INFORMATION SYSTEMS AND TECHNOLOGY (IT)

IT104: Introduction to Cybersecurity
Entities and organizations must be able to protect not only their network infrastructure, but also their personnel and customers from data loss and identity theft. This course introduces the topic of cybersecurity and how it has evolved over the last several decades. In this course, you will examine the concepts and challenges of cybersecurity from its evolution over the past decades to the increasing cyberthreats that exist today. Evolving trends that impact cybersecurity will be discussed, including the use of mobile devices, cloud computing, and the increased sophistication of attacks. You will study cybersecurity's role in physical and cyber incidents. Cybersecurity design is examined from a high level, as is the role of the cybersecurity professional in today's information technology environment. This course is designed, among other things, to provide you with the foundational knowledge necessary to pursue relevant certifications. While the course may provide you with the knowledge necessary to sit for an examination, the University cannot guarantee your eligibility either to take an exam or to become certified.
Quarter Credit Hours: 5 | Prerequisite: None

IT104M1: Cybersecurity Overview
Examine the field of cybersecurity, including career opportunities and pathways to cybersecurity certifications.
Quarter Credit Hours: 1 | Prerequisite: None

IT104M2: Security Assessments
Discuss the role of security assessments.
Quarter Credit Hours: 1 | Prerequisite: None

IT104M3: Security Controls
Distinguish the roles of internal and external security controls.
Quarter Credit Hours: 1 | Prerequisite: None

IT104M4: Operations and Personnel Security
Identify operations security and personnel cybersecurity issues.
Quarter Credit Hours: 1 | Prerequisite: None

IT104M5: Current Threats and Future Issues
Explain current cybersecurity threats and the future of cybersecurity.
Quarter Credit Hours: 1 | Prerequisite: None

IT111: Programming Concepts
This course exposes you to programming language and concepts. You will practice modularization using a variety of methods; learn the value of creating reusable objects; and apply programming techniques of assignment, iteration, and decision-making.
Quarter Credit Hours: 5 | Prerequisite: None

IT111M1: Elements of Object Programming
Recognize the elements of object programming: classes, objects, and methods to application development.
Quarter Credit Hours: 1 | Prerequisite: None

IT111M2: Parameters and Arguments
Apply the programming constructs of parameters and arguments.
Quarter Credit Hours: 1 | Prerequisite: None

IT111M3: Iteration, Assignment, and Decision-Making
Apply the programming constructs of iteration, assignment, and decision-making.
Quarter Credit Hours: 1 | Prerequisite: None

IT111M4: Functions
Apply the programming constructs of functions.
Quarter Credit Hours: 1 | Prerequisite: None

IT111M5: Storyboards for Design
Implement programming design concepts through creation of storyboards.
Quarter Credit Hours: 1 | Prerequisite: None

IT117: Website Development
In this course, you investigate Internet technologies. You learn the concepts of web development along with web page design. By creating an individual online portfolio or biography using HTML, HTML5, and CSS (Cascading Style Sheets), you develop skills for today and tomorrow. This course will enable you to self-promote and demonstrate your skills to an audience via the web.
Quarter Credit Hours: 5 | Prerequisite: None

IT117M1: Website Project Planning
Complete a detailed plan for a website project in a formal design document.
Quarter Credit Hours: 1 | Prerequisite: None

IT117M2: HTML and Images
Apply HTML and images to create professional web pages.
Quarter Credit Hours: 1 | Prerequisite: None

IT117M3: CSS and HTML
Integrate CSS with HTML to create a visually appealing website.
Quarter Credit Hours: 1 | Prerequisite: None

IT117M4: HTML Forms
Develop HTML forms with form-field validation.
Quarter Credit Hours: 1 | Prerequisite: None

IT117M5: Constructing Functional Websites
Construct a well-designed and fully functional website using HTML and CSS.
Quarter Credit Hours: 1 | Prerequisite: None

IT117M6: Storyboards
Implement programming design concepts through creation of storyboards.
Quarter Credit Hours: 1 | Prerequisite: None

IT117M7: Programming for Design
Apply the programming constructs of functions.
Quarter Credit Hours: 1 | Prerequisite: None

IT133: Microsoft Office Applications on Demand
Use the computer operating system and cloud-based file management systems. You will also learn how to manage files.
Quarter Credit Hours: 5 | Prerequisite: None

IT133M1: Operating System and Services
Analyze appropriate software application(s) to address solutions within a specific discipline.
Quarter Credit Hours: 1 | Prerequisite: None

IT133M2: Word Processing Skills
Create documents using various functions of word processing software.
Quarter Credit Hours: 1 | Prerequisite: None

IT133M3: Spreadsheet Skills
Create spreadsheets using basic spreadsheet functions.
Quarter Credit Hours: 1 | Prerequisite: None

IT133M4: Computer Presentation Skills
Create computer-generated, on-screen presentations.
Quarter Credit Hours: 1 | Prerequisite: None

IT133M5: Software Solutions and Analysis
Analyze appropriate software application(s) to address solutions within a specific discipline.
Quarter Credit Hours: 1 | Prerequisite: None
IT153: Spreadsheet Applications
This course examines spreadsheet concepts including calculations, formulas, built-in functions, and spreadsheet design. You will create spreadsheets and manipulate data to solve business problems. The course further explores topics such as charts, data tables, pivot tables, and what-if analysis.
Quarter Credit Hours: 5 | Prerequisite: None

IT163: Database Concepts Using Microsoft Access
This course is an introduction to relational database management systems. You will use a relational database management system to create, maintain, and secure a database in order to analyze data. You will create filters, sorts, queries, forms, and reports. The course emphasizes the skills you need to meet user requirements.
Quarter Credit Hours: 5 | Prerequisite: None

IT163M1: Effective Design Concepts
Synthesize database concepts needed to effectively design a database.
Quarter Credit Hours: 1 | Prerequisite: None

IT163M2: Relational Databases
Create relational databases with multiple entities and relationships.
Quarter Credit Hours: 1 | Prerequisite: None

IT163M3: Database Forms
Create forms to input data.
Quarter Credit Hours: 1 | Prerequisite: None

IT163M4: Structured Query Language
Use Structured Query Language (SQL) to manage data.
Quarter Credit Hours: 1 | Prerequisite: None

IT163M5: Database Reports
Construct reports to retrieve data.
Quarter Credit Hours: 1 | Prerequisite: None

IT190: Information Technology Concepts
You will explore concepts of information technology including hardware, software, and networks. You will also gain a practical understanding of how computer hardware and operating systems work. Topics include personal computer configuration and maintenance, along with the essentials of system software installation and administration.
Quarter Credit Hours: 5 | Prerequisite: None

IT190M1: Hardware Components
Describe hardware components.
Quarter Credit Hours: 1 | Prerequisite: None

IT190M2: Software Applications
Explain different types of software applications.
Quarter Credit Hours: 1 | Prerequisite: None

IT190M3: System Software
Discuss the functions of system software.
Quarter Credit Hours: 1 | Prerequisite: None

IT190M4: Computer Network Components
Describe the components of a computer network.
Quarter Credit Hours: 1 | Prerequisite: None

IT190M5: Computer and Network Security
Explain how to secure and protect computers and computer networks.
Quarter Credit Hours: 1 | Prerequisite: None

IT213: Software Development Concepts
This course introduces the fundamentals of software engineering, demonstrating how the fundamentals are the same across multiple programming languages. The core principles found in every programming language are investigated. You will design, develop, debug, and test simple applications using your choice from the programming language options.
Quarter Credit Hours: 5 | Prerequisite: IT117

IT213M1: Software Construction Core Concepts
Create fundamental programs using concepts such as declaring and initializing variables and constants.
Quarter Credit Hours: 1 | Prerequisite: IT117

IT213M2: Decision Structures and Iteration
Create fundamental programs using concepts such as decision statements and iteration.
Quarter Credit Hours: 1 | Prerequisite: IT117

IT213M3: Software Development History and Modeling
Create plans for programs using an understanding of historical development of programming techniques and appropriate modeling techniques.
Quarter Credit Hours: 1 | Prerequisite: IT117

