

INFORMATION TECHNOLOGY (CPT)

CPT 0980 – Developmental Computer Skills

Credit Hours: 2.00 Total Contact Hours: 3.00 Lecture Hours: 1.00 Lab Hours: 2.00

Introduces students to beginning computer terms and concepts. Students will learn how to operate a microcomputer and to use the computers in the campus microcomputer labs. Topics covered include: mouse operation, practice with keyboarding, elementary Windows operating system techniques, use of a flash drive, file management techniques, elementary word processing (Microsoft Word), and elementary electronic spreadsheets (Microsoft Excel). Students will also learn to use the Internet and email.

Offered: Summer.

CPT 1040 – Introductory Computer Applications

Credit Hour: 1.00 Total Contact Hour: 2.00 Lecture Hour: 1.00 Lab Hour: 1.00

Introduces students to general computer terms and concepts. In addition, students will learn how to operate a microcomputer and to use the computers in the campus microcomputer labs. The students will learn about the Windows operating system and how to use a word processor (Microsoft Word) and an electronic spreadsheet (Microsoft Excel). Some keyboard experience is recommended. Self-paced and proficiency exam(s) available.

Offered: Fall.

CPT 1050 – Technology Basics for IT Pro

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Covers the use of the microcomputer in a professional environment with a focus on the innovative use of this technology. Students will use decision making tools to assist them in their work or personal environment. The course focuses on technology; history of technology; components of the PC; the Internet; application software including spreadsheet, word processing, and Web technologies. Students will see a variety of IT professions and discuss the daily activities of each. Proficiency exams are available.

Offered: Fall.

CPT 1060 – Intermediate Computer Applications

Credit Hours: 2.00 Total Contact Hours: 3.00 Lecture Hours: 1.00 Lab Hours: 2.00

Introduces students in health majors to become proficient doing the following tasks: research using the internet and search engines, intermediate and advanced features in Windows, advanced topics using Microsoft PowerPoint and advanced topics in Microsoft Word.

Offered: Spring.

CPT 1110 – Introduction to Programming Logic and Design

Credit Hours: 3.00 Total Contact Hours: 3.00 Lecture Hours: 3.00

Introduces computers, systems, and the management of information in a business environment. Provides a comprehensive overview of the principles of programming and teaches the beginning programmer how to develop logical thinking, structured procedural and program logic, and good programming style. Focuses on concepts such as procedural logic, programming concepts and enforces good style and logical thinking. Programming Logic and Design provides the beginning programmer with a guide to developing structured program logic. The course assumes no programming experience and does not focus on any one particular programming language. It introduces programming concepts and enforces good style and logical thinking. This class teaches flowcharting and writing algorithms or pseudo code. Students will learn Python in this course.

Offered: Summer, Fall, Spring.

CPT 1120 – Introduction to VB Programming

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Introduces programming concepts using the Microsoft Visual Basic.Net programming language. The concepts will involve planning and using algorithms; and programming with object-oriented design. There will be applications created using variables and constants, the selection structure, the repetition structure, controls, and handling events. Students should have knowledge of basic computer skills, including file/folder management concepts.

Offered: Fall.

CPT 1210 – Introduction to Digital and Emerging Technologies

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Introduces students to current digital and emerging technology concepts. Students will learn terminology, software, and hardware related to the field of digital media. This will also include emerging technologies as they become available. The course will include assignments that will require research on current and new concepts in the field of digital media.

Offered: Fall.

CPT 1250 – Computer Applications in the Workplace

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Introduces students to essential concepts in computer terminology, hardware components, operating systems and software. The student will be introduced to word processing, spreadsheet, presentation and database software using the Windows operating environment. Students will be required to prepare letters, reports and other documents and will be required to import data between the word processing and spreadsheet software applications. Proficiency exam options available. Some keyboard experience is recommended before taking this class.

Offered: Summer, Fall, Spring

Prerequisites: Keyboarding experience recommended.

CPT 1300 – C++ Programming

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Provides an introduction to the C++ programming language. Students will create, document, run and debug programs using problem analysis and data validation techniques. Key topics include variables, classes, objects, selection, iteration, strings, arrays, pointers and functions.

