COMPUTER INFORMATION SYSTEMS (2440)

2440:105. Introduction to Computers and Application Software. (3 Credits)
Overview of basic computer concepts, electronic mail and Internet terminologies. Introductory-level instruction and hands-on experience in word processing, spreadsheet, database and presentation software.

2440:121. Introduction of Logic/Programming. (3 Credits)
Prerequisites: 2440:105 or pass placement test. An introduction to business problem solving using computer-based solutions. Topics include structured design, documentation and modularity. Includes a component of hands-on programming.

2440:125. Spreadsheet Software. (2 Credits)
Prerequisites: 2440:105 or pass placement test. Emphasizes mastery of spreadsheet applications using Excel.

2440:140. Internet Tools. (3 Credits)
Prerequisite: 2440:105 or placement exam. Students will learn to create web pages using HTML and enhance their documents by including hyperlinks, tables, forms, frames and images in their HTML code.

2440:141. Web Server Administration. (3 Credits)
Prerequisites: 2440:105 or pass placement test. Provides Web server administration guidelines such as selecting software/hardware, domain name registration, analyzing security/legal issues, and implementing marketing strategies.

2440:145. Introduction to Unix/Linux. (3 Credits)
Prerequisite: 2440:105 or pass placement exam (CISBR). This course explores the vital functions that an operating system performs. A multi-user operating system is studied from a functional and hands-on approach.

2440:160. JAVA Programming. (3 Credits)
Prerequisite: 2440:121. Course introduces the JAVA programming language. Programming techniques are demonstrated through the coding, testing and debugging of JAVA applications and applets.

2440:170. Visual BASIC. (3 Credits)
Prerequisites: 2440:121. Course includes hands-on experience with Visual BASIC, design of Graphical User Interface (GUI) applications, event-driven programming, linking of windows, and accessing relational databases.

2440:180. Introduction to Database Management. (3 Credits)
Prerequisites: 2440:121. Overview of database system models and functions. Covers introduction to database design and relational database definition and manipulation using SQL.

2440:201. Networking Basics. (3 Credits)
Prerequisites: 2440:105 or placement exam. The introductory course in networking. It includes study of the common network protocols, structures, and models. Basic router and switch configurations are introduced.

2440:202. Router and Routing Basics. (3 Credits)
Prerequisite: 2440:201. The second course to networking. It covers basic router configuration as well as routed and routing protocols.

2440:203. Switching Basics and Wireless. (3 Credits)
Prerequisites: 2440:201 and 2440:202 with a grade of C or better in both. The third of four courses leading to the CCNA certification. The course covers switching basics and basic wireless networking.
2440:282. Microsoft Networking II. (3 Credits)
Prerequisite: 2440:281. Provides the knowledge and skills necessary to manage and maintain computers with the Windows Server 2008 Network Operating System. This course will also help prepare you to pass the MCTS Exam.

2440:283. Microsoft Networking III. (3 Credits)
Prerequisite: 2440:282. Provides the knowledge and skills necessary to manage and maintain an active directory service hosted by the Server 2008 Network Operating System. This course also helps prepare the student to pass the MCTS Exam.

2440:284. Microsoft Networking IV. (3 Credits)
Prerequisites: 2440:283 or passing score on the 70-640 Microsoft Certification Exam. This course will provide you with the knowledge and skill necessary to install, configure, manage and maintain the server services provided with Server 2008.

2440:290. Special Topics: Computer Information Systems. (1-5 Credits)
Selected topics or subject areas of interest in computer information systems.

2440:300. Network Authentication and Security. (3 Credits)
Prerequisite: 2440:204. WAN Technologies Junior/Senior standing and compliance with the repeat policy. This course focuses on network security issues related to conducting business over the Internet, including authentication, authorization, and firewalls.

2440:303. Voice, Data, and Video. (3 Credits)
Prerequisite: 2440:204 Wan Technologies. Junior/Senior standing and compliance with the repeat policy. This course focuses on network issues related to the integration of voice, data, and video over the same network media and equipment.

2440:306. Ethics & Law in Information Technology. (3 Credits)
Prerequisite: Junior/Senior standing. This course is designed to introduce the student to the central issues concerning intellectual property, privacy, and copyright law as it pertains to the development and distribution of software systems.

2440:310. Wireless Networking. (3 Credits)
Prerequisite: 2440:204 and compliance with repeat policy, or permission. This course provides students with various wireless networking technologies.

2440:311. Client/Server Programming II. (3 Credits)
Prerequisite: 2440:210. Discusses tools for client-server programming, distributed computing, socket programming, and security implementation.

2440:321. Server-Side Scripting. (3 Credits)
Prerequisites: 2440:121 & 2440:140. This course provides students with instruction on using server-side scripting languages to develop interactive client/server web-based applications.

2440:331. Programming for Cybersecurity. (3 Credits)
Prerequisites: 2440:121 and 2440:145 (must pass with a C or better). This course will introduce basic programming techniques used for ethical hacking using the Linux Operating System and other tools that are commonly used in cybersecurity.

