Information Technology (IT)

Courses

IT 120 CompTIA A+ Practical Applications (3 Hours)
Students will gain knowledge required to install, configure and maintain software for end users. This course will also cover the basics of networking as well as networking security/forensics. Students will apply troubleshooting skills to properly and safely diagnose, resolve and document common software issues. Students will also apply appropriate customer support and soft skills, understand the basics of virtualization and examine desktop imaging and deployment. 2 hrs. lecture/wk, 2 hrs. lab/wk, 1 hr. open lab/wk.

IT 140 Networking Fundamentals (4 Hours)
Networking Fundamentals is the first of four courses in the Cisco Certified Network Associate (CCNA) curriculum. This course introduces the architecture, structure, functions, components, and models of the internet and other computer networks. The principles and structure of Internet Protocol (IP) addressing and the fundamentals of Ethernet concepts, media, and operations are introduced to provide a foundation for the curriculum. By the end of the course, students will be able to build simple Local Area Network (LANs), perform basic configurations for routers and switches, and implement IP addressing schemes.

IT 145 Routing and Switching Essentials (3 Hours)
This course is designed to provide students with a fundamental understanding of network routing and switching. Students successfully completing this course will be able to configure and troubleshoot routers and switches and resolve common issues with Routing Information Protocol (RIP), Access Control Lists (ACLs), Dynamic Host Configuration Protocol (DHCP), Network Address Translation (NAT), Virtual Local Area Networks (VLANs) and inter-VLAN routing in Internet Protocol version 4 and 6 (IPv4 and IPv6) networks. Laboratory exercises will accompany lectures. Prerequisite: IT 140.

IT 175 Cybersecurity Fundamentals (3 Hours)
This course is designed to provide students with the knowledge and skills required to install and configure systems to secure applications, networks and devices; perform threat analysis and respond with appropriate mitigation techniques; participate in risk mitigation activities; and operate with an awareness of applicable policies, laws and regulations. Students will perform these tasks to support the principles of confidentiality, integrity and availability. Prerequisite: (IT 120 or IT 205) and IT 140.

IT 201 Network Security Fundamentals (4 Hours)
This course is designed to provide an introduction to the core security concepts and skills needed for the installation, troubleshooting and monitoring of network devices to maintain the integrity, confidentiality and availability of data and devices. Topics covered include network threats, mitigation techniques, securing network devices, implementing firewall technologies, implementing intrusion prevention, securing local area networks (LANs), implementing virtual private networks (VPNs), and managing a secure network. Hands-on exercises will be used to reinforce the concepts. Prerequisite: IT 145.

IT 203 Voice Over IP Fundamentals (4 Hours)
This course is designed to provide students with the fundamentals of Voice over IP (VoIP) networking technology. Concepts covered include an explanation of the national voice and data network, telephony terminology, VoIP protocol analysis and telephony survey techniques. Prerequisite: IT 145.

IT 205 Implementing Windows Client (3 Hours)
The focus of this course is the use of Microsoft Windows as an operating system in a business environment. Planning a simple network system, installation and configuration of the software and hardware, resource management, connectivity, running application software under Windows, monitoring and optimizing system hardware and troubleshooting all lead the student to a deeper understanding of local area network use and administration.

IT 209 Scaling Networks (4 Hours)
This course is designed to provide students with the necessary knowledge and skills to interconnect and configure routers and switches in large networks. Students successfully completing this course should be able to perform switch and router administration tasks including installing, configuring and troubleshooting. Students will build networks based on the hierarchical design model supported by Virtual Local Area Networks (VLANs), VLAN Trunking Protocol (VTP), Spanning Tree Protocol (STP), Etherchannel, Hot Standby Redundancy Protocol (HSRP), Open Shortest Path First (OSPF) and Enhanced Interior Gateway Routing Protocol (EIGRP) in Internet Protocol version 4 and 6 (IPv4 and IPv6) networks. Prerequisite: IT 145.

IT 221 Windows Server (3 Hours)
This course is designed to provide students with the knowledge and skills to perform competently in the role of a network administrator utilizing the Windows network operating system. Students who complete this course will be able to accomplish fundamental network management tasks, including planning server roles, configuring the network file system, managing user accounts, implementing network printing and monitoring performance. Prerequisite or Corequisite: IT 120 or IT 205.

IT 225 Windows Active Directory Services (3 Hours)
This course is designed to provide the fundamental networking skills required to deploy and support Windows Server and implement Active Directory (AD) in most organizations. It covers IP fundamentals, remote access technologies and more advanced content including Software Defined Networking. Prerequisite: IT 221.
IT 228  Exchange Server (3 Hours)
This course is designed to provide network administrators with information that enhances their ability to manage an Exchange server network. Included are topics related to server and client mail management and server performance, e-mail concepts and advanced Internet networking. Prerequisite: IT 225.