Offered: Spring.

CPT 1410 – Microsoft I

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Introduces students to installing and configuring a Microsoft Windows Server 2012 Network. This course focuses on the initial implementation and configuration of core services, such as Networking, Storage, Active Directory Domain Services (AD DS), Group Policy, File and Print Services, and Hyper-V. Different server roles are looked at including DNS servers, DHCP servers and Active Directory Domain Controllers. This course will help the student prepare for the following Microsoft Certified Solutions Associate (MCSA): Windows Server 2012 exam: 70-410. The material the student will use in this course will include Microsoft Official Academic Course textbooks and CDs.

Offered: Fall.

CPT 1411 – Microsoft Azure Fundamentals

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Introduces students to Microsoft's cloud computing platform, Azure. Covers foundational level knowledge on cloud computing concepts; core Microsoft Azure services; and Microsoft Azure management and governance features and tools. This course prepares students to take the Microsoft Azure Fundamentals AZ-900 certification exam.

Offered: Fall.

CPT 1415 – Microsoft II

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Describes multiple topics including implementing, managing, maintaining and troubleshooting a Microsoft Windows Server 2012 environment. This course focuses on the administration tasks necessary to maintain a Windows Server 2012 infrastructure such as configuring and troubleshooting name resolution, user and group management with Active Directory Domain Services (AD DS) and Group Policy, implementing Remote Access solutions such as Direct Access, VPNs and Web Application Proxy, implementing Network Policies and Network Access Protection, Data Security, deployment and maintenance of server images, as well as, update management and monitoring of Windows Server 2012 environments. This course will help the student prepare for the following Microsoft Certified Solutions Associate (MCSA): Windows Server 2012 exam: 70-411. The materials the student will use in this course will include Microsoft Official Academic Course textbooks and CDs.

Offered: Fall.

CPT 1416 – Microsoft Azure Administrator

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Discusses the management of Azure subscriptions and secure identities. Students will learn and practice administering Azure infrastructure, configuring virtual networking, connecting Azure and on-premises sites, managing network traffic, implementing storage solutions, creating and scaling virtual machines, implementing web apps and containers, backing up and sharing data, and monitoring solutions. This course prepares students for the Microsoft AZ-104 Azure Administrator certification exam.

Offered: Fall

Corequisites: CPT 1411.

CPT 1420 – Microsoft III

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Learn advanced configuration and service tasks necessary to deploy, manage and maintain a Windows Server 2012 infrastructure. Topics include advanced networking services, Active Directory Domain Services (AD DS), Active Directory Rights Management Services (AD RMS), Active Directory Federation Services (AD FS), Network Load Balancing, Failover Clustering, business continuity and disaster recovery services, as well as, access and information provisioning and protection technologies such as Dynamic Access Control (DAC), and Web Application Proxy integration with AD FS and Workplace Join. This course will help the student prepare for the Microsoft Certified Solutions Associate (MCSA): Windows Server 2012 70-412 exam. The materials the student will use in this course will include Microsoft Official Academic Course textbooks and CDs.

Offered: Fall.

CPT 1421 – Microsoft Azure Security Technologies

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Covers implementation of security controls, maintenance of an organization's security posture, and identification and remediation of security vulnerabilities. Students will manage security for identity and access, platform protection, data and applications, and security operations. This course prepares students for the Microsoft Azure Security Engineer Associate (AZ-500) certification exam.

Offered: Spring

Prerequisites: CPT 1416.

CPT 1440 – Internet Usage and Web Page Program

Credit Hour: 1.00 Total Contact Hour: 2.00 Lecture Hour: 1.00 Lab Hour: 1.00

Utilizes the Internet to access popular email services, upload and download files, use bulletin boards, new services, and other applications found on the Internet. Social Media services will also be discussed and used. Students will also develop a web page. Some experience with computers is recommended before taking this course.

Offered: Spring.

CPT 1470 – Introduction to Database Programming

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Enables students to create, maintain, and manipulate relational databases. They use Oracle SQL Plus to operate in a relational database environment. SQL will be covered. This course is required for IT majors with the digital media option.

