Information Technology (IT)

Courses

IT 1100. Introduction to Unix/Linux. 3 Hours.
Required of all Computer and Information Technology majors, and open to students with a general interest in computer operating systems. Introduces operating system concepts, including file systems, process management, user management, and security. Students will install and configure LINUX and MAC OS X. Course fee required. FA, SP.

IT 1200. A+ Computer Hardware/Windows OS. 3 Hours.
This course covers installation, repair and maintenance of computer hardware. It also discusses installation, repair and maintenance of the Microsoft Windows operating system. This course prepares the student to take the CompTIA A+ certification exams. Dual listed with CJ 2500 (students may take only one course for credit). Course fee required. FA, SP.

IT 2400. Intro to Networking. 3 Hours.
Required of all Computer Science and Computer and Information Technology majors, and open to students with a general interest in computer networking. Introduces fundamental concepts of computer networks, including physical, transport, and application layers through completion of assignments predicting and measuring the behavior of computer networks under various conditions. Course fee required. Prerequisite: IT 1100 (Grade C- or higher). FA, SP.

IT 3100. Systems Design and Administration I. 3 Hours.
Required of Computer and Information Technology majors and students with an emphasis in Information Technology. Covers system administration topics for managing Internet facing services, including DNS, SMTP, and HTTP. Students will install, configure, and test services in a server environment. Course fee required. Prerequisites: CS 1400 (Grade C- or higher); AND IT 2400 (Grade C- or higher). FA.

IT 3110. System Automation. 3 Hours.
Enhances student administrative skills by promoting use of programming structures to manipulate, configure, and maintain systems. Image creation, collection, and dissemination will also be covered. Course fee required. Prerequisite: IT 3100 (Grade C- or higher). SP.

IT 3150. Windows Servers. 3 Hours.
Students will learn Windows's server management techniques to support a small to medium-sized business. Topics covered will include DHCP, DNS, IT, Windows Roles, Workgroups, Active Directory, and Domain Management. File and printer sharing will also be discussed. Course fee required. Prerequisites: IT 1200 and IT 2400 (both Grade C- or higher). SP.

IT 3300. DevOps Virtualization. 3 Hours.
Full Operating System virtualization as well as container or application virtualization topics will be covered. Automated deployment using configuration files. Management topics such as load-balancing, auto-failover, and high availability will also be discussed. Prerequisite: IT 2400 (Grade C- or higher). FA.

IT 4060. Big Data Analytics. 3 Hours.
Course focuses on a theoretical and hands-on exploration of business intelligence and analytics. It covers current best practices in statistical and quantitative analysis using large-scale data sets, exploratory and predictive models, and evidence-based methods to improve business decisions and actions. Dual listed with ISA 4070 (students may only take one course for credit). Prerequisites: IT 4300 (Grade C- or higher); AND STAT 2040 OR MATH 1040 (Grade C- or higher). FA.

IT 4070. Big Data Visualization. 3 Hours.
A focus on the methods, tools and processes to effectively visually encode and present insights discovered from previously analyzed data. It includes practice transforming simple and complex data analysis outputs into relevant, accurate, and effective visual displays to improve communication and decision making. Dual listed with ISA 4070 (students may only take one course for credit). SP.

IT 4100. Files Systems and Storage Technologies. 3 Hours.
Classic, virtualized, and cloud storage will be covered. Topics such as RAID, NAS, SAN will be covered. Business continuity for backup and replication of storage. Local vs. Remote file systems. We will explore older and newer OS filesystems and compare them (such as fat32, ntfs, ext3, ext4, btrfs). Dual listed with CJ 4700 (students may only take one course for credit). Course fee required. Prerequisite: IT 3100 (Grade C- or higher). SP (even).

IT 4200. DevOps Lifecycle Management. 3 Hours.
Takes students through the DevOps lifecycle. Students will develop practical skills in continuous integration, cloud provisioning, configuration management, continuous deployment, continuous monitoring, and continuous feedback. Course fee required. Prerequisites: CS 1400 (Grade C- or higher) AND IT 2400 (Grade C- or higher); OR CS 2810 (Grade C- or higher). FA.