IT213M4: Functions and Arrays
Create fundamental programs using concepts such as functions and arrays.
Quarter Credit Hours: 1 | Prerequisite: IT117

IT213M5: Debugging and Testing
Apply the debugging and testing processes to programs containing fundamental concepts such as decision statements, iteration, functions, and arrays.
Quarter Credit Hours: 1 | Prerequisite: IT117

IT214: Foundations of Web Design
This is a fast-paced course in web design. You will learn the basic concepts of web page design. The concepts begin with the planning stages of site mapping and storyboards. Elements such as tables, forms, rollover buttons, hyperlinks, text formatting and management, navigation systems, and inserting multimedia will be explored. By creating an individual online portfolio or biography and implementing the current versions of Hypertext Markup Language (HTML) and Cascading Style Sheets (CSS), you will develop skills for today and tomorrow.
Quarter Credit Hours: 5 | Prerequisite: IT117 and IT111 (or equivalent)

IT222: Introduction to Cloud Computing
This course takes you beyond the definitions of cloud computing and into the realm of architecture-driven practices and principles. It will lead you from start to finish with the essential concepts and technologies of cloud computing, its history, innovation, and business rationale. The course will use informative case studies to illustrate the rich and real-world landscape of organizational decision making as it relates to cloud adoption and implementation. You will be exposed to cloud architectural models, service requirements, infrastructure, and security.
Quarter Credit Hours: 5 | Prerequisite: IT273

IT222M1: Cloud Computing Concepts
Describe the key terminologies, fundamental concepts, and models that define the cloud computing paradigm.
Quarter Credit Hours: 1 | Prerequisite: IT273

IT222M2: Moving to Cloud Computing
Investigate the business, economic, security, and productivity justifications and issues involved in moving to cloud computing.
Quarter Credit Hours: 1 | Prerequisite: IT273
IT222M3: Foundational Technologies and Architectures for Cloud Computing
Analyze the technologies and architectures that provide the foundation for cloud computing.
Quarter Credit Hours: 1 | Prerequisite: IT273

IT222M4: Cloud Computing Design Patterns and Architecture
Examine basic and advanced cloud computing design patterns and architectures.
Quarter Credit Hours: 1 | Prerequisite: IT273

IT222M5: Financial Considerations for Cloud Adoption
Use performance and cost metrics, as well as pricing models, to make decisions related to cloud adoption and management.
Quarter Credit Hours: 1 | Prerequisite: IT273

IT227: Cloud Infrastructure Administration
You will learn about administering infrastructure in the cloud. You will compare and contrast administering on-premise environments and cloud environments. Finally, you will complete hands-on labs in a cloud environment.
Quarter Credit Hours: 5 | Prerequisite: IT222

IT227M1: Information Technology Infrastructures
Analyze different types of information technology infrastructures.
Quarter Credit Hours: 1 | Prerequisite: IT222

IT227M2: Cloud Architecture Concepts
Summarize the cloud architecture as it relates to infrastructure.
Quarter Credit Hours: 1 | Prerequisite: IT222

IT227M3: Cloud Orchestration Concepts
Summarize cloud orchestration versus locally managed systems.
Quarter Credit Hours: 1 | Prerequisite: IT222

IT227M4: Cloud-Based Analysis
Analyze information after performing hands-on activities in the cloud.
Quarter Credit Hours: 1 | Prerequisite: IT222

IT227M5: Working With a Cloud Provider
Recommend a strategy when using a cloud provider.
Quarter Credit Hours: 1 | Prerequisite: IT222

IT232: Software Design and Development Concepts
This is an intermediate course in the design and development of programs offering students a choice of implementation and demonstrating how design and programming concepts are universal. Students will apply software design techniques, software process models, object-oriented programming concepts, and secure data-handling techniques. Students will design, develop, debug, and test intermediate-level applications using their choice from the programming language options.
Quarter Credit Hours: 5 | Prerequisite: IT213 | Corequisite: IT302 (recommended for Bachelor of Science in Information Technology students)

IT232M1: Software Process Models
Explore various software process models.
Quarter Credit Hours: 1 | Prerequisite: IT213 | Corequisite: IT302 (recommended for Bachelor of Science in Information Technology students)

IT232M2: Advanced Design Techniques
Compose software using advanced interface and program design techniques.
Quarter Credit Hours: 1 | Prerequisite: IT213 | Corequisite: IT302 (recommended for Bachelor of Science in Information Technology students)

IT232M3: Secure Data Handling Techniques
Select appropriate secure data handling techniques.
Quarter Credit Hours: 1 | Prerequisite: IT213 | Corequisite: IT302 (recommended for Bachelor of Science in Information Technology students)

IT232M4: Design Requirements
Construct a software test plan for validation and verification of design requirements.
Quarter Credit Hours: 1 | Prerequisite: IT213 | Corequisite: IT302 (recommended for Bachelor of Science in Information Technology students)

IT232M5: Object-Oriented Programming Concepts
Examine object-oriented programming concepts.
Quarter Credit Hours: 1 | Prerequisite: IT213 | Corequisite: IT302 (recommended for Bachelor of Science in Information Technology students)

IT234: Database Concepts
This course prepares you to learn database programming. You will be exposed to the essential concepts of database management systems and SQL programming language. This course will provide you with the business context in which data is used and how it is transformed into information. You will identify the information needs and general usage of data within the modern business context and link the use of relational database management systems to the data needs of the organization.
Quarter Credit Hours: 5 | Prerequisite: IT163

IT234M1: Database Management Concepts
Demonstrate the fundamental concepts of Database Management systems.
Quarter Credit Hours: 1 | Prerequisite: IT163

IT234M2: Data Definition Language
Explore data definition language (DDL) statements to define the database structure or schema.
Quarter Credit Hours: 1 | Prerequisite: IT163

IT234M3: Data Manipulation Language
Explore data manipulation language (DML) statements to manage data within schema objects.
Quarter Credit Hours: 1 | Prerequisite: IT163

IT234M4: Advanced SQL
Discover more advanced SQL such as security commands and logins.
Quarter Credit Hours: 1 | Prerequisite: IT163

IT234M5: Analytical and Non-Relational Database Alternatives
Investigate analytical and nonrelational database alternatives.
Quarter Credit Hours: 1 | Prerequisite: IT163

IT244: Python Programming
This course examines basic programming concepts using the Python language as the tool. Concepts studied include variables, data types, decision making, logical and relational operators, iteration, arrays, and other data structures. Additional course topics include file management and security, classes and related topics, and modules and other built-in tools.
Quarter Credit Hours: 3 | Prerequisite: None

IT244M1: Python Programming Fundamentals
Apply the basic concepts of programming using the Python language.
Quarter Credit Hours: 1 | Prerequisite: None

IT244M2: Python Functions and Classes
Analyze user-defined functions and classes in Python.
Quarter Credit Hours: 1 | Prerequisite: None
IT244M3: Python Tools and Modules
Examine Python versions, available system interfaces, built-in tools, and user-defined modules.
Quarter Credit Hours: 1 | Prerequisite: None

IT247: Fundamentals of Web Graphics
You will learn how to create appropriate web graphics using popular image editing tools. Throughout the course, you will create a collection of custom graphics that will be displayed in an e-Portfolio layout. Topics will include resizing, resolution, optimization, digital photo enhancement, custom banner and button creation, and more.
Quarter Credit Hours: 1 | Prerequisite: None

IT261: Desktop Administration
This course prepares networking students to install, configure, and administer a desktop operating system. You will learn to automate operating system installation, set up and manage user accounts, and configure local file systems. You will learn to configure and troubleshoot both local and network printers, manage and troubleshoot access to shared folders, and recover from system failures.
Quarter Credit Hours: 5 | Prerequisite: IT214

IT262: Certified Ethical Hacking I
This course covers the tools and procedures needed to perform ethical hacking. Ethical hacking, which is also known as penetration testing, is a procedure employed by organizations where the tester attempts to penetrate or compromise a computer or network. In so doing, organizational vulnerabilities are brought to light, which allows the organization to mitigate the vulnerabilities uncovered. This course is designed, among other things, to provide you with the foundational knowledge necessary to continue your studies for the EC-Council Certified Ethical Hacker certification. While the course may provide you with the knowledge necessary to sit for the examination, the University cannot guarantee your eligibility either to take this exam or become certified.
Quarter Credit Hours: 5 | Prerequisite: None

