.

MIS 3582. Independent Study. 1 to 6 Credit Hour.
Students will prepare research papers under supervision of a faculty member. NOTE: None of the required MIS courses can be taken as an independent study.

Field of Study Restrictions: Must be enrolled in one of the following Majors: Management Information Systems.
College Restrictions: Must be enrolled in one of the following Colleges: Business & Mngmnt, Fox School.

Repeatability: This course may be repeated for additional credit.

MIS 3682. Independent Study. 1 to 6 Credit Hour.
Students will prepare research papers under supervision of a faculty member. NOTE: None of the required MIS courses can be taken as an independent study.

Field of Study Restrictions: Must be enrolled in one of the following Majors: Management Information Systems.

Repeatability: This course may be repeated for additional credit.

MIS 3999. Honors Thesis I. 1 to 3 Credit Hour.
The first of a two-part sequence of courses in which independent research is conducted under the supervision of a thesis advisor from the MIS department resulting in a substantial piece of original research, roughly 30 to 50 pages in length upon completion of MIS 4999. The student must publicly present his/her findings at a Temple University Research Forum session or the equivalent during one of the two semesters during which these courses are undertaken.

Field of Study Restrictions: Must be enrolled in one of the following Majors: Management Information Systems.
College Restrictions: Must be enrolled in one of the following Colleges: Business & Mngmnt, Fox School.
Cohort Restrictions: Must be enrolled in one of the following Cohorts: SCHONORS, UHONORS, UHONORSTR.
Course Attributes: HO

Repeatability: This course may be repeated for additional credit.
MIS 4596. Information Systems Integration. 3 Credit Hours.
This is a capstone course that will apply previous course material to a comprehensive project. Learn how to leverage enterprise information technology assets and capabilities. Justify and prioritize project portfolios within a department and across the enterprise. Evaluate and compare proposed projects based on requirements, vendors, technology, and architectural fit with the organization. Work in teams to participate in a real-world project. Learn how IT organizations are structured and the role of the MIS professional and prepare to enter job marketplace. Students must earn a grade of C in this course if they are using it to fill the writing intensive course requirement for their degree.

Field of Study Restrictions: Must be enrolled in one of the following Majors: Management Information Systems.
College Restrictions: Must be enrolled in one of the following Colleges: Business & Mngmnt, Fox School.

Course Attributes: WI

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

Pre-requisites:
(MIS 2501|Minimum Grade of C|May not be taken concurrently)
AND (MIS 3502|Minimum Grade of C|May not be taken concurrently)
AND (MIS 3535|Minimum Grade of C|May not be taken concurrently)

MIS 4999. Honors Senior Thesis II. 1 to 3 Credit Hour.
Independent research conducted under the supervision of a thesis advisor from the MIS Department resulting in a substantial piece of original research, roughly 30 to 50 pages in length. Student must publicly present his/her findings at a Temple University Research Forum session or the equivalent if this was not done in MIS 3999.

Field of Study Restrictions: Must be enrolled in one of the following Majors: Management Information Systems.
College Restrictions: Must be enrolled in one of the following Colleges: Business & Mngmnt, Fox School.
Cohort Restrictions: Must be enrolled in one of the following Cohorts: SCHONORS, UHONORS, UHONORSTR.

Course Attributes: HO

Repeatability: This course may be repeated for additional credit.

MIS 5001. Information Technology Management. 1 to 3 Credit Hour.
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.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.
College Restrictions: Must be enrolled in one of the following Colleges: Business & Mngmnt, Fox School.

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.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.
College Restrictions: Must be enrolled in one of the following Colleges: Business & Mngmnt, Fox School.

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.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.
College Restrictions: Must be enrolled in one of the following Colleges: Business & Mngmnt, Fox School.

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

Pre-requisites:
MIS 5001|Minimum Grade of B-|May not be taken concurrently
OR MIS 5302|Minimum Grade of B-|May not be taken concurrently
OR MIS 5402|Minimum Grade of B-|May not be taken concurrently.
MIS 5103. Network Architectures for Business. 3 Credit Hours.
This course covers the information architecture of the internet-enabled organization, including the use and development of client server and distributed systems. It provides detailed analysis of networking and telecommunications, including data, voice, image, video, network hardware, and topology. Concepts, models, architectures, and standards for the design, implementation, integration, security, and management of distributed internet- and intranet-enabled systems and networks are discussed. The course provides an understanding of the role of the information architecture and distributed systems on organizational design and management strategy.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

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

Pre-requisites:
MIS 5001|Minimum Grade of B-|May not be taken concurrently
OR MIS 5302|Minimum Grade of B-|May not be taken concurrently
OR MIS 5402|Minimum Grade of B-|May not be taken concurrently.

