



Notes:

- Semester offerings for classes are expected but not guaranteed
- \*Indicates a programming

MCIS COURSES AND DEGREE REQUIREMENTS	
REQUIRED CORE - 5 COURSES (15 CREDITS)	COURSE CONTENT
<b>TAKE ALL 4 OF THE FOLLOWING COURSES:</b>	
CIS600A Project Management: Information Technology (Fall, Spring - 3 cr.)	Strategic role and management of technology and projects; students will apply knowledge, skills, tools, and techniques for project management solutions that are relevant in any discipline; balance competing project stakeholder requirements for quality, scope, time, cost, and personnel issues. Investigate the PMBOK & PMP/CAPM professional examinations; utilize management cases for analyzing project management issues and making project-related decisions.
CIS606 Information Systems Essentials* (Fall, Spring - 3 cr.)	The course introduces students to programming/software development (using Python), data analytics (using Python), IT project management, and cybersecurity. It provides students with a basic understanding of these four critical information technology areas to help them choose among MCIS specializations/certifications and career pathways.
CIS610 Software Development Methodology (Fall - 3 cr.)	Software development methodology is concerned with determining the information needs of a company and specifying the requirements for specific systems that support business processes. Analysis tasks are concerned with data, process, and object modeling for the business processes. Analysis directly influences the scope of an application and, subsequently, its design and construction.
CIS655 Business Database Systems (Spring - 3 cr.) <i>Prerequisite: CIS605 or CIS611</i>	This course provides a rigorous foundation in relational database management systems and their value to business enterprises. Students receive hands-on experience with: Data analysis, database design, database administration; data modeling and querying; data sublanguages (stored procedures) and encryption; distributed database systems.
<b>SELECT 1 COURSE FROM THE FOLLOWING:</b>	
CIS605 Business Visual Application Development* (Fall - 3 cr.)	Design, construction, and testing of business application systems including leading edge visual, E-commerce languages and tools. Students will learn to design, develop, and debug applications using object-oriented and event-driven programming following good programming techniques, including modularity and code documentation.
CIS611 Object-Oriented Systems* (Spring - 3 cr.)	This course provides experience with Java programming. We will learn the basic operations for sequence, selection, and iteration. In addition, we will learn how Java incorporates object-oriented concepts like encapsulation and polymorphism. Secondly, the course will provide some exposure to the principles of data structures. Data structures refer to the way that computers store data. Examples of data structures include arrays, linked lists, stacks, queues, and trees.

ELECTIVES - 6 COURSES (18 CREDITS)	COURSE CONTENT
<b>SELECT 6 COURSES FROM THE FOLLOWING:</b>	
CIS563 Information Assurance and Security (Fall - 3 cr.)	Examine information assurance and security from an enterprise risk management perspective. Enterprise risk management provides a framework for identifying, evaluating, prioritizing, and mitigating IT-related risks based on the organization's objectives, strategy, risk appetite, and culture. Information assurance is the practice of managing information-related risks to ensure that (only) authorized parties have access to the "right" information at the "right" time.
CIS570 Business Intelligence (Spring, Summer [8-week course] - 3 cr.)	Business intelligence refers to the harnessing of vast data stores to solve problems, enhance decision-making and discover new opportunities. This course will focus on the concepts, techniques and technologies that managers can use to transform, analyze, mine, and view data for the purpose of deriving business value from it.
CIS575 Applied Data Mining and Analytics in Business (Fall - 3 cr.) <i>Prerequisite: STAT204 or statistics knowledge</i>	Data mining refers to the methodical preparation and analysis of data using statistical, mathematical and artificial intelligence techniques and algorithms. This course will focus on data mining concepts, methodologies, models, and tools, and its applications to business for prediction, classification, and forecasting.
CIS576 Business Data Visualization* (Spring - 3 cr.)	Visualization techniques are intended to aid in dealing with data, serving as external cognition "amplifiers" that expand memory, ease comprehension, and support decision-making. Students will develop the skills necessary to solve visualization problems and critique and evaluate current visualizations and systems. The course will require some programming/scripting work as analytics are often necessary prior to visualization.
CIS577 AI/ML Product Management (Fall - 3 cr.)	Identify, propose, manage, and lead the development and deployment of solutions that leverage the power of AI and ML to deliver business value. Overview of AI components, knowledge, and skills to define and refine product vision and strategy, evaluate options, understand privacy, security, ethical, risk & legal implications, and develop, test, and launch AI/ML products.
CIS601 Enterprise Computing & Systems Integration (Spring - 3 cr.)	This course serves as an introduction to Enterprise Resource Planning (ERP) systems. The class examines an enterprise's business processes and challenges students to examine, analyze, and execute business processes using the SAP ERP simulation. The content is reinforced by the use of the SAP ERP simulation to support both strategic decisions and the day-to-day operations of a business through introductory, extended, and advanced versions of the simulation.
CIS605 Business Visual Application Development* (Fall - 3 cr.) Can be used as an elective, if not taken as core.	Design, construction, and testing of business application systems including leading edge visual, E-commerce languages and tools. Students will learn to design, develop, and debug applications using object-oriented and event-driven programming following good programming techniques, including modularity and code documentation.
CIS611 Object-Oriented Systems* (Spring - 3 cr.) Can be used as an elective, if not taken as core.	This course provides experience with Java programming. We will learn the basic operations for sequence, selection, and iteration. In addition, we will learn how Java incorporates object-oriented concepts like encapsulation and polymorphism. Secondly, the course will provide some exposure to the principles of data structures. Data structures refer to the way that computers store data. Examples of data structures include arrays, linked lists, stacks, queues, and trees.