IT 230  Linux Fundamentals (3 Hours)
This course is designed to provide students with a fundamental understanding of the Linux operating system environment. Students successfully completing this course will be able to perform Linux installation and package management; execute common Linux commands and utilities; and accomplish different system tasks such as navigating the filesystem and utilizing the resources of a basic Linux system.

IT 231  Linux Administration (3 Hours)
This course is designed to provide students with the necessary knowledge and skills to perform competently as a Linux system administrator. Students successfully completing this course should be able to perform basic system administration tasks including configuring the graphical user interface, managing user accounts, managing system logging, configuring basic networking, writing shell scripts and maintaining system security. Prerequisite: IT 230.

IT 232  Linux Networking (4 Hours)
This course is designed to provide students with skills that enhance their ability to manage Linux systems in a networked environment. Topics covered in this course include configuring and managing a Domain Name Server (DNS), web servers, file sharing servers, network client services, email services and network services. Prerequisite: IT 231.

IT 233  Linux Advanced Administration (4 Hours)
This course is designed to provide students with the skills and techniques to perform advanced administration tasks in a networked Linux environment. Topics will include compiling the Linux kernel, configuring advanced storage solutions, customizing system startup processes, and managing advanced network connections. Prerequisite: IT 231.

IT 234  Linux Administration (3 Hours)
This course is designed to provide students with the necessary knowledge and skills to perform competently as a Linux system administrator. Students successfully completing this course should be able to perform basic system administration tasks including configuring the graphical user interface, managing user accounts, managing system logging, configuring basic networking, writing shell scripts and maintaining system security. Prerequisite: IT 230.

IT 235  Linux Advanced Administration (4 Hours)
This course is designed to provide students with the skills and techniques to perform advanced administration tasks in a networked Linux environment. Topics will include compiling the Linux kernel, configuring advanced storage solutions, customizing system startup processes, and managing advanced network connections. Prerequisite: IT 231.

IT 238  Digital Forensics (3 Hours)
This course will cover the fundamentals of computer and cyber forensics. Students will learn different aspects of digital evidence and methods to uncover illegal activities left on storage media. Various forensics tools, techniques and procedures will be used in a lab environment to perform forensic investigations. Prerequisite: IT 120 or IT 205 and IT 230.

IT 239  Ethical Hacking (3 Hours)
This course introduces students to common computer vulnerabilities as well as exploits and techniques used by hackers. Students will develop countermeasures to mitigate attacks and strengthen system security. Topics covered include vulnerability scanning, social engineering, denial of service attacks, intrusion detection, buffer overflow and penetration testing. Prerequisite: IT 145 and IT 230.

IT 245  Network Infrastructure (3 Hours)
This course teaches IT administrators how to deploy and configure Active Directory Domain Services (ADDS) in a distributed environment, implement Group Policy, perform backups and restore, and monitor and troubleshoot Active Directory–related issues with Windows Server 2016. Additionally, this course teaches students to deploy other Active Directory server roles, such as Active Directory Federation Services (ADFS) and Active Directory Certificate Services (ADCS). Prerequisite: IT 221.

IT 247  Accessing Wide Area Networks (3 Hours)
The focus of this course is on the Wide Area Network (WAN) technologies and network services required by converged applications in a complex network. In this course, students will learn the selection criteria of network devices and WAN technologies to meet network requirements. Prerequisite: IT 145 and IT 209.

IT 256  Windows Security (4 Hours)
This course is designed to provide students with the skills and techniques to properly secure a Windows network. The topics will include building a Windows Active Directory infrastructure, securing the Windows Active Directory infrastructure and penetrating the infrastructure with current hacking tool kits. This course serves as a capstone course in the Windows track of the Information Technology Department. It is the last course in a series of six Windows classes. It takes concepts and skills learned in the pre-requisite Windows courses and ties them together focusing on securing a Windows network. Prerequisite: IT 225 and IT 245.

IT 271  Information Technology Internship I (3 Hours)
This course affords the student the opportunity to apply classroom knowledge to an actual work environment. It will provide advanced information technology students with appropriate on-the-job experience with area employers, under instructional oversight, which will promote the student's career goals. Student will work a total of 300 hours a semester at an approved job site. Prerequisites: IT 210 or IT 221 or IT 230 and department approval.

IT 272  Information Technology Internship II (3 Hours)
This course is a continuation of IT 271, Internship I. It provides the student additional opportunity to apply classroom knowledge to an actual work environment. Students will work a total of 300 hours per semester at an approved job site. Prerequisite: IT 271 and department approval.

IT 292  Special Topics: (1-3 Hour)
This course periodically presents specialized topics in computer networking that are not available in the regularly offered curriculum. Special Topics may be repeated for credit, but only on different topics. Prerequisite: Department approval.