ITW 2530 Operating Systems
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
Principles of the management of memory, processors, processes and deadlocks, synchronization of computing tasks, files, devices, and systems. Principles of network organization and network operating systems. Analysis and evaluation of comparative operating systems.
Prerequisite(s): A minimum grade of "C" in IT 1130 or IT 2333.

ITW 2531 Introduction to Cyber Security
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
This course teaches the fundamental concepts and principles of cyber security techniques. Topics include computer and network security, cyber stalking, social networks, fraud and abuse, web security, malware, computer viruses, encryption, techniques used by hackers and how to combat them, simulation and identification of different threat models, software vulnerabilities analysis, risk assessment and mitigation, prediction of potential attack vectors through data analysis and evaluation. Hands on activities will be performed with emphasis on personal cyber and information security.

ITW 3133 E-Commerce
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
Principles and practices of E-commerce, including transaction and electronic payment systems, and business, legal, and security issues as they relate to E-commerce.
Prerequisite(s): A minimum grade of "C" in IT 3233.

ITW 3230 Data Visualization
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
This course introduces students to the field of data visualization. The course covers basic design and evaluation principles to prepare and analyze large datasets, and standard visualization techniques for different types of data. The course prepares students to communicate clearly, efficiently, and in a visually compelling manner to a variety of audiences.
Prerequisite(s): A minimum grade of "C" in IT 3233 and STAT 1401.

ITW 3231 Data Communications
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
Fundamentals of practical aspects of computer networks and data communications; standards, protocols, topologies, architectures, routing devices, wireless technologies, and monitoring and management.
Prerequisite(s): A minimum grade of "C" in IT 2530.

ITW 3233 Database Design and Implementation
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
The course provides students with the opportunity to develop in-depth knowledge of database design, implementation, and systems development. The course covers data modeling concepts, approaches and techniques, and stages in database development processes (conceptual and logical design, implementation and maintenance). The course also covers methods and approaches used in system analysis and design, including the system development life cycle. To reinforce the course concepts, students will carry out projects based on real world situations.
Prerequisite(s): A minimum grade of "C" in all of the following: CSCI 1236 or IT 2430, MATH 2130.

ITW 3234 Systems Acquisition, Design, and Implementation
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
The course provides a study of the acquisition, design, and implementation of information technology systems, including methods for investigating solutions, project planning and control, documentation, and specifications.
Prerequisite(s): A minimum grade of "C" in IT 3233.

ITW 3432 Analytics Programming
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
The course provides students with the necessary tools and techniques to manipulate, process, clean and analyze data at an advanced level using Python. Specifically, students will use IPython, NumbPy, and pandas to load, clean, transform, visualize and analyze data.
Prerequisite(s): A minimum grade of "C" in IT 2431 and IT 3233.
ITW 3530  Fundamentals of Information Systems Security  
3 Credit Hours.  3 Lecture Hours.  0 Lab Hours.  
Current standards and best practices in information assurance and security. Topics include the evaluation of security models, threat analysis, security risk assessment and risk mitigation, disaster recovery planning, cryptography and encryption algorithms, and security policy formation and implementation.  
**Prerequisite(s):** A minimum grade of "D" in CSCI 2120.  

ITW 3531  Digital and Computer Forensics  
3 Credit Hours.  3 Lecture Hours.  0 Lab Hours.  
This course introduces the processes and methodologies of Digital and Computer Forensics. Topics include the proper acquisition, preservation, analysis, and presentation of digital evidence. The course also covers the fundamental knowledge and lab-based skills of digital forensics across various platforms, operating systems, networks, and in the cloud. This includes file systems such as NTFS and EXT3/4, partitions, inodes, data sectors and clusters, slack space, Linux and Windows scripting and commands, as well as open source and proprietary digital forensic tools.  
**Prerequisite(s):** A minimum grade of "C" in ITW 2531.  

ITW 4130  IT Issues and Management  
3 Credit Hours.  3 Lecture Hours.  0 Lab Hours.  
Covers case studies of IT development projects to assist the student in the recognition of the need of an IT development project. The student will study and critique the development, implementation, and management of both successful and unsuccessful projects.  
**Prerequisite(s):** A minimum grade of "C" in IT 3234.  

ITW 4135  Data Analytics  
3 Credit Hours.  3 Lecture Hours.  0 Lab Hours.  
This course covers the basic issues involved in building and populating a data mart to support the planning, designing, and building of business intelligence applications and data analytics. Core concepts related to business intelligence and analytics are covered.  
**Prerequisite(s):** A minimum grade of "C" in all of the following: IT 3233, STAT 1401 or BUSA 3131.  
**Cross Listing(s):** IT 5135G.  

ITW 4136  Knowledge Discovery and Data Mining  
3 Credit Hours.  3 Lecture Hours.  0 Lab Hours.  
The course covers the process of automatically extracting valid, useful, and previously unknown information from data sources and using the information to make decisions. This course is designed to provide students with a solid understanding of the knowledge discovery process and the use of data mining concepts and tools as part of that process.  
**Prerequisite(s):** A minimum grade of "C" in all of the following: IT 3233, STAT 1401 or BUSA 3131.  

ITW 4336  Network Security  
3 Credit Hours.  3 Lecture Hours.  0 Lab Hours.  
Concepts of network security, including: countermeasures and safeguards to networks such as remote access controls, firewalls, intrusion detection systems, data encryption, and virtual private networks.  
**Prerequisite(s):** A minimum grade of "D" in IT 3530.  

ITW 4337  Ethical Hacking  
3 Credit Hours.  3 Lecture Hours.  0 Lab Hours.  
Concepts of hacker techniques and tools, including: cryptographic concepts, a technical overview of hacking, including port scanning, enumeration of computer systems, wireless vulnerabilities, web and database attacks, malware, and penetration testing. Social aspects of hacking, including social engineering. Incident response.  
**Prerequisite(s):** A minimum grade of "D" in IT 3530.  

ITW 4530  Senior Capstone Project  
3 Credit Hours.  3 Lecture Hours.  0 Lab Hours.  
This course provides students with the opportunity to develop in-depth knowledge of IT project design and implementation. The course covers the main topics of IT project management including requirements specification, project integration, scope, time, cost, quality, human resources, communications, and risk management. In addition, techniques and methods used in IT project management will be covered. To reinforce the course concepts, students will complete projects related to their specialization.  
**Prerequisite(s):** A minimum grade of "C" and prior or concurrent enrollment in IT 3234 and Senior standing.  

ITW 4790  Internship in Information Technology  
3 Credit Hours.  0 Lecture Hours.  0 Lab Hours.  
A campus-approved and coordinated IT-experience-based internship will be required of each student. The internship will include at least 280 hours of work. A written report by the student, along with an employer evaluation of the student's work will be required.  
**Prerequisite(s):** Permission of the Instructor.