IT273: Networking Concepts
This course introduces the concepts behind today's networks. It outlines current network design, explaining the OSI Model and the methods of carrying data over wired and wireless media. Other topics include network design components, such as topologies and access methods, administration of network operating systems, and troubleshooting methods for data transmission and recovery.
Quarter Credit Hours: 5 | Prerequisite: None

IT273M1: Networking Concepts
Appraise network architectures, models, topologies, and structures used in networking.
Quarter Credit Hours: 1 | Prerequisite: None

IT273M2: Networked Environments
Differentiate between the various types of network media, TCP/IP core protocols, and IPv4 addressing schemes typically used in a networked environment.
Quarter Credit Hours: 1 | Prerequisite: None

IT273M3: Data Transmission
Analyze LAN switching methods and related devices used for data transmission.
Quarter Credit Hours: 1 | Prerequisite: None

IT273M4: Wide Area Networks and Wireless Technologies
Analyze wide area networks and wireless technologies used in organizational or individual computing.
Quarter Credit Hours: 1 | Prerequisite: None

IT273M5: Global Interconnectedness
Practice global interconnectedness as it applies to Information Technology.
Quarter Credit Hours: 1 | Prerequisite: None

IT275: Linux System Administration
This Linux course prepares you for the Linux Professional Institute's LPIC-1: System Administrator certification. You will learn to install, configure, administer, and secure the Linux operating system. Command-line instructions are heavily emphasized. Emphasis is placed on applied skills that address real-world challenges such as managing file structure, network services, and system security.
Quarter Credit Hours: 5 | Prerequisite: IT273

IT275M1: Linux Software Packaging System
Use the command line and the Linux software packaging system.
Quarter Credit Hours: 1 | Prerequisite: IT273

IT275M2: Configuring the Linux Operating System
Configure the key features of the Linux operating system.
Quarter Credit Hours: 1 | Prerequisite: IT273

IT275M3: Modifying Files
Modify the files in Linux.
Quarter Credit Hours: 1 | Prerequisite: IT273

IT275M4: Creating Accounts
Create user and group accounts within Linux.
Quarter Credit Hours: 1 | Prerequisite: IT273

IT275M5: Configuring Security
Configure security within the Linux operating system.
Quarter Credit Hours: 1 | Prerequisite: IT273

IT277: Certified Information Systems Security Professional I
This course covers the essential material comprising the first two study domains in the Certified Information Systems Security Professional Common Body of Knowledge (CBK). Domain 1 is about Security and Risk Management; Domain 2 is about Asset Security. The information covered is vital in gaining a threshold understanding of the field of cybersecurity. These two domains will enable you to learn the essentials of security governance, risk management, business continuity planning, laws, regulations and compliance, and the secure protection of assets. This course is designed, among other things, to provide you with the foundational knowledge necessary to pursue CISSP certification. While the course may provide you with the knowledge necessary to sit for the examination, the University cannot guarantee your eligibility either to take this exam or become certified.
Quarter Credit Hours: 5 | Prerequisite: None

IT278: Network Administration
In many organizations, the network administrator is the wizard behind the curtain. Network connections between users and computers seem to magically perform the transmissions required for daily operations. In this course, you are introduced to basic network administration. You install and configure a network operating system in a virtualized environment and practice administrative tasks. You perform hands-on exercises demonstrating server management, user account creation, file access, storage backup, and security settings.
Quarter Credit Hours: 5 | Prerequisite: IT273

IT278M1: Network Operating Systems
Examine the features, editions, roles, and installation methods of a network operating system.
Quarter Credit Hours: 1 | Prerequisite: IT273
IT278M5: Virtualization Management
Manage virtualization using Hyper-V.
Quarter Credit Hours: 1 | Prerequisite: IT273

IT279: Certified Information Systems Security Professional II
This course covers the essential material comprising three study domains in the Certified Information Systems Security Professional (CISSP) Common Body of Knowledge (CBK). These three domains are security engineering, network security, and software development security. The information covered is vital in gaining a threshold understanding of the field of cybersecurity, and will enable you to assess the vulnerabilities of security solutions, design secure communication channels, and apply security controls in the software development environment. This course is designed, among other things, to provide you with the foundational knowledge necessary to pursue CISSP certification. While the course may provide you with the knowledge necessary to sit for the examination, the University cannot guarantee your eligibility either to take this exam or become certified.
Quarter Credit Hours: 5 | Prerequisite: IT277

IT283: Networking with TCP/IP
This course provides a thorough examination of the protocols and services in the TCP/IP protocol suite. Students gain an understanding of how network traffic is encapsulated and transported by TCP/IP on local area networks and on wide area networks, including the Internet. Students learn about message addressing and forwarding, and how network errors are resolved.
Quarter Credit Hours: 5 | Prerequisite: IT277

IT283M1: TCP/IP, IPv4 and IPv6 Addressing, and Basic IP Packet Structures
Examine the TCP/IP networking model, IPv4 and IPv6 addressing, and basic IP packet structures.
Quarter Credit Hours: 1 | Prerequisite: IT273

IT283M2: Lower Layer Protocols
Analyze the protocols that operate at the lower layers of the TCP/IP model.
Quarter Credit Hours: 1 | Prerequisite: IT273

IT283M3: IPv6 Neighbor Discovery, Addressing, and Name Resolution
Analyze IPv6 Neighbor Discovery, and addressing and name resolution on IP networks.
Quarter Credit Hours: 1 | Prerequisite: IT273

IT283M4: TCP/IP Transport Layer Protocols
Examine TCP/IP Transport Layer Protocols.
Quarter Credit Hours: 1 | Prerequisite: IT273

IT283M5: IPv4 and IPv6 Comparison
Differentiate between IPv4 and IPv6 regarding deployment, benefits, and IP security.
Quarter Credit Hours: 1 | Prerequisite: IT273

IT286: Network Security Concepts
This course introduces you to the essential knowledge required to secure today's networks. You will learn to identify threats and vulnerabilities and to apply effective strategies to prevent data breaches. The course discusses topics such as risk assessment; compliance and operational security; access control and authorization management; intrusion detection; application hardening; malicious attacks; and cryptography. It outlines a security professional's responsibilities and discusses the skills needed to protect an organization's data and network infrastructure.
Quarter Credit Hours: 5 | Prerequisite: IT273

IT286M1: Risk Assessment and Network Monitoring
Examine the process of risk assessment and network monitoring.
Quarter Credit Hours: 1 | Prerequisite: IT273

IT286M2: Device and Infrastructure Security
Investigate device and infrastructure security, access control, authentication, and authorization.
Quarter Credit Hours: 1 | Prerequisite: IT273

IT286M3: Protections Measures
Explain the protection of wireless networks and cloud services, and the hardening of hosts and applications.
Quarter Credit Hours: 1 | Prerequisite: IT273

IT286M4: Cryptography
Examine cryptography methods, vulnerabilities, threats, and malicious attacks.
Quarter Credit Hours: 1 | Prerequisite: IT273

IT286M5: Security Awareness and Enforcement
Explore social engineering, security administration, disaster recovery, and incident response.
Quarter Credit Hours: 1 | Prerequisite: IT273

IT288: Security+ Certification Prep
This course focuses exclusively on CompTIA's Security+ Certification exam. Currently the SYO 401 exam consists of six domains. Time will be spent on each of the following: network security, compliance and operational security, threats and vulnerabilities, application data and host security, access control and identity management, and cryptography. This course is designed, among other things, to provide you with the foundational knowledge necessary to continue the pursuit of the Security+ certification. While the course may provide you with the knowledge necessary to sit for the examination, the University cannot guarantee your eligibility either to take this exam or become certified.
Quarter Credit Hours: 5 | Prerequisite: IT286 or permission of the Department Chair