IT 4300. Database Design & Management. 3 Hours.
Required of students pursuing an Information Technology emphasis. Covers administration of database management systems, logical database design, implementation of database designs, and application development using a DBMS. Students will design, manage, and implement databases and applications that use databases. Dual listed with CS 4307 (students may take only one course for credit). Course fee required. Prerequisites: CS 1400 (Grade C- or higher); AND IT 1100 (Grade C- or higher). FA, SP.
IT 4310. Database Administration. 3 Hours.
This course covers the database architecture and environment. Students will be able to manage user access control. Students will be able to perform backup, restore, and recovery operations. Students will be able control performance and optimization issues. It covers updating and upgrading of a database system. Students will be able to perform the importing and exporting of data to/from a database. Prerequisites: IT 4300 (Grade C- or higher). FA.

IT 4400. Network Design & Management. 3 Hours.
Required of students pursuing an Information Technology emphasis. Covers the design, management, and monitoring of a network. Hands-on configuration experience of layers 1, 2, and 3 will be given on both LAN and WAN levels. The successful student will be prepared to successfully complete the CCNA exam. **COURSE LEARNING OUTCOMES (CLOs) At the successful conclusion of this course, students will be able to: 1. Create and assign subnets and vlans. 2. Manage Cisco Devices. 3. Manage a small network. 4. Explain and Implement different routing protocols. Course fee required. Prerequisite: IT 2400 (Grade C- or higher). FA.

IT 4500. Information Security. 3 Hours.
Required of students pursuing an Information Technology emphasis. Reviews current security exploits, vulnerabilities, and counter measures. Covers general security models and architectures, encryption and forensics. Course fee required. Prerequisites: CS 1400 (Grade C- or higher); AND IT 3100 (Grade C- or higher). SP.

IT 4510. Ethical Hacking & Network Defense. 3 Hours.
This course provides an in-depth, hands-on experience in effectively protect networks. Students will learn the tools and penetration testing methodologies used in ethical hacking. Additionally, cyber-ethics regarding piracy, intellectual property, and fair information practices will be discussed along with state, federal, and international laws governing information technology. Prerequisites: CS 1410 (Grade C- or higher); AND IT 2400 (Grade C- or higher). FA.

IT 4600. Senior Project. 3 Hours.
Required of students pursuing an Information Technology emphasis. Students will complete an aggressive information technology project. **COURSE LEARNING OUTCOMES (CLOs) At the successful conclusion of this course, students will be able to: 1. Analyse requirements necessary for a project. 2. Plan how to solve a project. 3. Build and implement a project. Course fee required. Prerequisite: Senior status. SP.

IT 4920R. Internship. 1-3 Hours.
Internship course in Information Technology. Course fee required. Variable credit 1.0 - 3.0. Repeatable up to 3 credits subject to graduation restrictions. Prerequisite: Instructor permission. FA, SP, SU.

IT 4990. Seminar in Inform Technology. 3 Hours.
For students wishing instruction that is not available through other regularly scheduled courses in this discipline. Occasionally, either students need some type of non-traditional instruction, or an unanticipated opportunity for instruction presents itself. This course may include standard lectures, travel and field trips, guest speakers, laboratory exercises, or other nontraditional instruction methods. Repeatable for credit as topics vary, up to 12 credits. Course fee required. Prerequisite: Instructor permission. Offered by arrangement.

IT 4991. Seminar in Information Technology. 0.5-3 Hours.
For students wishing instruction that is not available through other regularly scheduled courses in this discipline. Occasionally, either students request some type of non-traditional instruction, or an unanticipated opportunity for instruction presents itself. This seminar course provides a variable credit context for these purposes. As requirements, this seminar course must first be pre-approved by the department chair; second, it must provide at least nine contact hours of lab or lecture for each credit offered; and third, it must include some academic project or paper (i.e., credit is not given for attendance alone). This course may include standard lectures, travel and field trips, guest speakers, laboratory exercises, or other nontraditional instruction methods. Note that this course in an elective and does not fulfill general education or program requirements. Fees may be required for some seminar courses and instructor permission will be optional at the request of the instructor.