COMPUTER INFORMATION SYSTEMS (CISS)

CISS 105 Introduction to Computers and Application Software (3 Units)
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. (Formerly 2440:105)

CISS 121 Introduction of Logic/Programming (3 Units)
Prerequisite: CISS 105 with a grade of C or better or 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. (Formerly 2440:121)

CISS 125 Spreadsheet Software (2 Units)
Prerequisite: CISS 105 with a grade of C or better or placement test. Emphasizes mastery of spreadsheet applications using Excel. (Formerly 2440:125)

CISS 134 Cybersecurity Fundamentals (3 Units)
Prerequisite: CISS 105 with a grade of C or better or placement test. Fundamentals of malware, social theories, protocols, firewalls, computer forensics, intrusion detection, prevention and containment incidents, incident response, and cybersecurity policy. (Formerly 2440:134)

CISS 140 Introduction to Web Development (3 Units)
Prerequisite: CISS 105 with a grade of C- or better or computing placement test. Students will learn to create web pages using HTML/ HTML5 resources such as hyperlinks, tables, forms, images, and multimedia. Emphasis is also placed on how to enhance web documents using CSS and other web technologies. Students are introduced to fundamentals of client-side programming. (Formerly 2440:140)

CISS 141 Web Server Administration (3 Units)
Prerequisite: CISS 105 with a grade of C or better or placement test. Provides Web server administration guidelines such as selecting software/hardware, domain name registration, analyzing security/legal issues, and implementing marketing strategies. (Formerly 2440:141)

CISS 145 Introduction to Unix/Linux (3 Units)
Prerequisite: CISS 105 with a grade of C or better or placement test. 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. (Formerly 2440:145)

CISS 160 JAVA Programming (3 Units)
Prerequisite: CISS 121 with a grade of C or better. Course introduces the JAVA programming language. Programming techniques are demonstrated through the coding, testing and debugging of JAVA applications and applets. (Formerly 2440:160)

CISS 170 Visual BASIC (3 Units)
Prerequisite: CISS 121 with a grade of C or better. 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. (Formerly 2440:170)

CISS 180 Introduction to Database Management (3 Units)
Prerequisite: CISS 121 with a grade of C or better. Overview of database system models and functions. Covers introduction to database design and relational database definition and manipulation using SQL. (Formerly 2440:180)

CISS 201 Networking Basics (3 Units)
Prerequisites: CISS 105 with a grade of C- or better or placement exam and [MATH 143 or MATH 144 or MATH 145 or higher math with a grade of C- or better or higher math placement]. The introductory course in networking. It includes study of the common network protocols, structures, and models. Basic router and switch configurations are introduced. (Formerly 2440:201)

CISS 202 Router and Routing Basics (3 Units)
Prerequisite: CISS 201 with a grade of C or better. The second course to networking. It covers basic router configuration as well as routed and routing protocols. (Formerly 2440:202)

CISS 203 Switching Basics and Wireless (3 Units)
Prerequisites: CISS 201 and CISS 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. (Formerly 2440:203)

CISS 204 Enterprise Networking (3 Units)
Prerequisites: CISS 201 and CISS 202 (each with a grade of C- or better). The third of three courses leading to the CCNA certification. Topics covered include IP services and Network Automation. (Formerly 2440:204)

CISS 210 Client/Server Programming (3 Units)
Prerequisite: CISS 180 with a grade of C- or better. Introduces student to client/server programming concepts and implementations. Includes hands-on experience to show integration of databases in client-server program development. (Formerly 2440:210)

CISS 211 Interactive Web Programming (3 Units)
Prerequisites: CISS 121 and CISS 140 (each with a grade of C or better). Provides students with instruction on interactive Web programming using XML and DHTML (HTML/XHTML/HTML5, CSS, and Web scripting). (Formerly 2440:211)

CISS 212 Multimedia & Interactive Web Elements (3 Units)
Prerequisite: CISS 140 with a grade of C or better. Reviews and demonstrates web tools and techniques like RealAudio, Shockwave, QuickTime, video conferencing and other dynamic graphical elements to enhance Web-based communication. Multimedia software may change to reflect current technology. (Formerly 2440:212)