IT296: Associate's-Level Information Technology Internship
This course gives associate's-level students practical job experience in the information technology field. The externship provides students an opportunity to learn about the IT career field through practical, real-world experiences and mentoring from an IT professional. This experience will enrich students' technology skills and provide a better understanding of the level of expertise needed to be successful in their career.
Quarter Credit Hours: 5 | Prerequisite: Completion of all core courses; minimum GPA of 2.0
IT299: Associate's Capstone in Information Technology
This course is designed to build on the concepts of all information technology courses you have taken as a part of your degree plan. The capstone course integrates problem-solving techniques and implementation solutions studied in the information technology courses. You will research particular problems or issues you select, analyze the major concerns, and recommend viable information technology solutions to resolve or improve the problems or issues.
Quarter Credit Hours: 5 | Prerequisite: Last term or permission from the Dean

IT301: Project Management I
This course introduces you to the principles of project management. You will gain knowledge of the project management skills and processes needed to select, initiate, and plan a project. You will explore the project management knowledge areas. Topics include creating the project charter, developing project scope statements, creating the project schedule and budget, and risk planning.
Quarter Credit Hours: 6 | Prerequisite: None

IT301M1: Project Management Framework
Analyze the Project Management Framework to identify relationships between process groups and knowledge management areas.
Quarter Credit Hours: 1 | Prerequisite: None

IT301M2: Triple Constraints Management
Create project artifacts to effectively establish project management triple constraints.
Quarter Credit Hours: 1 | Prerequisite: None

IT301M3: Project Risk and Resource Management
Create project artifacts to plan and manage project risk and resources.
Quarter Credit Hours: 1 | Prerequisite: None

IT301M4: Project Execution Management
Create project artifacts to effectively manage and control project execution.
Quarter Credit Hours: 1 | Prerequisite: None

IT301M5: Project Management Ethics and Integrity
Explain why ethics and integrity are important to the field of IT.
Quarter Credit Hours: 1 | Prerequisite: None

IT301M6: Project Management Global Interconnectedness
Practice global interconnectedness as it applies to your field of study.
Quarter Credit Hours: 1 | Prerequisite: None

IT302: Human Computer Interaction
This course introduces you to the field of human computer interaction (HCI). You will survey HCI history and theory, and examine standard principles that are necessary to produce effective interface designs for the consumer. You will also learn about development methodologies, evaluation techniques, task analysis, and prototyping. Activities include observation and analysis of various types of interfaces, plus the use of professional tools to create a new interface design.
Quarter Credit Hours: 6 | Prerequisite: 200-level or above IT course; upper-level students only

IT302M1: HCI Theories and Principles
Examine human-computer interaction theories and principles.
Quarter Credit Hours: 1 | Prerequisite: 200-level or above IT course; upper-level students only

IT302M2: HCI Principles and the Discovery Process
Evaluate human-computer interaction principles and the discovery process.
Quarter Credit Hours: 1 | Prerequisite: 200-level or above IT course; upper-level students only

IT302M3: Text and Typography in Design
Relate the value of screen components, color theories, and typography in human-computer interaction.
Quarter Credit Hours: 1 | Prerequisite: 200-level or above IT course; upper-level students only

IT302M4: Auditory Components
Assess auditory components, accessibility, and redundancy concepts for human-computer interaction.
Quarter Credit Hours: 1 | Prerequisite: 200-level or above IT course; upper-level students only

IT302M5: Haptics
Assess the future of haptics in interface design.
Quarter Credit Hours: 1 | Prerequisite: 200-level or above IT course; upper-level students only

IT302M6: Interface Design
Design a user interface with appropriate professional tools.
Quarter Credit Hours: 1 | Prerequisite: 200-level or above IT course; upper-level students only

IT303: Virtualization and Cloud Security
This computer virtualization course will include hands-on practice and is designed for individuals who have an understanding of operating systems and programming concepts. You will study several methods of applying virtualization locally and in a hosted environment. You will create a workable software program within a virtual server and in a cloud service solution. You will work in several cloud-based environments and learn how to protect their systems from outside and inside security threats.
Quarter Credit Hours: 6 | Prerequisite: IT213, IT222, and IT234

IT303M1: Virtual Operating System Concepts
Describe a virtual operating system and how it works.
Quarter Credit Hours: 1 | Prerequisite: IT213, IT222, and IT234

IT303M2: Implementing Virtual Machines and Applications
Implement virtual machines and applications within organizations.
Quarter Credit Hours: 1 | Prerequisite: IT213, IT222, and IT234

IT303M3: Virtualization Technologies
Analyze several types of virtualization technologies.
Quarter Credit Hours: 1 | Prerequisite: IT213, IT222, and IT234

IT303M4: Cloud-Based Solutions
Analyze several types of cloud-based solutions.
Quarter Credit Hours: 1 | Prerequisite: IT213, IT222, and IT234

IT303M5: Cloud Solution Cost Structures
Investigate the cost structure of cloud solutions as compared to on-premise systems.
Quarter Credit Hours: 1 | Prerequisite: IT213, IT222, and IT234

IT303M6: Addressing Cloud-Based Security Threats
Integrate solutions and strategies for cloud-based security threats.
Quarter Credit Hours: 1 | Prerequisite: IT213, IT222, and IT234
IT304: Application Development and Scripting in the Cloud
You will learn about the advantages of developing and deploying in cloud environments and compare the most popular cloud development platforms. You will become familiar with administrative and basic application programming in cloud environments using popular scripting languages and create your own scripts. You will evaluate software development lifecycle paradigms and select what best to use in a cloud environment.
Quarter Credit Hours: 6 | Prerequisite: IT213 and IT234; IT303 recommended

IT304M1: Cloud Architecture for Software Development
Investigate cloud architecture for software development.
Quarter Credit Hours: 1 | Prerequisite: IT213 and IT234; IT303 recommended

IT304M2: Scripting Languages Concepts
Investigate scripting languages.
Quarter Credit Hours: 1 | Prerequisite: IT213 and IT234; IT303 recommended

IT304M3: Implementing Scripting Languages in the Cloud
Explain how to use scripting languages for cloud solutions.
Quarter Credit Hours: 1 | Prerequisite: IT213 and IT234; IT303 recommended

IT304M4: Programming Practices
Apply programming practices using scripting languages.
Quarter Credit Hours: 1 | Prerequisite: IT213 and IT234; IT303 recommended

IT304M5: Comparing Scripting Languages
Synthesize information when comparing popular scripting languages.
Quarter Credit Hours: 1 | Prerequisite: IT213 and IT234; IT303 recommended

IT304M6: Cloud-Based Software Development
Recommend a software development life cycle for cloud-based software development.
Quarter Credit Hours: 1 | Prerequisite: IT213 and IT234; IT303 recommended

IT306: Cloud Services Management
You will explore standards, frameworks, laws, and regulations around cloud services. You will develop processes and procedures for use-case scenarios.
Quarter Credit Hours: 6 | Prerequisite: IT303

IT306M1: Regulating the Cloud Environment
Explore specific laws, regulations, and standards that apply to cloud-based environments.
Quarter Credit Hours: 1 | Prerequisite: IT303

IT306M2: Governance Considerations for Cloud Migration
Explain governance considerations to ensure successful on-premise to cloud migration.
Quarter Credit Hours: 1 | Prerequisite: IT303

IT306M3: Cloud Architecture for Systems
Analyze cloud architecture as it relates to systems for the cloud.
Quarter Credit Hours: 1 | Prerequisite: IT303

IT306M4: Service-Level Agreements
Analyze service-level agreements for cloud providers.
Quarter Credit Hours: 1 | Prerequisite: IT303

IT306M5: Functionality and Security Requirements for Cloud Environments
Synthesize functionality and security requirements for cloud environments that balance performance and security needs.
Quarter Credit Hours: 1 | Prerequisite: IT303

IT306M6: Designing Cloud Services
Recommend effective approaches for planning, designing, and implementing a successful cloud service for various business scenarios.
Quarter Credit Hours: 1 | Prerequisite: IT303