2440:340. Network Forensics I. (3 Credits)
Prerequisites: Junior/Senior standing and 2220:281 with a grade of C or better. This course will provide the student with basic knowledge of surveillance of networking devices, identifying and preventing attacks and incident response.

2440:360. Java Programming II. (3 Credits)
Prerequisite: 2440:160. This course covers advanced object-oriented programming concepts, GUI programming, web application programming, network and security programming, JavaBeans and explores aggregations.

2440:365. E-Business Application Development. (3 Credits)
Prerequisites: 2440:211 & 2440:321. This course covers web programming techniques to develop Web-based e-business solution and covers e-business models and business issues.

2440:370. Visual Basic Programming II. (3 Credits)
Prerequisite: 2440:170. This course explores object-oriented programming through Visual Basic program development at a more advanced level, with more attention to business applications.

2440:388. Advanced UNIX/Linux. (3 Credits)
Prerequisite: 2440:145 and Junior/Senior standing. This course provides students with the necessary knowledge and skills to perform basic administrative tasks on a UNIX/Linux operating system.

2440:400. Advanced Routing. (4 Credits)
Prerequisites: 2440:201, 2440:202, 2440:203, 2440:204, 2440:300, 2030:154 OR possess a current CCNA certification and be able to configure a router to the CCNA standards and compliance with the repeat policy. This course focuses on advanced routing protocols and features and complies with the content of the Cisco Academy Cisco Certified Network Profession (CCNP) Advanced Routing course.

2440:401. Multilayer Switching. (3 Credits)
Prerequisites: Must have a current CCNA certification and be able to program a router to the CCNA standards. Requires permission. OR Must have successfully completed all four Cisco Networking Academy CCNA courses from an accredited academy (2440:201, 2440:202, 2440:203, 2440:204) and compliance with the repeat policy, or permission. This course focuses on switching protocols and features. This course complies with the content of the Cisco Academy Cisco Certified Network Profession (CCNP) Switching course.

2440:402. Troubleshooting Complex IP-based Networks. (4 Credits)
Prerequisites: 2440:400 and 2440:401 with grades of C or better and compliance with the repeat policy. This course focuses on methodologies and hands-on skills needed to maintain and troubleshoot complex IP networks.

2440:430. Network Monitoring and Management. (3 Credits)
Prerequisite: 2440:204 WAN Technologies OR Junior Standing and compliance with the repeat policy. This course provides students the basic theory and practical application of network monitoring and management skills.

2440:440. Intrusion Detection. (3 Credits)
Prerequisites: Junior/Senior standing and 2440:388 and 2440:340 with a grade of C or better. This course will introduce students to the various methods used to detect external and internal intrusion of computer systems.

2440:441. Cyber Security. (3 Credits)
Prerequisites: Junior/Senior standing and 2030:361, 2440:388 and 2440:340 with a grade of C or better. This course will address issues involving hacking, malware, social theories, protocols, firewalls, intrusion detection, the prevention and containment of intrusion incidents, the incident response process, and computer forensic examination.

2440:442. Wireless Forensics. (3 Credits)
Prerequisite: Junior/Senior standing and a grade of C or better in 2440:340. The forensic identification and tracking of attacks on wireless networks and mobile communications devices.
2440:443. Network Forensics II. (3 Credits)
Pre-requisite: Junior/Senior standing or 2440:340 with a grade of C or better. Deployment, building and running an NSM operation using open source software and vendor neutral tools with the Linx Operating System.

2440:450. Applied Data Mining. (3 Credits)
Pre-requisite: 2030:345 and Junior/Senior standing. This course is designed to introduce the student to the central issues in business data mining.

2440:451. Senior Programming Projects. (3 Credits)
Prerequisite: Senior Standing. This course is the capstone course where senior students will apply learned material by simulating a realistic work environment.

2440:452. CIS Practicum. (3 Credits)
Prerequisite: Permission. Provides students with experience in computer information systems operation and maintenance in the workplace. Practicum must be relevant to the specialization area.

2440:456. C++ Programming II. (3 Credits)
Prerequisite: 2440:256. This course explores object-oriented programming through C++ program development at a more advanced level. Also considers Visual programming and connection to databases.

2440:465. Data Communications & Networking. (3 Credits)
Prerequisite: Junior/Senior Standing. Introduces students to business data communication and networking concepts. The OSI model, various network configuration and popular industry communication protocols are explored at an advanced level.

2440:470. Database Management II. (3 Credits)
Prerequisite: 2440:180. Covers advanced database design, definition, manipulation, and administration tasks with emphasis placed on the relational model, the object-oriented model, and client/server systems.

2440:480. Current Topics in Computer Information Systems. (3 Credits)
Prerequisite: Permission. Seminar in topics of current interest in information technology or special individual topics in information technology.

2440:490. CIS Senior Networking Projects. (3 Credits)
Prerequisites: 2440:388; and at least two of: 2440:310, 2440:400, 2440:401 or 2440:402 and compliance with the repeat policy, or permission. This course is used to research, document and implement current and advanced IT topics beyond the scope of what was learned in the prior CIS courses.