CISS 240 Computer Information Systems Internship (3 Units)
Prerequisites: CISS 241 or [CISS 202 and CISS 247] each with a grade of C- or better and permission of department. Provides student experience in computing/information technology in the workplace. (Formerly 2440:240)

CISS 241 Systems Analysis & Design (3 Units)
Prerequisites: CISS 180 and [CISS 160 or CISS 170 or CISS 256 or CPSC 209], each with a grade of C- or better. Covers all phases of business systems analysis, design, development, and implementation. Such principles as system flowcharting and file and document design emphasized. (Formerly 2440:241)

CISS 247 Hardware Support (3 Units)
Prerequisite: Admission to program or permission of the program director. This course introduces the student to the basic skills required to troubleshoot, maintain and repair computers. (Formerly 2440:247)

CISS 248 Server Hardware Support (3 Units)
Prerequisite: CISS 247 with a grade of C or better. This course introduces the student to server hardware and expands student knowledge of client hardware. (Formerly 2440:248)

CISS 251 CIS Projects (3 Units)
Prerequisite: CISS 241 with a grade of C or better or permission. Using a simulated work environment, project teams are set up and required to analyze an unstructured problem, prepare alternative designs and implement a solution. (Formerly 2440:251)

CISS 256 C++ Programming (3 Units)
Prerequisite: CISS 121 with a grade of C or better. This course explores object-oriented programming through C++ program development. (Formerly 2440:256)

CISS 282 Microsoft Networking II (3 Units)
Prerequisite: 2440:281 with a grade of C or better. 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. (Formerly 2440:282)

CISS 283 Microsoft Networking III (3 Units)
Prerequisite: CISS 282 with a grade of C or better. 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. (Formerly 2440:283)

CISS 284 Microsoft Networking IV (3 Units)
Prerequisite: CISS 283 with a grade of C or better 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. (Formerly 2440:284)

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

CISS 300 Network Authentication and Security (3 Units)
Prerequisites: CISS 204 with a grade of C or better and junior or better standing. This course focuses on network security issues related to conducting business over the Internet, including authentication, authorization, and firewalls. (Formerly 2440:300)

CISS 303 Voice, Data, and Video (3 Units)
Prerequisites: CISS 204 with a grade of C or better and junior or better standing. This course focuses on network issues related to the integration of voice, data, and video over the same network media and equipment. (Formerly 2440:303)

CISS 306 Ethics & Law in Information Technology (3 Units)
Prerequisite: Junior or greater 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. (Formerly 2440:306)

CISS 310 Wireless Networking (3 Units)
Prerequisite: CISS 204 with a grade of C or better or permission. This course provides students with various wireless networking technologies. (Formerly 2440:310)

CISS 311 Client/Server Programming II (3 Units)
Prerequisite: CISS 210 with a grade of C or better. Discusses tools for client-server programming, distributed computing, socket programming, and security implementation. (Formerly 2440:311)

CISS 321 Server-Side Scripting (3 Units)
Prerequisites: CISS 121 and CISS 140, both with a grade of C or better. This course provides students with instruction on using server-side scripting languages to develop interactive client/server web-based applications. (Formerly 2440:321)

CISS 331 Programming for Cybersecurity (3 Units)
Prerequisites: CISS 121 and CISS 145 with grades of 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. (Formerly 2440:331)

CISS 340 Virtualization and Cloud Computing (3 Units)
Prerequisites: CISS 145, CISS 204, and CISS 247. Extension of practical knowledge of servers and LAN/WAN networks to include virtualized infrastructure. Authentication and security topics. Virtualization of compute, network, and storage resources including hypervisors and containers.

CISS 350 Python Programming (3 Units)
Prerequisite: CISS 121. Object-oriented concepts in Python. Basic concepts of handling and processing data.