IT316: Computer Forensics
This course explores the pervasive nature of illegal and unauthorized activity occurring in cyberspace: computer crime. You will learn about the many types of computer crime and the structured procedures deployed in its investigation. This will include a systematic investigative approach of both corporate and criminal-related offenses. You will learn data-retrieval principles including onsite data collection, laboratory data retrieval, and live network data retrieval. You will learn how current computer forensics tools are used for data acquisitions to data analysis. This course will also discuss how computer crimes present unique vulnerabilities to computer systems due to the global nature of the Internet.
Quarter Credit Hours: 6 | Prerequisite: None

IT316M1: Computers and Criminal Behavior
Examine the relationship of computers and criminal behavior.
Quarter Credit Hours: 1 | Prerequisite: None

IT316M2: Computer Forensics as a Profession
Describe the field of computer forensics and investigations as a profession.
Quarter Credit Hours: 1 | Prerequisite: None

IT316M3: Computer Forensics Processes
Analyze the processes involved in computer forensics.
Quarter Credit Hours: 1 | Prerequisite: None

IT316M4: Data Acquisition Methods
Examine various data acquisition methods.
Quarter Credit Hours: 1 | Prerequisite: None

IT316M5: Computer Forensics Tools
Compare current computer forensic tools.
Quarter Credit Hours: 1 | Prerequisite: None

IT316M6: Data Analysis and Validation Techniques
Recommend techniques of data analysis and validation for high-tech investigations.
Quarter Credit Hours: 1 | Prerequisite: None

IT331: Technology Infrastructure
This course explores the concepts and purpose of information technology infrastructure. Emphasis is placed on expanding your knowledge of computer networks and data transmissions and applying those concepts to an organization’s technology requirements.
Quarter Credit Hours: 6 | Prerequisite: 200-level or above IT course; upper-level students only

IT331M1: Networking Skills for Project Success
Describe how networking skills can improve project success.
Quarter Credit Hours: 1 | Prerequisite: 200-level or above IT course; upper-level students only

IT331M2: Key Infrastructure Components
Analyze the functions of key components in information technology infrastructure.
Quarter Credit Hours: 1 | Prerequisite: 200-level or above IT course; upper-level students only
IT331M3: IT Infrastructure Planning
Plan an effective IT infrastructure based on the needs of an organization.
Quarter Credit Hours: 1 | Prerequisite: 200-level or above IT course; upper-level students only

IT331M4: Wide Area Network Technologies
Evaluate Wide Area Network (WAN) technologies.
Quarter Credit Hours: 1 | Prerequisite: 200-level or above IT course; upper-level students only

IT331M5: Global Interconnectedness in Technology Infrastructure
Practice global interconnectedness as it applies to your field of study.
Quarter Credit Hours: 1 | Prerequisite: 200-level or above IT course; upper-level students only

IT331M6: Network Security Design
Formulate a network security design.
Quarter Credit Hours: 1 | Prerequisite: 200-level or above IT course; upper-level students only

IT332: Principles of Information Systems Architecture
This course introduces you to the background of information systems architecture. You will learn a holistic approach to both hardware and software architecture design from a broad systems perspective. Both a business and technical focus will be covered with concrete examples of current technologies and related managerial issues.
Quarter Credit Hours: 6 | Prerequisite: IT331

IT332M1: Binary Language
Analyze the language of computers.
Quarter Credit Hours: 1 | Prerequisite: IT331

IT332M2: The Computer as a System
Analyze the computer as a system.
Quarter Credit Hours: 1 | Prerequisite: IT331

IT332M3: System Architecture Components
Evaluate CPU, RAM, input, output, and peripheral devices as components used in system architecture.
Quarter Credit Hours: 1 | Prerequisite: IT331

IT332M4: Data Communication and Networking
Assess data communication and networking options for a computer system.
Quarter Credit Hours: 1 | Prerequisite: IT331

IT332M5: Data Storage and Protection
Recommend data storage and data protection technology for a computer system.
Quarter Credit Hours: 1 | Prerequisite: IT331

IT332M6: Computer Operating Systems
Differentiate between various computer operating systems.
Quarter Credit Hours: 1 | Prerequisite: IT331

IT333: Emerging Technologies and the Future
This course identifies specific technologies and highlights the dramatic and rapid changes happening in information and knowledge processing and distribution. The course introduces each technology and its basic functionality. You should expect to leave this course with a greater ability to assess and appreciate the impact that these changes will have. You will analyze technologies that affect the future of computing and society. Additionally, you will undertake an introductory investigation into the basic functionality of each. A listing will include, but may not be limited to, the following main areas, each of which breaks down with substantial further classification and detail: advances in cloud computing models, including fog and edge computing; Internet of Things (IoT); machine learning; artificial intelligence (AI); advances in computer architectures, including specialized Systems on Chip (SOCs); graphics processors and neural networks; data science; advanced generations of wireless cellular; blockchain technologies; automation and robotics. You will evaluate and analyze the impacts that these emerging technologies will have in relation to areas, such as world and local economies, privacy and security, work and employment, education and learning, business and entrepreneurship, war and the military, climate and health, government and politics, and the future of society.
Quarter Credit Hours: 3 | Prerequisite: None

IT350: Advanced Database Concepts
This course incorporates advanced concepts of the database language Transact-SQL (T-SQL) for creating efficient database implementations. You will use the T-SQL programming language and connect to an MS SQL Server database for displaying organized information to users. You will explore the various fundamental features of the T-SQL language such as DataTypes, Sets, and Built-in functions. You will explore the programmability of SQL by creating stored procedures; learn how to format a result set by sorting, filtering, and grouping; apply advanced SQL query techniques such as subqueries and common table expressions; use Report Builder to generate analytical reports from your data; and examine the use of non-SQL relational databases.
Quarter Credit Hours: 3 | Prerequisite: None

IT350M1: SQL Programming Concepts
Apply fundamental SQL programming concepts.
Quarter Credit Hours: 1 | Prerequisite: IT234

IT350M2: Designing Stored Procedures
Design simple stored procedures to meet business needs.
Quarter Credit Hours: 1 | Prerequisite: IT234

IT350M3: Creating Aggregated Business Report Datasets
Create aggregated business report datasets to format output and filter data.
Quarter Credit Hours: 1 | Prerequisite: IT234

IT350M4: Using Subqueries and Common Table Expressions
Explore techniques to ensure the database is secure.
Quarter Credit Hours: 1 | Prerequisite: IT234

IT350M5: Using Report Builder
Use a report builder to display and analyze information generated in an MS SQL server database.
Quarter Credit Hours: 1 | Prerequisite: IT234

IT350M6: Nonrelational Database Alternatives
Explore nonrelational database alternatives.
Quarter Credit Hours: 1 | Prerequisite: IT234
IT375: Windows Enterprise Administration
This advanced course in Microsoft Windows enterprise administration prepares you to install, configure, and manage key network services and Active Directory. You will perform administrative tasks such as network service installation and configuration; Active Directory installation; Group Policy design and configuration; and network and Active Directory security configuration. You will learn the theory behind Active Directory design and operation; and complete hands-on labs and projects that develop the skills needed for real-world settings.
Quarter Credit Hours: 6 | Prerequisite: IT278

IT375M1: Windows Server Installation
Install a current version of the Windows operating system into a virtual machine or hardware chassis.
Quarter Credit Hours: 1 | Prerequisite: IT278

IT375M2: Windows Server Advanced Configuration
Configure a current version of the Windows operating system including administration tools.
Quarter Credit Hours: 1 | Prerequisite: IT278

IT375M3: Windows Server Active Directory Configuration
Configure Active Directory and policy functions in a new domain on a current version of the Windows operating system.
Quarter Credit Hours: 1 | Prerequisite: IT278

IT375M4: Network Services and Components
Configure network services and components.
Quarter Credit Hours: 1 | Prerequisite: IT278

IT375M5: Network Policy
Implement network policy and monitoring to specific situations.
Quarter Credit Hours: 1 | Prerequisite: IT278

IT375M6: Security Functions
Apply security functions in a current version of the Windows operating system.
Quarter Credit Hours: 1 | Prerequisite: IT278

IT388: Routing and Switching I
This course is the first of two routing and switching courses that prepare you to design, configure, and maintain network routing and switching. You learn the basic concepts, protocols, and functions of network routers and switches. Emphasis is placed on hands-on practice of configuration and troubleshooting using live and simulated labs.
Quarter Credit Hours: 6 | Prerequisite: IT283