MIS 5104. Network Centric Applica. 3 Credit Hours.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

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

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.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

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

MIS 5106. Objct Oriented Computing. 3 Credit Hours.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

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

MIS 5107. Knowledge Mgmt/Bus Intel. 3 Credit Hours.
This course reviews knowledge management principles and technologies focusing on business applications.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

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.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.
College Restrictions: Must be enrolled in one of the following Colleges: Business & Mngmnt, Fox School.

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

Pre-requisites:
MIS 5001|Minimum Grade of B-|May not be taken concurrently
OR MIS 5302|Minimum Grade of B-|May not be taken concurrently
OR MIS 5402|Minimum Grade of B-|May not be taken concurrently.

MIS 5109. User Interface Design. 3 Credit Hours.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

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.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.
College Restrictions: Must be enrolled in one of the following Colleges: Business & Mngmnt, Fox School.

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 ERP. The course looks at how a business’ key transactions are executed and accounted for in an ERP. IS and accounting controls to assure confidentiality, integrity and authenticity are examined. Finally, the course looks at how transaction processing data is transformed into data for management analysis and legal entity reporting.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

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

MIS 5122. Enterprise Architecture for IT Auditors. 3 Credit Hours.
This course surveys the technology concepts and components that are critical for the IT auditor to understand. It uses an enterprise architecture framework to explore issues of business process, business data, applications and the infrastructure that are necessary to run those applications.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

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

MIS 5123. Business Essentials for IT Audits. 1 to 3 Credit Hour.
This course gives incoming students from technical disciplines the basic business background that they will need throughout the ITACS curriculum. Students will learn how to read basic financial statements, the components that make up a business model, how applications support both revenue generation and operations, and the role of a control environment. Topics include the income statement, balance sheet, cash flow statement, business model, value proposition, market segmentation, the sales process, business processes and controls.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

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

MIS 5161. Inf Sys Applications-Org. 3 Credit Hours.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

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

MIS 5162. Database Mgt Sys & Model. 3 Credit Hours.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

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

MIS 5163. Sys Anal/Rapid App Dev. 3 Credit Hours.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

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

MIS 5164. Inf Tech Prin-Network-BS. 3 Credit Hours.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

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

MIS 5170. Special Topics. 1 to 6 Credit Hour.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may be repeated for additional credit.

MIS 5178. Inf Architect & Network. 3 Credit Hours.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.
MIS 5179. Inf Systems Mgt & Proces. 3 Credit Hours.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.
Repeatability: This course may not be repeated for additional credits.

MIS 5182. Independent Study. 1 to 6 Credit Hour.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.
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.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.
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.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.
College Restrictions: Must be enrolled in one of the following Colleges: Business & Mngmnt, Fox School.
Repeatability: This course may not be repeated for additional credits.

MIS 5202. IT Governance. 3 Credit Hours.
Understanding how IT organizations are structured and managed is essential to effective IT auditing. In this course students will learn how IT organizations are managed and the issues which make IT management so challenging. Students will learn how strategic planning is performed within IT organizations. A number of tools, techniques, and frameworks such as COBIT will be discussed which will help make the auditor effective in this environment.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.
College Restrictions: Must be enrolled in one of the following Colleges: Business & Mngmnt, Fox School.
Repeatability: This course may not be repeated for additional credits.

MIS 5203. Systems and Infrastructure Lifecycle Management 1. 3 Credit Hours.
Examines how an organization builds an enterprise architecture within an environment of internal control. Topics cover include information system planning, management and usage, the development, acquisition and maintenance of these technologies and their impact on the organization's business processes.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.
College Restrictions: Must be enrolled in one of the following Colleges: Business & Mngmnt, Fox School.
Repeatability: This course may not be repeated for additional credits.