CISS 360 Java Programming II (3 Units)
Prerequisite: CISS 160 with a grade of C or better. This course covers advanced object-oriented programming concepts, GUI programming, web application programming, network and security programming, JavaBeans and explores aggregations. (Formerly 2440:360)

CISS 365 E-Business Application Development (3 Units)
Prerequisites: CISS 211 and CISS 321, both with a grade of C or better. This course covers web programming techniques to develop Web-based e-business solution and covers e-business models and business issues. (Formerly 2440:365)

CISS 370 Visual Basic Programming II (3 Units)
Prerequisite: CISS 170 with a grade of C or better. This course explores object-oriented programming through Visual Basic program development at a more advanced level, with more attention to business applications. (Formerly 2440:370)

CISS 388 Advanced UNIX/Linux (3 Units)
Prerequisites: CISS 145 with a grade of C or better and junior or greater standing. This course provides students with the necessary knowledge and skills to perform basic administrative tasks on a UNIX/Linux operating system. (Formerly 2440:388)

CISS 400 Advanced Routing (4 Units)
Prerequisites: CISS 201, CISS 202 and CISS 204 with a grade of C- or better. Advanced routing protocols and features. Complies with the content of the Cisco Academy Cisco Certified Network Professional (CCNP) Enterprise Core course. (Formerly 2440:400)

CISS 401 Multilayer Switching (3 Units)
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 (CISS 201, CISS 202, CISS 203, CISS 204, all with a grade of C or better). 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. (Formerly 2440:401)

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

CISS 410 Software Security (3 Units)
Prerequisite: CISS 350, CISS 360, or CISS 456. Reasons that software code lacks security; techniques to make software secure. Tests for software security.

CISS 430 Network Monitoring and Management (3 Units)
Prerequisite: CISS 204 with a grade of C or better or junior or greater standing. This course provides students the basic theory and practical application of network monitoring and management skills. (Formerly 2440:430)

CISS 431 UNIX-based Systems Security (3 Units)
Prerequisites: CISS 388 with a grade of C or better and junior or greater standing. This course will introduce the various methods used to secure UNIX-based operating systems (Apple iOS and Andriod Operating System) on a computer network. (Formerly 2440:431)

CISS 432 Internet of Things (3 Units)
Prerequisites: CISS 201 and [CISS 121 or DGFR 383 with a C- or better]. All aspects of IoT technologies. Device programming, sensing technologies, networking design and data analytics for IoT.

CISS 440 Security Management and Incident Response (3 Units)
Prerequisites: DGFR 441 and CISS 204. This class prepares the student in the complementary disciplines of security management, with emphasis on best practices under normal operating conditions, and incident response (IR), with corresponding emphasis on best practices throughout the entire incident lifecycle.

CISS 441 Cyber Security (3 Units)
Prerequisites: MATH 361, DGFR 441, and CISS 388 with a grades of C or better and junior or greater standing. 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. (Formerly 2440:441)

CISS 450 Applied Data Mining (3 Units)
Prerequisites: MATH 345 and junior or greater standing. This course is designed to introduce the student to the central issues in business data mining. (Formerly 2440:450)

CISS 451 CIS Senior Design Projects I (3 Units)
Prerequisite: CISS 306, CISS 388, senior standing and admission to a computer information systems major within the College of Engineering and Polymer Science. Team-based research, documentation, and implementation of a project on a current topic in information technology. Capstone experience for Computer Information Systems Bachelor of Science program. (Formerly 2440:451)
Gen Ed: Capstone

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

CISS 456 C++ Programming II (3 Units)
Prerequisite: CISS 256 or CPSC 209 with a grade of C- or better. This course explores object-oriented programming through C++ program development at a more advanced level. Also considers Visual programming and connection to databases. (Formerly 2440:456)

CISS 465 Data Communications & Networking (3 Units)
Prerequisite: Junior or greater 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. (Formerly 2440:465)

CISS 470 Database Management II (3 Units)
Prerequisite: CISS 180 with a grade of C or better. Covers advanced database design, definition, manipulation, and administration tasks with emphasis placed on the relational model, the object-oriented model, and client/server systems. (Formerly 2440:470)

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

CISS 490 CIS Senior Networking Projects (3 Units)
Prerequisites: CISS 388, CISS 400, and CISS 401 with grades of C or better or permission. The capstone course is used to research, document and implement current and advanced IT topics using knowledge and skills developed from networking courses. (Formerly 2440:490)

CISS 491 CIS Senior Cybersecurity Project (3 Units)
Prerequisites: DGFR 442, DGFR 443, and CISS 388 with grades of C or greater or permission. This is the capstone course for the CIS Digital Forensics and Cybersecurity degree options. (Formerly 2440:491)