IT388M1: Network Routing and Switching Concepts
Explain network routing and switching concepts.
Quarter Credit Hours: 1 | Prerequisite: IT283

IT388M2: IP Addressing Concepts
Estimate an IP addressing scheme based on business needs.
Quarter Credit Hours: 1 | Prerequisite: IT283

IT388M3: Router and Switching Configurations
Apply router and switching configurations to meet business needs.
Quarter Credit Hours: 1 | Prerequisite: IT283

IT388M4: Network Routing Protocols
Investigate network routing protocols to meet business requirements.
Quarter Credit Hours: 1 | Prerequisite: IT283

IT388M5: VLAN Design
Design VLANs based on specific situations.
Quarter Credit Hours: 1 | Prerequisite: IT283

IT388M6: Routing and Switching Proposals
Prepare routing and switching proposals for management approval.
Quarter Credit Hours: 1 | Prerequisite: IT283

IT390: Intrusion Detection and Incident Response
This course provides an introduction to intrusion detection systems available to protect networks from cybercriminals. You will explore various security concepts and the basics of security attacks. You will install and configure various intrusion detection system tools. Topics include principles and classifications of intrusion detection systems, incident response process, and response types. Additionally, the course presents insight into intrusion detection and forensics and incident response strategies required to protect critical assets.
Quarter Credit Hours: 6 | Prerequisite: IT286

IT390M1: Principles and Concepts
Discuss intrusion detection and incident response principles and concepts.
Quarter Credit Hours: 1 | Prerequisite: IT286

IT390M2: Comparing Intrusion Detection Systems
Compare intrusion detection systems.
Quarter Credit Hours: 1 | Prerequisite: IT286

IT390M3: Responding to Threats
Analyze the security threat spectrum.
Quarter Credit Hours: 1 | Prerequisite: IT286
IT390M4: Installing and Examining Intrusion Detection Systems  
Demonstrate the ability to install and examine intrusion detection system tools.  
Quarter Credit Hours: 1 | Prerequisite: IT286

IT390M5: Security Analytics  
Interpret various security analytic measures.  
Quarter Credit Hours: 1 | Prerequisite: IT286

IT390M6: Incident Response Strategies  
Differentiate incident response strategies.  
Quarter Credit Hours: 1 | Prerequisite: IT286

IT391: Advanced Software Development Including Web and Mobility  
This course focuses on advanced design and programming concepts and techniques offering you a choice of implementation and demonstrating how advanced concepts apply across a variety of languages. You will develop advanced software, web, and mobile applications, while applying concepts related to data structures, algorithms, web services, graphics, mobile, and multimedia. You also learn how to create interactive applications across a variety of platforms (traditional applications, websites, and mobile applications).  
Quarter Credit Hours: 6 | Prerequisite: IT232, IT234, and IT302

IT395: Certified Ethical Hacking II  
This course continues concepts introduced in IT262 covering the tools and procedures needed to perform ethical hacking. More advanced penetration testing procedures are covered as well as how to incorporate the knowledge learned into a cohesive set of procedures to help organizations find potential vulnerabilities. This course is designed, among other things, to provide you with the foundational knowledge necessary to continue the pursuit of the EC-Council Certified Ethical Hacker certification. While the course may provide you with the knowledge necessary to sit for the examination, the University cannot guarantee your eligibility either to take this exam or become certified.  
Quarter Credit Hours: 6 | Prerequisite: IT262

IT400: Ethics in Cybersecurity  
New innovations within information technology continue to evolve around the world, creating ethical challenges and concerns for information technology professionals. This course will examine ethical and legal concerns with the use of information technology. Ethical issues will be examined as they relate to common information systems. Additional topics including privacy, regulations, as well as societal and cultural influences on decision making will be examined.  
Quarter Credit Hours: 6 | Prerequisite: None

IT401: Project Management II  
This course is the second of two project management courses and explores more advanced topics. You will gain knowledge of the project management skills and processes needed to execute, control, and close a project. Topics include planning project resources, developing the project team, conducting procurements, measuring project performance, controlling work results, and applying professional responsibility.  
Quarter Credit Hours: 6 | Prerequisite: IT301

IT402: IT Consulting Skills  
This course will introduce you to the theory and practice of IT consulting. You examine the processes and techniques associated with the consulting field. Business aptitude skills will be taught including communication, ethics, presentation, and leadership skills. Additionally, project definition and analysis, project planning, gathering user and project requirements, executing projects, time management, and the history of consulting will be examined. Through case studies, you prepare a project proposal and a persuasive presentation for an organization.  
Quarter Credit Hours: 6 | Prerequisite: 200-level or above IT course; upper-level students only

IT402M1: Consulting and Ethics  
Justify ethical decisions with IT consulting.  
Quarter Credit Hours: 1 | Prerequisite: 200-level or above IT course; upper-level students only

IT402M2: Time and Resource Management  
Generate time management and analysis representations.  
Quarter Credit Hours: 1 | Prerequisite: 200-level or above IT course; upper-level students only

IT402M3: Interpersonal Skills  
Develop skills for negotiation, decision-making, and other people-related processes with IT consulting.  
Quarter Credit Hours: 1 | Prerequisite: 200-level or above IT course; upper-level students only

IT402M4: Consulting History and Global Views  
Appraise historical and international facets of IT consulting.  
Quarter Credit Hours: 1 | Prerequisite: 200-level or above IT course; upper-level students only

IT402M5: The Consulting Project Proposal  
Create a project proposal with a unique vision.  
Quarter Credit Hours: 1 | Prerequisite: 200-level or above IT course; upper-level students only

IT402M6: Persuasive Presentations  
Generate persuasive materials for IT consulting.  
Quarter Credit Hours: 1 | Prerequisite: 200-level or above IT course; upper-level students only

IT403: Advanced Cloud Security  
You will investigate cloud security to include vetting cloud providers. The course content helps you examine information assurance, risk management, and governance of cloud security.  
Quarter Credit Hours: 6 | Prerequisite: None

IT403M1: Cloud Architecture Security  
Explore security as it relates to cloud architecture.  
Quarter Credit Hours: 1 | Prerequisite: None

IT403M2: Provider Regulations and Standards  
Explore regulations and standards available from various cloud providers.  
Quarter Credit Hours: 1 | Prerequisite: None

IT403M3: Cloud-Based Risk Assessment Concepts  
Explain risk assessment in a cloud environment.  
Quarter Credit Hours: 1 | Prerequisite: None

IT403M4: Risk Assessment Practices  
Explore attack vectors in a cloud environment.  
Quarter Credit Hours: 1 | Prerequisite: None

IT403M5: Security Factors for Cloud Migrations  
Synthesize the security factors to consider during migration of systems, applications, data, and databases to a cloud environment.  
Quarter Credit Hours: 1 | Prerequisite: None
IT403M6: Recommended Cloud Solutions and Security
Recommend appropriate cloud solutions and cloud security for various business scenarios.
Quarter Credit Hours: 1 | Prerequisite: None

IT404: Security Testing for Cloud Applications
You will identify applications and instances to test and select the appropriate tools to perform security testing. You will execute the tests and communicate the results to stakeholders.
Quarter Credit Hours: 6 | Prerequisite: IT304 and IT403

IT404M1: Software Development Testing Techniques
Investigate software development testing techniques.
Quarter Credit Hours: 1 | Prerequisite: IT304 and IT403

IT404M2: Security Testing Techniques
Investigate security testing techniques for cloud-based systems.
Quarter Credit Hours: 1 | Prerequisite: IT304 and IT403

IT404M3: Testing Procedures for Cloud-Based Applications
Explain the differences in testing cloud-based applications as compared to traditional software applications.
Quarter Credit Hours: 1 | Prerequisite: IT304 and IT403

IT404M4: Security Testing for Cloud Applications
Perform security testing on cloud applications.
Quarter Credit Hours: 1 | Prerequisite: IT304 and IT403

IT404M5: Security Testing Strategy Alignment
Synthesize security testing strategies based on project requirements.
Quarter Credit Hours: 1 | Prerequisite: IT304 and IT403

