Course covers principles of wired and wireless network devices, configuration, and data network systems operation. Technologies such as mobile, cloud, and virtualization are also covered in this course. It also prepares the student for the CompTIA Network+ certification exam. Completion of Computer and Internetworking Technologies 1100 is recommended. (2 lecture hours, 2 lab hours)

CIT 1120
Binary Numbers & Subnetting
2 Credit Hours
Introduction to numbering systems used in computers and networking systems. Binary, Hexadecimal numbering systems as well as subnetting, Variable Length Subnet Masks (VLSM), Classless Inter-Domain Routing (CIDR), Super-netting, Internet Protocol version 4 (IPv4), and an overview of IPv6. (2 lecture hours)

CIT 1121
Introduction to Networks
3 Credit Hours
Current and emerging internetworking technologies. Including Open Systems Interconnect (OSI) reference model, binary numbers, hexadecimal numbers, address classes, Internet Protocol (IP) addressing and subnetting, protocols, standards, and cabling techniques. Completion of Computer and Internetworking Technologies 1120 or equivalent is recommended prior to enrollment. (2 lecture hours, 2 lab hours)

CIT 1122
Routing and Switching Essentials
3 Credit Hours
Describe the architecture, components, and operations of routers and switches in a small network. Students learn to configure and troubleshoot routers and switches for basic functionality. Prerequisite: Computer and Internetworking Technologies 1121 with a grade of C or better, or equivalent or consent of instructor. (2 lecture hours, 2 lab hours)

CIT 1123
Scaling Networks
3 Credit Hours
Practical skills required to configure routers and switches for advanced functionality. The content of the course aligns with CISCO certification. Prerequisite: Computer and Internetworking Technologies 1122 with a grade of C or better, or equivalent or consent of instructor. (2 lecture hours, 2 lab hours)

CIT 1124
Connecting Networks
3 Credit Hours
Practical skills required to configure and troubleshoot network devices and resolve common issues with data link protocols. The content of the course aligns with Cisco certification. Prerequisite: Computer and Internetworking Technologies 1123 or equivalent or consent of instructor. (2 lecture hours, 2 lab hours)

CIT 1125
Cisco Certified Design Associate (CCDA)
3 Credit Hours
Design of routed and switched network infrastructures and services involving Local Area Network (LAN), Wide Area Network (WAN), and broadband access for businesses and organizations. After completion of this course students should be prepared to participate in the Cisco Certified Design Associate (CCDA) examination. Prerequisite: Computer and Internetworking Technologies 1124
with a grade of C or better, or equivalent or consent of instructor. (3 lecture hours)

CIT 1151
**Wireless Network Administration**
3 Credit Hours
Introduction to the design, implementation and maintenance of wireless networks. Topics include 802.11 standards, wireless radio technology, wireless topologies, access points, bridges, wireless security, site surveys, troubleshooting and antenna systems. Prerequisite: Computer and Internetworking Technologies 1121 with a grade of C or better, or equivalent or consent of instructor. (2 lecture hours, 2 lab hours)

CIT 1612
**Windows PC Desktop Operating Systems**
3 Credit Hours
Introduction to Microsoft Windows 8 operating system support. Topics include install, upgrade, and migrate Microsoft windows operating system, and configuration of hardware and software applications. Prepares students for Microsoft Certified Solution Associate (MCSA) certifications. (2 lecture hours, 2 lab hours)

CIT 1613
**Enterprise Desktop PC Support Technician**
3 Credit Hours
Supporting Microsoft Windows operating system. Topics include managing and maintaining issues related to Microsoft PC windows operating system. Prepares students for Microsoft Certified Solution Associate (MCSA)certification. Prerequisite: Computer and Internetworking Technologies 1612 with a grade of C or better, or equivalent or consent of instructor. (2 lecture hours, 2 lab hours)