Offered: Fall

Corequisites: CPT 1050.

CPT 1580 – Introduction to Graphic Design and Layout

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Introduces students to design and layout concepts using desktop publishing software. Topics of instruction will include layout, type design, color usage, scaling photographs and artwork, design of various documents, and integration with written work.

Offered: Fall.

CPT 1605 – IT Essentials

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Prepares students for CompTIA A+ Certification exams. This class is designed for students who want to pursue careers in IT and gain working knowledge of how computers work, how to assemble computers, and how to troubleshoot hardware and software problems. This class is also designed to give the student basic IT and Operating Systems knowledge and introduction into industry terminology and concepts.

Offered: Fall.

CPT 1615 – OS Introduction

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Discusses operating systems, which are not limited to, Microsoft and Linux. Hands-on-labs and in class material will be presented in a format that will help the student prepare for computer-based questions they might experience on this exam. This course provides exposure to Linux command line utilities, KDE, GNOME, Xserver and basic shell scripting. This class is also designed to give student comparisons between many of the different operating systems utilized in industry. OS Introduction helps a student to prepare for the CompTIA Linux+ Certification exams.

Offered: Fall

Corequisites: CPT 1050.

CPT 1620 – Linux Administration I

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Develop proficiency in performing maintenance tasks on the command line, installing and configuring a computer running Linux, and configuring basic networking, using virtual machines running Linux. This course will cover system architecture, Linux installation and package management, GNU and UNIX commands, devices, Linux file systems, and file system hierarchy standards.

Offered: Spring.

CPT 1625 – Linux Administration II

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Exposes students to advanced topics in Linux server administration and provides students with the knowledge to setup, configure, and maintain a Linux workstation/server for use in industry as well as personal use. This course will cover basic and advanced scripting techniques to automate administrative tasks. Topics covered include scripting and data management, interfaces and desktops, administrative tasks, essential system services, networking fundamentals, and security. This class will also cover different distributions for Linux including, but not limited to, CentOS and Ubuntu. This course class will assist in preparation for the LPIC-1 Certification Exam.

Offered: Fall

Prerequisites: CPT 1620.

CPT 1705 – Cisco I - CCNA

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Introduces the architecture, structure, functions, components, and models of the internet and other computer networks. It uses the OSI and TCP layered models to examine the nature and roles of protocols and services at the application, network, data link, and physical layers. The principles and structure of IP addressing, the fundamentals of Ethernet concepts, media, and operations are introduced to provide a foundation for the curriculum. Labs use a "model internet" to allow students to analyze real data without affecting production networks. At the end of the course, students build simple LAN topologies by applying basic principles of cabling, performing basic configurations of network devices such as routers and switches, and implementing IP addressing schemes.

Offered: Spring.

CPT 1706 – Cisco CCNA Introduction to Networks

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Introduces architectures, models, protocols, and networking elements. Students will build simple local area networks (LANs). Develop a working knowledge of IP addressing schemes, foundational network security, and basic configurations for routers and switches. This is the first of three courses that prepares students to take the CCNA Certification exam.

Offered: Spring.

CPT 1715 – Cisco II - CCNA

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Describes the architecture, components, and operations of routers and switches in a small network. Students learn how to configure a router and a switch for basic functionality. Students learn to configure and troubleshoot routers and switches and resolve common issues with virtual LANs and inter-VLAN routing in both IPv4 and IPv6 networks.

Offered: Spring

Corequisites: CPT 1705.

CPT 1716 – Cisco CCNA Switching, Routing, and Wireless Essentials

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Examines switching technologies and router operations that support small-to-medium business networks, including wireless local area networks (WLAN) and security concepts. Perform basic network configuration, troubleshooting, identify and mitigate LAN security threats, configure and secure a basic WLAN. Upon completing all three CCNA courses, students will be eligible to take the CCNA Certification.

Offered: Spring

Prerequisites: CPT 1706.

CPT 1820 – ASP.NET Programming

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Introduces web programming technologies. ASP.NET is a server-side programming environment that you can use to create and run dynamic interactive web server applications. The student will use HTML and Visual Basic and databases to create data driven and interactive web sites.