ELECTIVES – (Continued)	COURSE CONTENT
CIS620 IT Communication Infrastructure* (Fall - 3 cr.) <i>Pre or Co-requisite: CIS606</i>	Technical aspects of information communications, business considerations; wireless technology, architecture, and applications. Upon completion of CIS620, successful students will be able to (1) Describe, explain, name, list, identify, and recognize the concepts, components, and uses of operating systems / networking. (2) Demonstrate through hands-on activities the ability to set-up and trouble-shoot hardware and software for a computer network in Linux and Windows. (3) And, compare and contrast various approaches to networking, describe or identify tradeoffs to each approach, and explain or recognize ways to choose which type of network to implement in a given situation.
CIS623 Cybersecurity (Spring - 3 cr.) <i>Prerequisite: CIS620</i>	Detailed examination of modern security topics, blending coverage of many of the domains of the CISSP with those of the CEH: Access Control, Network Security, Risk Management, Software Development Security, Cryptography, Architecture, Operations, Business Continuity, Legal/ Ethical issues, as well as attack, defense, and counter-measure mechanisms.
CIS665 E-Business Application Technology* (Spring - 3 cr.) <i>Prerequisites: CIS610 Co-Requisite: CIS655</i>	Web applications development is a complex and rapidly evolving field. There are a myriad of languages, techniques, technologies and tools that can be used to design, build and deliver a wide variety of content, services and products on the web. This course will cover some essential and popular languages/technologies for web development, namely, HTML, CSS, PHP, ASP .Net and XML.
CIS670 Advanced IT Project Management (Spring, 1 <sup>st</sup> 8 weeks - 3 cr.) <i>Prerequisite: CIS600A</i>	In this class, an applied examination of project management is conducted with an emphasis on preparing for and completing PMI certification. The focus is on the Project Management Body of Knowledge (PMBOK® Guide). This course aims to prepare you for either Certified Associate in Project Management (CAPM)® or Project Management Professional (PMP)®.
CIS675 Agile Management and Product Development (Fall - 3 Cr). <i>Prerequisite: CIS600A</i>	This course provides the student with a brief overview of agile project management, including the business context for development projects that makes agile such an attractive alternative to traditional project management. Students will learn the basics of agile, Scrum, Kanban, Disciplined Agile, and SAFe processes, including initial scope, user stories, release planning, iteration management, and solution deployment. Students will also study the business factors that enable successful implementation of agile.
CIS676 IT Management (Spring, 2 <sup>nd</sup> 8 weeks 3 cr.)	An applied examination of IT management is conducted with an emphasis on emerging technologies, business transformation, and IT management and operation. The focus is on the utilization of IT to automate, augment and enhance business processes, and IT delivery of the needed processes and information. This course aims to increase your management knowledge in organizational decision making regarding IT and to collaborate with business management when determining the strategies and tactics for the information technology in your company.

## MCIS GRADUATE CERTIFICATES

Students have the option of incorporating one or more Graduate Certificates into their MCIS degree. Many employers are looking for graduates with skills in business intelligence, IT project management, software development, networks, programming/coding, and cybersecurity.

While earning a certificate is not required, students may choose one or more areas of focus, to align with their career goals.

- All students take 15 credits of core MCIS coursework plus 18 credits of electives, to make up the 33 credit MCIS degree program and these courses may be used to earn one or more of the 5 optional MCIS certificates.
- A certificate application is required for each Graduate Certificate, at a cost of \$60 per application.
- Courses cannot be counted toward multiple certificates; however, students are allowed to count their certificate courses toward the MCIS degree and 1 certificate option.
- You must earn a 3.0 or higher cumulative GPA in your certificate courses to be eligible for the certificate.

