CORE COURSES:

CAP 3104
Human-Computer Interactions
(3 credits – 3 hours)
In this course, students learn the foundational concepts of Human-Computer Interaction (HCI), including human-centered design principles and interaction, modalities, design guidelines and heuristics, and interface evaluation techniques.

CIS 3080
Introduction to Cloud Computing
(3 credits – 3 hours)
This course provides a comprehensive overview of the cloud infrastructure and services and their underlying management mechanisms including data center virtualization and networking, cloud security and reliability, big data analytics, scientific, and commercial application.

CIS 3523C
Managing IT Projects
(3 credits – 4 hours)
This course provides an overview of the tools and concepts needed to lead an information technology project team using the methodology phases: define, measure, analyze, improve and control. The course provides understanding in how to implement, perform, interpret, and apply the concepts.

CIS 4356
Information Security and Risk Management
(3 credits – 3 hours)
This course provides an in-depth examination of how to manage and reduce IT-associated risks. The course provides an overview of risk management and its implications on IT infrastructures.

CIS 4365
Computer Security Policies and Disaster Preparedness
(3 credits – 3 hours)
When an organization's function is interrupted by disasters, accidents, or natural events, a loss of data and/or productivity may occur. The impact on the organization is determined by how prepared it is for dealing with these disruptions. This course provides a foundation in formulating computer security policies, and preparing a disaster recovery/business continuity plan.

CIS 4950
Senior Capstone Project or Internship
(3 credits – 3 hours)
Prerequisite: Permission of the Dean. This course is designed for students preparing to graduate. Students will be required to demonstrate their knowledge and skills applicable to their degree core competencies and outcomes. The course provides a cooperative work experience opportunity, or a directed project learning activity related to the student's academic major.

COP 3703
Database Design and Architecture
(3 credits – 3 hours)
This course is an in-depth study of Database Management Systems. The course focuses on the relational database which is the most common model used by businesses. The key topics include an overview of database systems, database design, the relational model, physical design, indexing, transaction management, concurrency management, recovery, and tuning. In addition, some non-relational topics will be addressed such as data warehousing, decision support, and data mining databases.

CYBERSECURITY SPECIALIZATION:

CIS 3360
Principles of Information Security
(3 credits – 3 hours)
This course provides an introduction and overview of security issues for organizational and institutional computing. Physical, software, and computing systems security will be discussed. Students will be required to perform introductory security analyses, write code to automate some security preparedness tasks, and set up a protection scheme for a simple PC computer.

CNT 3408
Enterprise Security
(3 credit – 3 hours)
Prerequisite: CIS 3360 with a "C" or higher. This course covers the issues of providing computer security in an enterprise environment. Students will learn the threats to any enterprise and how to properly address these threats with an appropriate response.

CNT 4514
Wireless and Mobile Computing
(3 credits – 3 hours)
Prerequisite: CIS 3360 with a "C" or higher. Students will study wireless and emerging network technologies. They will examine the effects of mobility on network issues such as architecture, security, privacy, file systems, resource discovery, resource management (including energy usage), personal online identities, and other areas. Students will acquire hands-on experience with mobile and sensor platforms using Wi-Fi analyzers and Wireless scanners.

CNT 4704C
Advanced Network Traffic Analysis
(3 credits – 4 hours)
Prerequisite: CET 2610C with a "C" or higher. Students explore, define, implement, and troubleshoot advanced information technologies that relate to networking. Students concentrate on researching, presenting, and developing skills related to these technologies.

ISM 3321
Cybersecurity Fundamentals
(3 credits – 3 hours)
Prerequisite: CET 2610C or 2660C with a grade of "C" or higher.
The course covers the management of information security problems, including attack methods, detection, and prevention techniques, cryptography, firewalls, and intrusion detection systems, security policies and risk management and incident response.

ISM 4322C
Advanced Cybersecurity
(3 credits – 4 hours)
Prerequisite: ISM 3321 with a "C" or higher. This course covers the advanced knowledge and awareness of cybersecurity. The content of the course focuses on web attacks, wireless network defense, session hijacking, mobile device security, and internet of things (IOT) vulnerabilities. The course includes the prevention of infrastructure security threats and developing control methods for secure system implementations.

SOFTWARE APPLICATION DEVELOPMENT SPECIALIZATION:

CIS 3641C
Cloud Development Essentials
(3 credits – 4 hours)
Prerequisite: CIS 3080 with a "C" or higher. This course is designed to help students gain technical expertise in development with cloud technologies. Throughout the course, students will explore scenarios that provide opportunities to build a variety of infrastructures through the use of cloud developer technologies. Students will build apps through code driven languages and secure them in a cloud environment. In addition, students will use functions, containers, and application program interfaces to build cloud solutions.

CIS 4651C
Cloud Deployment and Operations
(3 credits – 4 hours)
Prerequisite: CIS 3641C with a "C" or higher. This course covers a flexible collection of software and programmatic delivery practices for cloud infrastructures. Students will learn how software and tools can improve deployment speed, consistency, and reliability by orchestrating cloud services and automated, repeatable cloud deployments. Topics cover but are not limited to infrastructure as a code (IAC), continuous integration/continuous delivery (CI/CD), and artificial intelligence/machine learning (AI/ML) deployments via cloud services for forecasting, data analytics, computer vision, and natural language processing (NLP).

COP 3538
Data Structures for IT
(3 credits – 3 hours)
Prerequisite: COP 2551 with a "C" or higher. The course formalizes the concepts of algorithm and time complexity. Data structures, such as Heaps, lists, queues, stacks and various forms of trees are covered. Students design and analyze algorithms, and numerous classic algorithms are covered.

COP 4655C
Mobile Application Development
(3 credits – 4 hours)
Prerequisite: COP 2551 with a "C" or higher. The course covers development techniques for mobile devices with a concentration on current technology, including current frameworks and tools. The course covers the components for mobile device applications including user interfaces, data persistence, application packaging, various sensors including location, API access, ADS, permissions, and push notifications. A project will provide the opportunity to apply learned knowledge to a working mobile application.

COP 4813
Web Application Programming
(3 credits – 3 hours)
Prerequisite: COP 2360 with a "C" or higher. This course introduces students to advanced concepts in the creation of applications utilizing the Web. Students will be exposed to topics such as client-server communications, dynamic data presentation, software design, planning and architecture. Students will get knowledge and practice in designing applications which utilize Web technology created using enterprise level programming languages and tools.

CTS 4457
Data Visualization and Communications
(3 credits – 3 hours)
During the first half of the course, students will learn how to make more effective visualizations of data. Students will gain deeper insight into the data and learn how to better communicate that insight to others. Students will learn new ways to display data, applying some fundamentals principles of design and human cognition to choose the most effective way to display different kinds of data. In the second half of the course, students will focus on storytelling, learning how to turn complex data into a visual story.