Offered: Fall

Prerequisites: CPT 1110.

CPT 1940 – Introduction to Cybersecurity

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Explores the broad topic of Cybersecurity in a way that matters to the student. Each student will learn how to protect personal data and privacy online and in social media, and why more and more IT jobs require Cybersecurity awareness and understanding.

Offered: Fall.

CPT 1945 – Introduction to the Internet of Things

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Examines the evolution of the Internet and how the interconnection of people, processes, data, and things is transforming every industry. This course provides an overview of key concepts and challenges related to digital transformation.

Offered: Spring.

CPT 1950 – Security Awareness

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Provides a basic survey of the importance of IT security awareness and data confidentiality. This security awareness-training course walks users through every aspect of Information Security in a very broad, easy to understand way and explains to them the value of securing data, both for themselves and the organization. The class will introduce legislation, local, state and federal privacy policies and liability of individuals and institutions related to data confidentiality and integrity. The course will introduce risk management, security policies, and common threats and countermeasures. The course will also present best practices in access control and password policies. This course will prepare a student to take the CompTIA Security+ Certification exam.

Offered: Fall.

CPT 1955 – Firewall Essentials

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Exposes students to various firewall devices. The course will enable a student to install, configure, and manage essential features of various firewalls. This course will also teach students how to build reliable firewall security measures including, but not limited to, access lists, VPNs, and least privilege concepts.

Offered: Spring.

CPT 1965 – Application of Network and Computer Security

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Allows students to demonstrate their proficiency by integrating technical knowledge with core skills and abilities. Students learn to provide modular, scalable security, using firewalls, access management, host security, and encryption as the foundation for security. Students will utilize case studies to implement access management including AAA, TACAS+, Kerberos, and physical card devices or token cards. Students will develop auditing procedures that combine host and network security practices.

Offered: Fall

Prerequisites: CPT-1930, CPT-1720.

CPT 1970 – Cybersecurity Applications

Credit Hour: 1.00 Total Contact Hour: 1.00 Lecture Hour: 1.00

Secures organizational data and network infrastructure against a digital threat. Students will act as a network administrator to utilize and manage security technologies. Students will complete a project that will require applying the knowledge learned in the Cybersecurity Fundamentals program.

Offered: Spring

Corequisites: CPT 1940.

CPT 1990 – Independent Study in CPT

Credit Hours: 0.00 Total Contact Hours: 0.00

Provides the student with an opportunity for in-depth work on a special topic within the field of Information Technology which the student was not able to pursue in the desired degree of depth in the regular course offerings. During the first week of the semester, the student is required to describe the proposed course of study in writing that he/she wishes to pursue. Such proposal must be submitted to the division dean for approval and student assignment to an Information Technology area faculty member for overseeing the project. This course of independent study may be substituted for an Information Technology technical course if it is applicable. Not more than five (5) credit hours will count towards graduation.

Offered: Summer, Fall, Spring.

CPT 2020 – Network Administration

Credit Hours: 6.00 Total Contact Hours: 8.00 Lecture Hours: 4.00 Lab Hours: 4.00

Prepares for the CompTIA Network+ N10-007 certification exam with the CompTIA Network+ N10-007 course and lab. Lab simulates real-world, hardware, software and command line interface environments and can be mapped to any text-book, course and training. The course and lab completely cover the N10-007 exam objectives and include topics such as network policies; network components; Ethernet technology; routing IP packets; IPv4 and IPv6 addresses, and more. The course is segmented into parts, each part corresponding to the domain areas of the Network+ N10-007 exam.

Offered: Spring.

CPT 2070 – Educational Technology

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Encompasses effectively identifying, location, evaluating, designing, preparing and efficiently using educational technology as an instructional resource in the classroom as related to principles of learning and teaching. Required course for all preservice teachers. Candidates will develop increased classroom communication abilities through lectures, discussions, modeling, laboratory experiences and completion of a comprehensive project.

Offered: Spring.