IT404M6: Security Testing Strategies
Recommend a strategy for security testing of a cloud-based application.
Quarter Credit Hours: 1 | Prerequisite: IT304 and IT403

IT410: Certified Information Systems Security Professional III
This course primarily addresses two domains in the Certified Information Systems Security Professional CBK (Common Body of Knowledge). The two domains are (1) security assessment and testing and (2) security operations. The security assessment and testing domain explores vulnerability assessments and secure software testing strategies. The domain of security operations details how to manage change and respond to incidents. There will also be a discussion of two important topics that were not examined in Domain 1 of the CISSP I course. These topics are professional ethics and legal and regulatory issues. This course is designed, among other things, to provide you with the foundational knowledge necessary to pursue CISSP certification. While the course may provide you with the knowledge necessary to sit for the examination, the University cannot guarantee your eligibility either to take this exam or become certified.
Quarter Credit Hours: 6 | Prerequisite: IT286

IT411M1: Digital Forensic Concepts and Techniques
Examine digital forensic concepts and techniques.
Quarter Credit Hours: 1 | Prerequisite: IT286

IT411M2: Securing Digital Evidence
Plan appropriate methods to secure digital evidence.
Quarter Credit Hours: 1 | Prerequisite: IT286

IT411M3: Examining Forensic Data
Apply various types of forensic analysis tools for data recovery to forensic scenarios.
Quarter Credit Hours: 1 | Prerequisite: IT286

IT411M4: Audits and Investigations
Prepare audits and investigations of electronic computing devices.
Quarter Credit Hours: 1 | Prerequisite: IT286

IT411M5: Analyzing System Files and Artifacts
Analyze forensic data from computers to investigate security breaches.
Quarter Credit Hours: 1 | Prerequisite: IT286

IT411M6: Current Practices and Trends
Investigate current practices and trends in digital and network forensics.
Quarter Credit Hours: 1 | Prerequisite: IT286

IT412: Information Systems Security
Businesses must be able to protect their networks and infrastructures from security attacks. In this course, you learn to investigate system vulnerabilities and implement security solutions. Topics in this course include access control, application security, business continuity and disaster recovery planning, cryptography, information security and risk management, compliance and investigations, operations security, physical security, security architecture and design, telecommunications, and network security. This course is designed, among other things, to provide you with the requisite knowledge to sit for the Certified Information Systems Security Professional exam. While the course may provide the knowledge necessary to sit for the examination, the University cannot guarantee your eligibility either to take this exam or become certified.
Quarter Credit Hours: 6 | Prerequisite: IT286

IT412M1: Information Security Concepts
Examine information security concepts.
Quarter Credit Hours: 1 | Prerequisite: IT286

IT412M2: System Vulnerability and Threats
Analyze system vulnerabilities and threats.
Quarter Credit Hours: 1 | Prerequisite: IT286

IT412M3: Cryptography Techniques
Choose data encryption techniques and confidentiality best practices.
Quarter Credit Hours: 1 | Prerequisite: IT286

IT412M4: Operational Security and Incident Planning
Employ solutions that provide protection against system attacks.
Quarter Credit Hours: 1 | Prerequisite: IT286

IT412M5: Disaster Recovery Planning
Develop information backup and data persistence procedures.
Quarter Credit Hours: 1 | Prerequisite: IT286

IT412M6: Network Security Policies and Procedures
Design network security policies and procedures.
Quarter Credit Hours: 1 | Prerequisite: IT286
IT414: Migrating Data and Applications to the Cloud
You will analyze various scenarios regarding data/database and application migrations to a cloud environment. Lab environments provide hands-on experience related to migration scenarios.
Quarter Credit Hours: 6 | Prerequisite: None

IT413M1: Application and Data Migration in the Cloud
Explore cloud architecture as it relates to application and data migration. Quarter Credit Hours: 1 | Prerequisite: None

IT413M2: Application and Data Migration Strategies
Explore data and application migration strategies and practices for on-premise systems to the cloud.
Quarter Credit Hours: 1 | Prerequisite: None

IT413M3: Cloud Migration Concepts
Apply migration strategies for moving data to the cloud.
Quarter Credit Hours: 1 | Prerequisite: None

IT413M4: Migration Procedures
Explain the procedure and processes for migrating data and applications to the cloud.
Quarter Credit Hours: 1 | Prerequisite: None

IT413M5: Business Requirements for Migrations
Synthesize business requirements as they relate to migrating a system(s) to the cloud.
Quarter Credit Hours: 1 | Prerequisite: None

IT413M6: Recommended Cloud Migration Strategies
Recommend a migration strategy for a cloud-based system(s).
Quarter Credit Hours: 1 | Prerequisite: None

IT414: Software Development Operations in Cloud Environments
You will examine the software development life cycle (SDLC) and development operations in a cloud. This includes the ability to implement and manage continuous delivery systems and methodologies.
Quarter Credit Hours: 6 | Prerequisite: None

IT414M1: Cloud Architecture and Software Development
Review cloud architecture as it relates to software development.
Quarter Credit Hours: 1 | Prerequisite: None

IT414M2: Development Operations
Explore development operations for software development.
Quarter Credit Hours: 1 | Prerequisite: None

IT414M3: Continuous Delivery Concepts
Analyze continuous delivery as it relates to software development in the cloud.
Quarter Credit Hours: 1 | Prerequisite: None

IT414M4: Managing Software Development in the Cloud
Explain the differences and similarities when managing cloud-based software development products and/or services compared to on-premise software development products and/or services.
Quarter Credit Hours: 1 | Prerequisite: None

IT414M5: Software Development Operations
Synthesize software development operations based on different types of cloud products and/or services.
Quarter Credit Hours: 1 | Prerequisite: None

IT414M6: Business Practices for Cloud-Based Software Development
Recommend business practices for cloud-based software development operations.
Quarter Credit Hours: 1 | Prerequisite: None

IT441: Directed Studies, School of Information Technology
In this course, students in the School of Information Technology will engage in an independent, directed-study project focused on a student-submitted topic of inquiry. The student will select a topic of inquiry that is of interest and relevant to his or her professional goals.
Quarter Credit Hours: 1 | Prerequisite: CM220; upper-level students only

IT442: Directed Studies, School of Information Technology
In this course, students in the School of Information Technology will engage in an independent, directed-study project focused on a student-submitted topic of inquiry. The student will select a topic of inquiry that is of interest and relevant to his or her professional goals.
Quarter Credit Hours: 2 | Prerequisite: CM220; upper-level students only

IT443: Directed Studies, School of Information Technology
In this course, students in the School of Information Technology will engage in an independent, directed-study project focused on a student-submitted topic of inquiry. The student will select a topic of inquiry that is of interest and relevant to his or her professional goals.
Quarter Credit Hours: 3 | Prerequisite: CM220; upper-level students only

IT444: Directed Studies, School of Information Technology
In this course, students in the School of Information Technology will engage in an independent, directed-study project focused on a student-submitted topic of inquiry. The student will select a topic of inquiry that is of interest and relevant to his or her professional goals.
Quarter Credit Hours: 4 | Prerequisite: CM220; upper-level students only

IT445: Directed Studies, School of Information Technology
In this course, students in the School of Information Technology will engage in an independent, directed-study project focused on a student-submitted topic of inquiry. The student will select a topic of inquiry that is of interest and relevant to his or her professional goals.
Quarter Credit Hours: 5 | Prerequisite: CM220; upper-level students only

IT446: Directed Studies, School of Information Technology
In this course, students in the School of Information Technology will engage in an independent, directed-study project focused on a student-submitted topic of inquiry. The student will select a topic of inquiry that is of interest and relevant to his or her professional goals.
Quarter Credit Hours: 6 | Prerequisite: CM220; upper-level students only

IT458: Oracle Database Administration
This course covers database administration using Oracle tools. You will focus on the following: installing database management software and utilities, controlling access to data and resources, troubleshooting an Oracle database, the backup and recovery of Oracle databases, and resolving common performance problems using Oracle.
Quarter Credit Hours: 6 | Prerequisite: IT358

