**CIS 301 – DATABASE MANAGEMENT SYSTEMS**
Course description: Students will learn about database management systems (DBMS) and how to utilize them to solve specific problems.

Course outcomes: Students will be able to...
1. List the most common structures for storing data in a DBMS.
2. Configure a commodity DBMS for secure access.
3. Evaluate alternatives to relational DBMS and their unique security issues.
4. Determine the role of a database, a DBMS, and a database server within a complex system supporting multiple applications.
5. Use basic SQL proficiency for table creation, data insertion and data query.
6. Identify DBMS access controls and privilege levels and apply them to a simple database.
7. Develop a DB structure for a specific system/problem.

**CIS 305 – CLOUD COMPUTING I**
Course description: Analyze and apply the various technologies and services that enable cloud computing, interpret different types of cloud computing models, and analyze the security and legal issues associated with cloud computing. Compare each type of service/model of cloud computing, local resource requirements, local controls, networking requirements, and security.

Course outcomes: Students will be able to...
1. Compare each type of service/model of cloud computing.
2. Analyze cloud storage systems.
3. Evaluate cloud infrastructure.
4. Compare resource requirements.
5. Apply cloud security risks and mitigation techniques.

**CIS 306 – ENTERPRISE LINUX**
Course description: Students will be able to install, administer, configure, and upgrade a Linux system in enterprise environments. Students will be able to analyze the tools and explain the concepts needed to build and manage a production Linux infrastructure, including integrating the infrastructure into a Windows environment.

Course outcomes: Students will be able to...
1. Administer, configure, and upgrade a Linux system.
2. Analyze tools needed to build and manage a production Linux infrastructure.
3. Build and manage a production Linux infrastructure.
4. Integrate the Linux infrastructure into a Windows environment.
CIS 308 – MOBILE AND WIRELESS TECHNOLOGIES
Course description: Students will learn about the hardware, communications, management, and programming environments associated with mobile technologies. Students will be able to interpret and explain coordination, energy efficiency, self-organization, and security within a wireless sensor network and be able to identify methods for isolating and/or obfuscating RF transmissions.

Course outcomes: Students will be able to...
1. Analyze how a mobile device maintains connectivity to the network while in motion, including passing off from one node to the next.
2. Synthesize the tradeoffs associated with bandwidth data rate, modulation, complexity, acceptable BER, and signal spreading.
3. Interpret coordination, energy efficiency, self-organization, and security within a wireless sensor network.
4. Identify methods for isolating and/or obfuscating RF transmissions.

CIS 316 – EMBEDDED SYSTEMS
Course description: Students will learn to evaluate and configure cyber physical systems including embedded system architectures, analyze real time OS issues including concurrency and synchronization, and apply real time resource management.

Course outcomes: Students will be able to...
1. Evaluate embedded system architectures.
2. Analyze real time OS issues such as concurrency and synchronization.
3. Apply real time resource management.

CIS 320 – WEB DEVELOPMENT
Course description: Develop and maintain a web site, incorporate e-commerce and database components into a web site, and employ appropriate security measures. Create scripts/programs to automate and perform operations. Implement basic security practices in developing scripts/programs (e.g., bounds checking, input validation).

Course outcomes: Students will be able to...
1. Develop and maintain web sites.
2. Incorporate e-commerce and database components into a web site.
3. Employ security measures for a web site.
4. Create scripts/programs to automate and perform operations.

CIS 405 – CLOUD COMPUTING II
Course description: Topics covered include: cloud based storage, virtualization, service oriented architecture (SOA), high availability, scaling, mobile devices, the role of open source cloud software such as Hadoop, OpenStack, and others.

Course outcomes: Students will be able to...
1. Analyze common technical complexities of cloud computing
2. Interpret the interactions between the various components of a cloud infrastructure.
3. Build a working cloud infrastructure.
4. Apply security measures to the cloud infrastructure.
CIS 406 – SUPPLY CHAIN
Course description: Designing a supply chain including all of the components and the associated security issues. Students will learn about issues related to outsourcing supply chain components, apply mitigation methods, analyze transport and logistics of components, and evaluate third party development practices.

Course outcomes: Students will be able to...
1. Analyze the components of a supply chain.
2. Design a supply chain.
3. Analyze security issues related to supply chains.
4. Interpret issues related to outsourcing hardware, software development and/or integration.
5. Apply methods to mitigate outsourcing issues.

CIS 416 – ICS ARCHITECTURE
Course description: Students will learn about local area networks in the master station and in the field; reliability, redundancy and safety issues; features of the RTU; PLCs and industrial computers; instrument and equipment interfaces; features of the MTU/HMI; security; data historian/back end systems; and planning and managing SCADA projects.

Course outcomes: Students will be able to...
1. Set up and configure RTUs and PLCs from several vendors.
2. Design, plan, and implement an industrial control systems network.
3. Analyze security issues within an ICS network.

CIS 499 – CAPSTONE
Course description: Students will be able to apply a concept taught in the IT networking BAS program, and develop additional expertise and knowledge through an approved industry focused project.

Course outcomes: Students will be able to...
1. Apply concepts learned through the IT networking BAS program.
2. Synthesize skills acquired through the IT networking BAS program.
BUS 302 – PROJECT MANAGEMENT
Course description: This course examines the role of project management in a business or corporate environment. Students learn how to achieve project goals and objectives within set constraints, such as time and budget. Topics include: project management frameworks and processes and their application to a project. Students learn to apply knowledge and skills to effectively initiate, plan, execute, and complete projects.

Course outcomes: Students will be able to...
1. Evaluate project management approaches considered when tackling a project.
2. Synthesize various frameworks, processes, and steps involved in executing a project.
3. Compare and contrast project management approaches.
4. Analyze issues that typically impact projects, and propose adjustments.
5. Explain various project control systems and methodologies.
6. Produce a completed project.

BUS 303 – COMPLIANCE AND AUDITING
Course description: This course covers the standard rules, regulations, and issues related to business management compliance with applicable laws and regulations. Topics include the role of the auditor, the legal environment for the auditor, compliance requirements and standards, and strategies for achieving and maintaining compliance with applicable laws and regulations.

Course outcomes: Students will be able to...
1. Evaluate applicable laws for compliance in given situations.
2. Interpret compliance laws.
3. Perform an audit culminating in an audit report.
4. Use professional behaviors in a business setting.

PHIL 301 – PROFESSIONAL ETHICS
Course description: This course examines ethical principles and moral or ethical problems that arise in a business environment. Upon successful completion of the course, students will be able to apply the codes of practice, standards of conduct, professional responsibilities and regulatory aspects associated with common professional business.

Course outcomes: Students will be able to...
1. Implement ethical standards and regulatory requirements within a professional business environment.
2. Explain the necessity for professional standards.
3. Evaluate ethical standards in a professional settings.