CPT 2110 – Introduction to Programming - COBOL

Credit Hours: 4.00 Total Contact Hours: 5.00 Lecture Hours: 3.00 Lab Hours: 2.00

Introduces students to basic programming terms, concepts, and documentation techniques. By the end of the course students will be able to design, write, compile, test and debug basic computer programs. Programming is done using the structured Common Business Oriented Language (COBOL). Topics covered include formatting/printing, computing, decision making, iteration, multi-level control break processing, and data validation. This course covers both batch and interactive processing. Microsoft Windows experience is recommended.

Offered: Fall

Corequisites: CPT 1050.

CPT 2120 – Advanced COBOL Programming

Credit Hours: 4.00 Total Contact Hours: 5.00 Lecture Hours: 3.00 Lab Hours: 2.00

Introduces students to advanced programming terms and concepts. By the end of the course students will be able to design, write, compile, test, and debug advanced COBOL programs. Topics covered include arrays and tables, sequential and indexed file processing, sorting, and screen design. This course also incorporates the elements of systems design through completed programming and documentation. Each student will design and implement a complete information system. The system will include multiple programs, make use of sequential and indexed files and use batch and interactive processing.

Offered: Spring

Prerequisites: CPT 1110.

CPT 2130 – JavaScript Programming

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Acquires the fundamentals of JavaScript programming to enhance the user experience and responsiveness of web sites. Students will create simple JavaScript code that will work well across multiple browser platforms. It will ready students to learn many of the pre-written jQuery libraries that will allow them to create professional web sites.

Offered: Spring.

CPT 2210 – Systems Analysis and Design

Credit Hours: 3.00 Total Contact Hours: 3.00 Lecture Hours: 3.00

Presents an introduction to the fundamental concepts of business systems analysis and design. Topics covered include an introduction to information systems, systems planning, systems analysis, systems design, systems implementation, systems operation, systems support, and security. The course presents a practical approach using a blend of traditional development with current technologies. It uses "real world" case studies that promote critical thinking and student participation.

Offered: Spring

Prerequisites: At least one programming course.

CPT 2320 – C# Programming

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Covers more advanced programming concepts using the Visual C# programming language. Students will create Windows applications using methods, classes, structures, arrays, writing to and reading from files and error trapping.

Offered: Fall

Prerequisites: CPT 1120.

CPT 2321 – C# Programming and .NET5

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Covers the fundamentals of C# programming with the C# 9 and .NET5. Students will manage data, query data, monitor and improve performance, and work with the file system.

Offered: Fall

Prerequisites: CPT 1120.

CPT 2350 – Database Programming

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Designed to obtain an understanding of relational database management concepts, theories, and procedures. They will design and create a relational database. The student will also normalize a database and design a relational database schema. The will use Oracle to access and manipulate data in a relational database environment. They will received extensive instruction on how to perform queries using Oracle SQL. At the end of the semester, the student should be able to use Oracle SQL in the SQL Plus Environment to perform advanced queries on a relational database.

Offered: Fall.

CPT 2400 – Special Topics in IT 

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Covers advanced topics using sub and function procedures, multi-tier database access and using classes to build object-oriented programs. This course will include an e-portfolio assignment and an exit evaluation of critical thinking and writing skills.

Offered: Spring.

CPT 2450 – Introduction to Java Programming

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Introduces Java software development using data types, programming structures, files, classes, objects and arrays. Projects created will use problem analysis to design, code and test Java programs. Students will learn appropriate tools to aid in Java program coding and development.

Offered: Spring

Prerequisites: CPT 2320 or CPT 2321.

CPT 2500 – iOS Mobile Applications Development

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Introduces the concepts of building iOS applications for the iPhone, iPad, and iPod. This course will also cover using the Apple Macintosh's development program Xcode 4.

Offered: Spring.

CPT 2540 – Computer and Network Security

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Introduces the concepts and issues related to securing information systems and the development of policies to implement information security controls. Topics include the historical view of networking and security, security issues, trends, security resources, and the role of policy, people, and processes in information security. Upon completion, students should be able to identify information security risks, create an information security policy, and identify processes to implement and enforce policy.

Offered: Fall.