MIS 5204. Systems and Infrastructure Lifecycle Management 2. 3 Credit Hours.
A closer examination of the controls needed during software development and the external acquisition of systems as well as the concept of application controls and how they are used.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.
College Restrictions: Must be enrolled in one of the following Colleges: Business & Mngmnt, Fox School.
Repeatability: This course may not be repeated for additional credits.

Pre-requisites:
MIS 5203|Minimum Grade of B-|May not be taken concurrently.
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.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.
College Restrictions: Must be enrolled in one of the following Colleges: Business & Mngmnt, Fox School.

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

MIS 5206. Protection of Information Assets. 3 Credit Hours.
Information is an organization’s most precious asset. Inadvertent disclosure of sensitive information can have significant operational and financial impact on the organization. Loss of information or access to it can also have serious adverse impacts on the organization. In this course students learn the importance of managing the information assets of the organization including logical IT security, physical, and environmental security. Disaster recovery and mitigating risk through insurance are also discussed.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.
College Restrictions: Must be enrolled in one of the following Colleges: Business & Mngmnt, Fox School.

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

MIS 5208. Data Analytics for IT Auditors. 3 Credit Hours.
MIS 5208 examines the emerging approach of continuous-audit. This approach 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 tools like ACL will be used in addition to general tools like Excel.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

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

MIS 5209. Securing Digital Infrastructure. 3 Credit Hours.
This course examines issues related to securing the components of a company’s infrastructure. It reviews network, firewall, and basic operating system security issues. It presents the material theoretically and practically through many in class and homework exercises.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

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

MIS 5211. Introduction to Ethical Hacking. 1.5 to 3 Credit Hour.
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.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.
College Restrictions: Must be enrolled in one of the following Colleges: Business & Mngmnt, Fox School.

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

MIS 5212. Advanced Penetration Testing. 1.5 to 3 Credit Hour.
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.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.
College Restrictions: Must be enrolled in one of the following Colleges: Business & Mngmnt, Fox School.

Repeatability: This course may not be repeated for additional credits.
MIS 5213. Intrusion Detection & Response. 1.5 to 3 Credit Hour.
While all businesses work to be as secure as possible, it is agreed that 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.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.
College Restrictions: Must be enrolled in one of the following Colleges: Business & Mngmnt, Fox School.

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.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.
College Restrictions: Must be enrolled in one of the following Colleges: Business & Mngmnt, Fox School.

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

MIS 5282. Independent Study. 1 to 3 Credit Hour.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may be repeated for additional credit.

Pre-requisites:
MIS 5001|Minimum Grade of B-|May not be taken concurrently.

MIS 5287. Business Skills for the IT Auditor. 1.5 Credit Hour.
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. The practicum will be scheduled for fall (1.5 credits) and spring (1.5 credits) semester to allow for optimal development of business skills.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.
College Restrictions: Must be enrolled in one of the following Colleges: Business & Mngmnt, Fox School.

Repeatability: This course may be repeated for additional credit.

MIS 5301. Data Analytics for Management. 1.5 Credit Hour.
Organizations rely on data to make effective decisions, and managers must create a data-driven mindset that uses analytics to drive strategy. In this course, students learn how data is used to support organizational decision-making and solve business problems. Students learn the tools and techniques organizations use to assess, prepare, and analyze data. Students gain hands-on experience through case studies and exercises that require the use of a wide range of data and analytic skills, including statistics. The course includes a data analytics contest involving the analysis, interpretation and reasoning from data provided by corporate and nonprofit partners.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.
College Restrictions: Must be enrolled in one of the following Colleges: Business & Mngmnt, Fox School.

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

Pre-requisites:
STAT 5301|Minimum Grade of B-|May be taken concurrently.

MIS 5302. Managing Technology & Systems. 1.5 Credit Hour.
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 map systems and processes and propose innovative solutions for new and existing business initiatives to leverage enterprise, consumer, and social technologies.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.
College Restrictions: Must be enrolled in one of the following Colleges: Business & Mngmnt, Fox School.