IT460: Systems Analysis and Design
This course provides an overview of the system development life cycle (SDLC), including the modification and design process. You will learn to choose a system development methodology and evaluate the impact on the organization’s strategic plan. It emphasizes the factors for effective communication with users and team members and all those associated with development and maintenance of the system.
Quarter Credit Hours: 6 | Prerequisite: 200-level or above IT course; upper-level students only

IT460M1: Information Systems Concepts
Compare various types of information systems.
Quarter Credit Hours: 1 | Prerequisite: 200-level or above IT course; upper-level students only
IT460M2: Developing Logical Systems Models
Develop logical models for a proposed system.
Quarter Credit Hours: 1 | Prerequisite: 200-level or above IT course; upper-level students only

IT460M3: Object Modeling
Apply object-oriented modeling tools and techniques in designing information systems.
Quarter Credit Hours: 1 | Prerequisite: 200-level or above IT course; upper-level students only

IT460M4: Development Strategies
Implement the systems development life cycle (SDLC) framework for project exploration.
Quarter Credit Hours: 1 | Prerequisite: 200-level or above IT course; upper-level students only

IT460M5: Systems Architecture
Integrate models and diagrams.
Quarter Credit Hours: 1 | Prerequisite: 200-level or above IT course; upper-level students only

IT460M6: Systems Implementation
Design systems implementation.
Quarter Credit Hours: 1 | Prerequisite: 200-level or above IT course; upper-level students only

IT471: Routing and Switching II
This course is the second of two routing and switching courses and explores more advanced topics. You will design, configure, reconfigure, and maintain network routing and switching devices. You will also learn advanced concepts in protocols, resource access, and disaster recovery. Emphasis is placed on planning, proposing, and securing network infrastructure.
Quarter Credit Hours: 6 | Prerequisite: IT388

IT471M1: IP Addressing Schemes
Prepare an IP scheme for a small network to submit for management approval.
Quarter Credit Hours: 1 | Prerequisite: IT388

IT471M2: Routing and Switching Configuration
Configure routing and switching devices per plans and specifications.
Quarter Credit Hours: 1 | Prerequisite: IT388

IT471M3: Advanced Routing and Switching Concepts
Explore advanced network routing and switching concepts.
Quarter Credit Hours: 1 | Prerequisite: IT388

IT471M4: Network Design
Prepare network designs based on specific criteria.
Quarter Credit Hours: 1 | Prerequisite: IT388

IT471M5: Disaster Recovery with WANs
Prepare a disaster recovery plan for a routed infrastructure.
Quarter Credit Hours: 1 | Prerequisite: IT388

IT471M6: Network Health
Prepare routing and switching proposals for management approval.
Quarter Credit Hours: 1 | Prerequisite: IT388

IT473: Bachelor's Capstone in Cloud Computing and Solutions
The Bachelor's Capstone in Cloud Computing and Solutions builds on the concepts of all information technology and cloud computing courses you have taken as a part of your degree plan. The capstone project integrates problem-solving techniques and the development and implementation of viable, student-developed solutions to meet an identified technology or design need in a business or institutional environment. You will demonstrate mastery of cloud computing and solutions by completing a course-long project.
Quarter Credit Hours: 6 | Prerequisite: Last term or permission from the Program Chair

IT478: Web Servers and Security
This course teaches you to install and configure popular web server software. You will learn to determine user access levels, as well as server authentication and server-side programming. Various issues involving web security are discussed, including web/client security and intrusion detection and recovery.
Quarter Credit Hours: 6 | Prerequisite: IT273

IT479: Bachelor's-Level Cybersecurity Internship
This course is taken at the conclusion of the cybersecurity degree and incorporates practical job experience with the skills and knowledge gained from prior coursework. You will work with instructors and other students on real-world projects that may include security system design, forensic analysis, or recommendations for an organization's security infrastructure. This course will enable you and your team members to practice your problem-solving talents. Along with timelines and project plans, your team will consider other business constraints.
As is a requirement for most information technology projects, each security project may include evaluation mechanisms, hands-on demonstrations, examples for stakeholders, and a final roll-up of future project improvements. Internships must be preapproved by the Dean prior to the start of the term. Students who fail this course on the first attempt may not reenroll in this course without the Dean's approval.
Quarter Credit Hours: 6 | Prerequisite: IT350 and IT391

IT481: Advanced Software Development
This course addresses advanced software design and development concepts, offering you a choice of implementations demonstrating how the concepts apply across a variety of languages. You will apply analysis and benchmarking, database creation and usage, data in motion and data at rest security, threading, reentrancy, and advanced testing concepts. You will also learn how to package software for distribution.
Quarter Credit Hours: 6 | Prerequisite: Last term or permission from the Dean

IT484: Cybersecurity Policies
This course teaches you how to defend organizational resources by implementing and maintaining cybersecurity policies. Cybersecurity policies are used to support defense of data availability, integrity, and confidentiality. By establishing and applying effective security policies, organizations can keep valuable data safe. Topics include applying cybersecurity policies to access controls, cybersecurity operations and administration, risk analysis, incident response, and recovery. This course also teaches you cybersecurity policies for securing publicly available resources and Web applications.
Quarter Credit Hours: 6 | Prerequisite: IT388

IT484M1: Access Controls and Security Technologies
Evaluate access controls and security technologies supported by cybersecurity policies used to protect network resources and ensure data availability.
Quarter Credit Hours: 1 | Prerequisite: IT388
IT484M2: Security Operations and Administration Procedures
Create security operations and administration procedures related to data privacy and cybersecurity policy.
Quarter Credit Hours: 1 | Prerequisite: IT388

IT484M3: Risk Management and Compliance
Evaluate risk management and compliance in regard to cybersecurity policy and industry standards.
Quarter Credit Hours: 1 | Prerequisite: IT388

IT484M4: Incident Response Planning
Create an incident response plan, integrated with cybersecurity policy, which assists with organizational recovery.
Quarter Credit Hours: 1 | Prerequisite: IT388

IT484M5: Protecting Private Information
Evaluate cryptology, network, and communications technology used to protect private information from public disclosure and supported by cybersecurity policies.
Quarter Credit Hours: 1 | Prerequisite: IT388

IT484M6: Organizational System and Application Security Procedures
Evaluate organizational system and application security procedures related to cybersecurity policies and industry standards.
Quarter Credit Hours: 1 | Prerequisite: IT388

IT488: Software Product Development Using Agile
This project-based course concludes the multiplatform software development series of courses and allows you to apply your learning to the development of a software product in an agile team software development environment. You will explore the concepts of agile development and then implement those concepts as you work on an agile development team, designing and developing a software product using an agile software development life cycle, from concept to packaged product.
Quarter Credit Hours: 6 | Prerequisite: IT481 and IT350

IT489: Bachelor's-Level Information Technology Internship
This course gives you practical job experience in the information technology field. The internship provides you with an opportunity to learn about the IT career field through practical, real-world experiences and mentoring from an IT professional. This experience will enrich your technology skills and provide a better understanding of the level of expertise needed to be successful in your career. Internships must be preapproved by the Dean prior to the start of the term. Students who fail this course on the first attempt may not reenroll in this course without the Dean's approval.
Quarter Credit Hours: 6 | Prerequisite: Last term or permission from the Dean

IT497: Bachelor's Capstone in Cybersecurity
The Bachelor's Capstone in Cybersecurity is designed to build on the concepts of all information technology and security courses you have taken as a part of your degree plan. The capstone project integrates problem-solving techniques and the development and implementation of viable, student-developed solutions to meet an identified technology or design need in a business or institutional environment. You will be directed to work collaboratively to achieve the learning objectives for this course.
Quarter Credit Hours: 6 | Prerequisite: Last term or permission from the Program Chair

IT499: Bachelor's Capstone in Information Technology
The Bachelor's Capstone in Information Technology is designed to build on the concepts of all information technology courses you have taken as a part of your degree plan. The capstone project integrates problem-solving techniques and the development and implementation of viable, student-developed solutions to meet an identified technology or design need in a business or institutional environment.
Quarter Credit Hours: 6 | Prerequisite: Last term or permission from the Program Chair