CPT 2545 – Scripting for Cybersecurity Professionals

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Introduces the student to a variety of scripting languages. These scripting languages are an integral part of modern Penetration Testing tools. The course starts with an introduction to Windows PowerShell and Linux Shell scripting. This course will also cover Ruby, PHP, and Python scripting, concluding with a brief overview of Debugging and Disassembly.

Offered: Spring.

CPT 2550 – Cryptography and Encryption**Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00**

Covers the usage of cryptographic protocols for computer and network applications. With the advent of electronic commerce, online transactions, consumer computing and authentication, cryptography is playing an important role in securing the privacy and authenticity of electronically stored and transmitted information. Assuring the quality, validity and privacy of information is one of the key applications of Cryptography. This course covers all aspects of cryptographic applications, using the basic concepts of encryption, PKI, hashing and signatures.

Offered: Fall.**CPT 2555 – Network Forensics****Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00**

Provides a comprehensive understanding of network forensic analysis principles. Within the context of forensics security, network infrastructures, topologies, and protocols are introduced. Students understand the relationship between network forensic analysis and network security technologies. Students will learn to identify network security incidents and potential sources of digital evidence and demonstrate the ability to perform basic network data acquisition and analysis using computer based applications and utilities. Students will also identify potential applications for the integration of network forensic technologies and demonstrate the ability to accurately document network forensic processes and analysis.

Offered: Spring.**CPT 2560 – Server and Infrastructure Integration****Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00**

Identify, gather, analyze, and write requirements based on user needs and design, construct, integrate, and implement an information system as a solution to a business problem. Students will apply key systems integration architecture, methodologies, and technologies using industry best practices. User needs and user centered design will be applied in the selection, creation, evaluation, and administration of the resulting system. Computing applications hosted on dynamically-scaled virtual resources available as services are considered. Collaborative and non-collaborative "cloud-resident" applications are analyzed with respect to cost, device/location independence, scalability, reliability, security, and sustainability. Commercial and local cloud architectures are examined. A group-based integration of course topics will result in a project employing various cloud computing technologies.

Offered: Fall**Prerequisites:** CPT 1420, CPT 1625.**CPT 2650 – Creating and Editing Digital Images****Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00**

Introduces students to creating and editing digital images. Students will learn to capture digital images using a digital camera, transfer those images to a computer for editing and create bitmap images using a raster graphic editor to create eye-popping special effects. Students will gain experience in both the design and production perspectives. This will include creating and managing layer masks, creating color effects, improving images with adjustments layers, working with text, combining text and imagery, using filters and layer styles.

Offered: Spring.**CPT 2670 – Graphics Software and Applications****Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00**

Introduces students to creating and editing digital graphics. Students will learn to create vector graphics using a vector design program to create simple graphics, icons, text, and complex and multilayered illustrations. Through a thorough exploration of the vector graphics software, students are able to apply their knowledge to features and special effects, allowing them to create fun and interesting artwork.

Offered: Fall.**CPT 2700 – Digital Video Editing****Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00**

Introduces students to video production, compression, and editing concepts. Students will record video, capture the video to a computer, build a video presentation using a combination of video, sound, graphics, titles, and effects.

Offered: Spring.**CPT 2705 – Cisco III - CCNA****Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00**

Describes the architecture, components, and operations of routers and switches in a small network. Students learn how to configure a router and a switch for basic functionality. Students learn to configure and troubleshoot routers and switches and resolve common issues with RIPv1, RIPng, single-area and multi-area OSPF, virtual LANs, and inter-VLAN routing in both IPv4 and IPv6 networks.

Offered: Fall**Prerequisites:** CPT 1705.**CPT 2706 – Cisco CCNA Enterprise Networking Security and Automation****Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00**

Describes the architectures and considerations related to designing, securing, operating, and troubleshooting enterprise networks. It covers wide area network (WAN) technologies and quality of service (QoS) mechanisms used for secure remote access along with the introduction of software-defined networking, virtualization, and automation concepts that support the digitalization of networks.