Repeatability: This course may not be repeated for additional credits.
MIS 5303. Design Inquiry and Research. .5 to 1.5 Credit Hours.
This course forms a foundation of approaches, skills and working methods to be applied throughout the MBA experience. This material is less about a distinct subject and more about a new perspective to effectively meet the business challenges of a rapidly changing, technologically driven global world. The course introduces the concept of Business Design, a holistic approach to management that combines the analytical strengths of traditional business education with the qualitative research, idea generation and the ability to synthesize information from design education. It is a balance of quantitative and qualitative thinking. Design Inquiry is a question-based framework to structure this problem solving process to create innovative solutions that are user-centered, socially, culturally and functionally meaningful and economically sustainable. The challenge associated with this course will be an enterprise risk assessment featuring a specific company and including interviews, tours and other primary (as well as secondary) data gathering principles and processes.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.
College Restrictions: Must be enrolled in one of the following Colleges: Business & Mngmnt, Fox School.
Repeatability: This course may be repeated for additional credit.

MIS 5401. Data Analytics for Management. 1.5 Credit Hour.
Organizations rely on data to make effective decisions, and managers must create a data-driven mindset that uses analytics to drive strategy. In this course, students learn how data is used to support organizational decision-making and solve business problems. Students learn the tools and techniques organizations use to assess, prepare, and analyze data. Students gain hands-on experience through case studies and exercises that require the use of a wide range of data and analytic skills, including statistics. The course includes a data analytics contest involving the analysis, interpretation and reasoning from data provided by corporate and nonprofit partners.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.
College Restrictions: Must be enrolled in one of the following Colleges: Business & Mngmnt, Fox School.
Repeatability: This course may not be repeated for additional credits.
Pre-requisites:
STAT 5001|Minimum Grade of B-|May not be taken concurrently
OR STAT 5401|Minimum Grade of B-|May be taken concurrently.

MIS 5402. Managing Technology & Systems. 1.5 Credit Hour.
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 map systems and processes and propose innovative solutions for new and existing business initiatives to leverage enterprise, consumer, and social technologies.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.
College Restrictions: Must be enrolled in one of the following Colleges: Business & Mngmnt, Fox School.
Repeatability: This course may not be repeated for additional credits.

MIS 5403. Design Inquiry and Research. .5 to 1.5 Credit Hours.
This course forms a foundation of approaches, skills and working methods to be applied throughout the MBA experience. This material is less about a distinct subject and more about a new perspective to effectively meet the business challenges of a rapidly changing, technologically driven global world. The course introduces the concept of Business Design, a holistic approach to management that combines the analytical strengths of traditional business education with the qualitative research, idea generation and the ability to synthesize information from design education. It is a balance of quantitative and qualitative thinking. Design Inquiry is a question-based framework to structure this problem solving process to create innovative solutions that are user-centered, socially, culturally and functionally meaningful and economically sustainable. The challenge associated with this course will be an enterprise risk assessment featuring a specific company and including interviews, tours and other primary (as well as secondary) data gathering principles and processes.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.
College Restrictions: Must be enrolled in one of the following Colleges: Business & Mngmnt, Fox School.
Repeatability: This course may be repeated for additional credit.
MIS 5601. Database Analytics. 1.5 to 3 Credit Hour.
This course provides a foundation for, and practice in, designing database systems and analyzing business data to enhance firm competitiveness. Concepts introduced in this course aim to develop an understanding of the different types of business data, various analytical approaches, and application of these approaches to solve business problems. Students will have hands-on experience with current, cutting-edge tools such as MySQL and SAS Enterprise Miner.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.
College Restrictions: Must be enrolled in one of the following Colleges: Business & Mngmnt, Fox School.

Repeatability: This course may be repeated for additional credit.

MIS 5602. Applied Predictive Analytics. 1.5 to 3 Credit Hour.
Students will learn how to select relevant variables for analysis, apply the appropriate analytic technique, and interpret the practical implications of the results. Topics also include unstructured "big" data, sentiment analysis, and articulating results to a business audience. Students will have hands-on experience with current, cutting-edge tools such as SAS Enterprise Miner. This course will cover advanced topics needed to resolve more complicated business problems including but not limited to data cleansing and reporting. The foundation, set in MIS 5101, will be strengthened and expanded with more concepts and applications appropriate for solving more challenging business problems and effectively communicating and presenting the output needed to resolve the problem.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.
College Restrictions: Must be enrolled in one of the following Colleges: Business & Mngmnt, Fox School.

