COMPUTER INFORMATION SYSTEMS (CIS)

CIS 101. Introduction to Applied Ai and Business Analytics. 3 Credits.
This course introduces students to the rapidly evolving fields of applied artificial intelligence (AI) and business analytics. Students explore fundamental AI concepts, learn how to leverage prompt engineering, and examine the latest generative AI tools shaping today's work environment. Through practical demonstrations and hands-on activities, students gain experience with applications of generative AI for various media types. Students also learn how to leverage AI-assisted business analytics using Excel. Additional topics include ethical considerations and emerging trends, ensuring that students can harness AI responsibly and effectively in any work environment.
Prerequisites: None
Offered: Every year, All

CIS 225. Systems Analysis and Design. 3 Credits.
This course provides an introduction to the phased, problem-solving approach commonly used by organizations to examine and improve their information systems. Topics include analysis of a business problem or opportunity; determining what role, if any, computer-based technologies can play in addressing the business need; articulating the business requirements for the technology-based solution; specifying alternative approaches to acquiring the technology capabilities needed to address the business requirements; and specifying the detailed requirements for the information systems solution.
Prerequisites: Take CIS 101.
Offered: Every year, Fall and Spring

CIS 245. Programming With Python. 3 Credits.
This course provides an introduction to object-oriented programming using a high-level programming language such as Python. The course covers the basics of how one constructs a program from a series of simple instructions. Basic features of functional and object-oriented programming are covered. Common programming techniques necessary to create simple but useful applications are explained.
Prerequisites: Take CIS 101
Offered: Every year, Fall and Spring

CIS 255. Data Visualization. 3 Credits.
This course provides an introduction as well as hands-on experience in the field of data visualization. Students learn basic visualization design and evaluation principles to create meaningful displays of quantitative and qualitative data. They also learn techniques for visualizing multivariate, temporal, text-based, geospatial, hierarchical and network/graph-based data.
Prerequisites: None
Offered: Every year, Spring
UC: Breadth Elective

CIS 265. Rapid Application Development. 3 Credits.
This project-based course covers the processes, tools, and issues involved in rapid application development using low-code/no-code platforms in a business context. Low-code/no-code platforms enable non-programmers to develop software applications through visual modeling instead of traditional programming. Students gain hands-on experience using various low-code/no-code platforms to rapidly develop software applications.
Prerequisites: None
Offered: As needed

CIS 267. Client-Side Web Development. 3 Credits.
This course introduces students to HTML and CSS, which are the core client-side programming languages used to build websites. In this project-based course, students learn how to develop modern websites using professional tools and workflows. Topics include design principles, responsive layouts, video and audio, accessibility, performance optimization and version control systems.
Prerequisites: None
Offered: Every year, Fall

CIS 300. Special Topics. 3 Credits.
Prerequisites: None
Offered: As needed

CIS 301. Enterprise Systems. 3 Credits.
An Enterprise Resource Planning (ERP) system is software that runs all areas of an organization including accounting and finance, human resources (HR), sales and distribution, production, purchasing and inventory. ERP systems are cross-functional, process-centered, and based on industry best practices. This course covers both ERP theory and practice; the course content includes the evolution of ERP systems, business process reengineering, process mapping, the ERP life cycle, ERP functionality, ERP add-ons and security and risk management issues.
Prerequisites: Take CIS 101.
Offered: As needed

CIS 350. Data Analysis with Excel (AC 350). 3 Credits.
This course utilizes advanced topics in Excel to solve a range of complex business problems. Topics include: spreadsheet design, the use of complex formulas, functions, list and data management, macros and Visual Basic for Applications.
Prerequisites: None
Offered: Every year, All
UC: Breadth Elective

CIS 351. Database Programming and Design. 3 Credits.
This course presents the use of database architecture and programming as a tool for developing integrated solutions for the information requirements of a modern business environment. Students work to identify business solutions by identifying the appropriate database design, and to understand how that design supports the business requirements. Students learn how to design, build and query databases using Microsoft SQL Server.
Prerequisites: None
Offered: Every year, Fall

CIS 360. Programming in Excel. 3 Credits.
This course teaches students how to create Excel macros in Visual Basic for Applications (VBA). In the course students will learn to create hotkeys, how to compile code, loops, and logic statements. No prior experience in coding is needed.
Prerequisites: Take CIS 245
Offered: As needed

CIS 371. Intro to Blockchain Tech for Business. 3 Credits.
This course introduces students to distributed ledger technologies, particularly blockchain technology, and its applications in business. Students gain a practical understanding of the inner workings of blockchain technology, including transactions, blocks, and mining. The course places an emphasis on the interplay of blockchain technology with other emerging technologies while providing students with the foundational knowledge to develop smart contracts and distributed application
Prerequisites: None
Offered: Every year, Spring

CIS 381. Server-Side Web Development. **3 Credits.**
This course introduces students to server-side programming, which is used to develop websites that can tailor their content to individual visitors. In this project-based course, students learn how to develop websites with server-side programming that adheres to industry best practices. Topics include architectural patterns, database integration, authentication, authorization, and security
Prerequisites: Take CIS 267.
Offered: Every year, Spring

CIS 411. Information Systems Security. **3 Credits.**
This course introduces students to the fundamental principles and topics of information technology security and risk management at the organizational level. Students learn critical security principles that enable them to plan, develop and perform security tasks. The course addresses hardware, software, processes, communications, applications and policies and procedures with respect to organizational IT security and risk management.
Prerequisites: Take CIS 101.
Offered: As needed

CIS 440. IT Project Management. **3 Credits.**
This course evaluates the principles of Agile Project Management, using the scrum framework. The roles, events, artifacts, gathering requirements, estimation, values, and theory from the scrum framework are evaluated. In addition, differences between agile and traditional project management methods of software development are described. Students work on a development project to get a hands-on experience of working on a scrum team.
Prerequisites: Take CIS 101.
Offered: Every year, Fall

CIS 484. Information Systems Internship. **3 Credits.**
Students gain experience by employing their skills in a professional setting under practicing professionals. This internship involves in-depth work related to user-defined information needs and is usually completed in the summer between the student's junior and senior years. Students must obtain approval and register prior to starting the work experience. Permission of department chair required.
Prerequisites: Take CIS 245.
Offered: As needed

CIS 490. Computer Information Systems Capstone. **3 Credits.**
Students employ skills learned in all other CIS coursework, and are required to deliver a project that may encompass project management, systems analysis and design, enterprise systems, database management systems and programming. Students are responsible for managing the entire project from conceptual design to final deliverable.
Prerequisites: Take CIS 245, CIS 351 CIS 440.
Offered: Every year, Spring