Offered: Fall**Prerequisites:** CPT 1716.**CPT 2715 – Cisco IV - CCNA****Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00**

Discusses the WAN technologies and network services required by converged applications in a complex network. The course enables students to understand the selection criteria of network devices and WAN technologies to meet network requirements. Students learn how to configure and troubleshoot network devices and resolve common issues with data link protocols. Students also develop the knowledge and skills needed to implement virtual private network (VPN) operations in a complex network.

Offered: Spring**Prerequisites:** CPT 1705.

CPT 2740 – Cisco V - CCNP**Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00**

Provides students with an opportunity to learn how to create an efficient and expandable enterprise network. Students will also learn how to install, configure, monitor, and troubleshoot network infrastructure equipment. Topics include configuration of EIGRP, OSPF, IS-IS, and BGP routing protocols, and how to manipulate and optimize routing updates between these protocols. Other topics include multicast routing, IPv6, and DHCP configuration.

Offered: Spring**Prerequisites:** CPT 2715.**CPT 2741 – Cisco VI - CCNP****Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00**

Covers the deployment of state-of-the-art campus LANs. The primary focus is on the selection and implementation of the appropriate Cisco IOS services to build reliable, scalable, multilayer-switched LANs. Focus areas of the course include VLANs, Spanning Tree Protocol, wireless client access, minimizing service loss, and minimizing data theft in a campus network. This hands-on, lab-oriented course stresses the design, implementation, operation, and troubleshooting of multilayer switched networks.

Offered: Spring**Prerequisites:** CPT 2715.**CPT 2742 – Cisco CCNP Enterprise: Core Networking****Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00**

Covers switching, routing, wireless, and related security topics, along with the technologies that support software-defined programmable networks. Students will be prepared for the Implementing and Operating Cisco Enterprise Network Core Technologies exam (350-401 ENCOR) that earns an Enterprise Core Specialist certification. This is the first of two courses that prepare students for the CCNP Enterprise certification exam.

Offered: Spring**Prerequisites:** CPT 2706.**CPT 2743 – Cisco CCNP Enterprise: Advanced Routing****Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00**

Focuses on implementation and troubleshooting of advanced routing and redistribution for Open Shortest Path First (OSPF), Enhanced Interior Gateway Routing Protocol (EIGRP), and Border Gateway Protocol (BGP) along with VPN technologies, infrastructure security and management tools used in enterprise networks. Students will be prepared for the Implementing and Operating Cisco Enterprise Network Core Technologies exam (350-401 ENCOR) that earns an Enterprise Core Specialist certification. This is the second course that prepares students for the Cisco CCNP Enterprise certification exam.

Offered: Spring**Prerequisites:** CPT 2742.**CPT 2750 – HTML and CSS****Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00**

Introduces students to HTML (Hypertext Markup Language) and CSS (Cascading Style Sheets), two of the core technologies for building web pages. HTML provides the structure of the page, CSS the (visual and aural) layout, for a variety of devices. HTML5 features are designed to make it easy to include and handle multimedia and graphical content on the web without having to resort to proprietary plugins and APIs. Along with graphics and scripting, HTML and CSS are the basis for building web pages and web applications. This is a hands on course. Classwork will contribute to a student portfolio.

Offered: Spring.**CPT 2755 – Web Content Management Systems****Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00**

Introduces students to Web Content Management System (CMS) design skills to create an effective professional website. The course culminates in students launching a professional website that they may continue to shape after the course is completed. Emphasis is on understanding of digital technologies, design best practices, branding, cultivating a consistent and effective online presence, and career readiness.

Offered: Fall.**CPT 2760 – Animation I****Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00**

Introduces students to motion graphics and effects software used to produce visually innovative special effects for film, video and the web. Students will also learn how to composite and animate in 2D and 3D space using multiple cameras and lights. Integration of this software will be used in conjunction with other software packages. Students will create rich internet content and applications by using powerful video, multimedia and application development features.

Offered: Fall.**CPT 2770 – Animation II****Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00**

Introduces students to creating interactive rich internet content and applications by using powerful video, multimedia, and application development features. Students will learn how to compose and animate in 2D and 3D interactive spaces.