Repeatability: This course may be repeated for additional credit.

MIS 5603. Social Media Innovation. 1.5 to 3 Credit Hour.
This course prepares students to strategically deploy social media solutions to support enterprise innovation. It covers key concepts and principles related to new business models supported by innovative use of Web 2.0 and social media. Through a combination of readings, discussions, presentations, and hands-on projects, we examine (i) the organizational use of key media technologies such as photo and website editing, blogs, web analytics, and search engine optimization, (ii) the business models underlying successful innovative new media organizations including Wikipedia, Craigslist, YouTube, and Facebook, and (iii) the role of centralized, decentralized, and crowdsourced information resources in online media innovation.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.
College Restrictions: Must be enrolled in one of the following Colleges: Business & Mngmnt, Fox School.

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

MIS 5651. Digital Innovation in Marketing Capstone. 6 Credit Hours.
In this course students are given the opportunity to demonstrate the capabilities they have developed in other portions of the program. This course makes extensive use of case studies and role playing exercises, and/or real world projects. The objective of this course is to expose students to each of the domains covered in the curriculum. Sample contexts for these case studies/projects will be designing and measuring the efficacy of a web marketing strategy across multiple channels, evaluating the suitability for a new digital marketing technology such as mobile apps, portfolio management of digital marketing assets such as mobile apps, websites, social media and others. This is a cohort based program, the first enrollment must be for 6 credits.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.
College Restrictions: Must be enrolled in one of the following Colleges: Business & Mngmnt, Fox School.

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

MIS 5801. Managing Information. 2 to 3 Credit Hours.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

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

MIS 5882. Independent Study. 1 to 6 Credit Hour.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may be repeated for additional credit.

MIS 5890. Special Topics. 1 to 6 Credit Hour.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

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.

**Level Registration Restrictions:** Must be enrolled in one of the following Levels: Graduate.

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

MIS 5902. IT Auditing Capstone. 3 Credit Hours.
In this course students are given the opportunity to demonstrate the capabilities they have developed in other portions of the program. This course makes extensive use of case studies and role playing exercises. Students will explore a comprehensive case study which exposes them to each of the domains covered in the curriculum.

**Level Registration Restrictions:** Must be enrolled in one of the following Levels: Graduate.

**College Restrictions:** Must be enrolled in one of the following Colleges: Business & Mngmnt, Fox School.

**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. The course has two purposes. First, it reviews all of the topics covered in earlier courses and further prepares the students for the SSCP exam. Second, it requires students to integrate what they have learned and research an emerging topic in the field of IT assurance.

**Level Registration Restrictions:** Must be enrolled in one of the following Levels: Graduate.

**College Restrictions:** Must be enrolled in one of the following Colleges: Business & Mngmnt, Fox School.

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

MIS 9001. Qual & Interpret Meth-IS. 3 Credit Hours.

**Level Registration Restrictions:** Must be enrolled in one of the following Levels: Graduate.

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

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

**Level Registration Restrictions:** Must be enrolled in one of the following Levels: Graduate.

**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.

**Level Registration Restrictions:** Must be enrolled in one of the following Levels: Graduate.

**Degree Restrictions:** Must be enrolled in one of the following Degrees: Doctor of Philosophy.

**College Restrictions:** Must be enrolled in one of the following Colleges: Business & Mngmnt, Fox School.

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

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

**Level Registration Restrictions:** Must be enrolled in one of the following Levels: Graduate.

**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.

Field of Study Restrictions: Must be enrolled in one of the following Majors: Business Administration.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.
Degree Restrictions: Must be enrolled in one of the following Degrees: Doctor of Philosophy.
College Restrictions: Must be enrolled in one of the following Colleges: Business & Mngmnt, Fox School, Sport Tourism Hospitality Mgt.

Repeatability: This course may be repeated for additional credit.

MIS 9090. Contemp Topics & Res-IS. 1 to 6 Credit Hour.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may be repeated for additional credit.

MIS 9183. Directed Study in MIS. 3 Credit Hours.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.
Degree Restrictions: Must be enrolled in one of the following Degrees: Doctor of Philosophy.
College Restrictions: Must be enrolled in one of the following Colleges: Business & Mngmnt, Fox School.

Repeatability: This course may be repeated for additional credit.