Offered: Spring.**CPT 2930 – Ethical Hacking I****Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00**

Acquaints students with the world of offensive information security. This penetration testing training introduces the latest hacking tools and techniques in the field and simulates a full penetration test, from start to finish, by injecting the student into a diverse and vulnerable network. This class does express the legal and ethical aspects of utilizing these tools in industry.

Offered: Fall**Prerequisites:** CPT 1620, CPT 1411.

CPT 2935 – Ethical Hacking II

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Acquaints students with the world of offensive information security. Students will not only apply knowledge of security concepts, tools, and procedures to react to security incidents, it ensures that they can anticipate security risks and guarding against them. This class will also cover investigative techniques and post mortem analysis of attacks on a network.

Offered: Fall

Prerequisites: CPT 1620, CPT 1411.

CPT 2940 – Virtualization I

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Introduces students to the installation, configuration, and management of the VMware ESXi server infrastructure. The materials the student will use in this course will include VMware Official Academic Course textbooks.

This is the first of two VMware course offered.

Offered: Spring.

CPT 2945 – Virtualization II

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Explores the advanced features of installation, configuration, and management of the VMware ESXi server infrastructure using vSphere, VMware ESXi, VMware vCenter. The materials the student will use in this course will include VMware Official Academic Course textbooks. This is the second of two VMware courses offered.

Offered: Spring

Prerequisites: CPT 2940.

CPT 2950 – VoIP I

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Applies the core principles of voice and data technology as they integrate the IP Telephony architecture. Topics included in this course will be modifying the LAN, MAN, and WAN to accommodate IP Telephony and translating the various layers in the OSI model. Quality of Service (QoS) will be described, as well as cabling issues for IP Telephony in the enterprise. Asterisk and other open source IP Telephony services will be covered in this course.

Offered: Fall

Prerequisites: CPT 1620, CPT 1410.

CPT 2955 – VoIP II

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Introduces students to the building and configuration of CISCO IP Telephony infrastructure. Call Manager Express will be utilized, each of these voice exchange systems will be configured, and time will be spent determining when to best utilize each system in different situations.

Offered: Fall

Prerequisites: CPT 1620, CPT 1410.

CPT 2960 – CCNA Security

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Develops the skills needed to succeed in IT-related degree programs and prepare for the CCNA Security certification. It provides a theoretically rich, hands-on introduction to network security, in a logical sequence driven by technologies. The goals of CCNA Security are as follows: provide an in-depth, theoretical understanding of network security; provide an experience-oriented course that employs industry-relevant instructional approaches to prepare students for associate-level jobs in the industry; enable students to have significant hands-on interaction with IT equipment to prepare them for certification exams and career opportunities. Upon completion of the CCNA Security course, students will be able to perform the following tasks: describe the security threats facing modern network infrastructures; secure network device access; implement the Cisco IOS IPS feature set; implement site-to-site IPsec VPNs; administer effective security policies.

Offered: Fall

Prerequisites: CPT 2715.

CPT 2965 – Applications of Network Security 

Credit Hours: 3.00 Total Contact Hours: 4.00 Lecture Hours: 2.00 Lab Hours: 2.00

Focuses on interoperability of real world server integration combining services across various platforms. Topics will include, but not limited to, integration of Windows, Linux, and Novell systems, file sharing, domain services, directory services, database services, VPNs, web services, print services, VoIP services, and server clustering. With these services being implemented security will also be stressed. Services will need to be available as well as secure. The course will include an e-portfolio assignment and an exit evaluation of critical thinking and writing.

Offered: Spring

Prerequisites: CPT 2706, CPT 2935.

CPT 2991 – Field Experience

Credit Hours: 0.00 Total Contact Hours: 0.00

Enables work activity which relates to an individual student's occupational objectives. With permission of a faculty advisor, the field experience replaces elective or required courses in a student's associate degree program. The experience is coordinated by a faculty member of the college who assists the student in planning the experience, visits the site of the experience for a conference with the student and his/her supervisor at least once during the semester and assigns the course grade to the student after appropriate consultation with the employer/supervisor.

Prerequisites: Completion of first semester and faculty advisor approval. This course is graded S/U.

Offered: Summer, Fall, Spring.