CIT 1640
**Security Plus**
3 Credit Hours
Information security principles providing participants tools for implementing and managing security in enterprise. Covers a broad review of information security, including terminology and overview of information security management. After completion of this course students should be prepared to participate in CompTIA Security+ examination. Prerequisite: Computer and Internetworking Technologies 1122 with a grade of C or better, or equivalent or Computer and Internetworking Technologies 1635 with grade of C or better, or equivalent or consent of instructor. (2 lecture hours, 2 lab hours)

CIT 1645
**Internet Telephony**
3 Credit Hours
Covers aspects of converging voice, data, messaging, and video as well as emerging Voice Over Internet Protocol (VOIP) Technologies. Circuit switched and packet switched networks will be covered as well as related protocols. Prepares the student for the CompTIA Convergence+ certification exam. Recommended: Computer and Internetworking Technologies 1640 with a grade of C or better, or equivalent. Prerequisite: Computer and Internetworking Technologies 1121 with a grade of C or better, or equivalent. (2 lecture hours, 2 lab hours)

CIT 1650
**IT Project Plus**
3 Credit Hours
Introduction to IT project management tools and methodology as needed for the CompTIA Project+ certification. Topics include project initiation, project planning, estimating and scheduling, team building, controlling cost, budgeting and resource allocation, project quality, and closure. (3 lecture hours)

CIT 1710
**Introduction to Servers**
3 Credit Hours
Introduction to server hardware and software technologies and various types of server operating systems. Topics include server hardware, software, storage, disaster recovery, and troubleshooting. Prepare students for CompTIA server+ certification exam. The following courses are recommended prior to enrollment: Computer and Internetworking Technologies 1112 or Computer and Internetworking Technologies 1612. (2 lecture hours, 2 lab hours)

CIT 1825
**Selected Topics**
2 Credit Hours
Introductory exploration and analysis of selected topics with a specific theme indicated by course title listed in college class schedule. This course may be taken four times for credit as long as different topics are selected. (2 lecture hours)

CIT 1840
**Independent Study**
1 to 4 Credit Hours
Exploration and analysis of topics within the discipline to meet individual student-defined course description, goals, objectives, topical outline, and methods of evaluation in coordination with, and approved by the instructor. This course may be taken four times for credit as long as different topics are selected. Prerequisite: Consent of instructor is required. (1 to 4 lecture hours)

CIT 2170
**Virtual PC-VMware Workstation**
2 Credit Hours
Practical skills required to install and configure VMware virtual workstation. Topics include VMware workstation installation, guest operating system installation, snapshot creation, virtual machine cloning, team management and virtual machine networking. (1 lecture hour, 2 lab hours)

CIT 2173
**Virtualization: Install/Configure/Manage**
3 Credit Hours
Develop practical skills required to install and configure VMware virtual vSphere. Topics covered include installation and configuration of ESX or ESXi, vCenter server, storage networking, vMotion, high availabilities and data protection. Prerequisite: Computer and Internetworking Technologies 1122 with a grade of C or better, or equivalent or consent of instructor. (2 lecture hours, 2 lab hours)

CIT 2175
**Information Storage and Management**
3 Credit Hours
Students in this course will develop practical knowledge and skills in information storage technologies. Students will learn about the architectures, features, and benefits of Intelligent Storage Systems; networked storage technologies such as Fiber-Channel Storage Area Network, IP Storage Area Networks, IP-SAN, Network
Attached Storage. Students will engage with backup, replication and archiving, and information security. Prerequisite: Computer and Internetworking Technologies 1124 with a grade of C or better, or equivalent or consent of instructor. (2 lecture hours, 2 lab hours)

CIT 2241
Cisco Certified Network Professional-ROUTE
3 Credit Hours
Basic routing principles including route summarization, route redistribution, route optimization, Internet Protocol version 4 (IPv4) and IPv6. Routing protocols covered include Open Shortest Path First (OSPF), Enhanced Interior Gateway Routing Protocol (EIGRP), Border Gateway Protocol (BGP) and Layer 3 path control. Prerequisite: Computer and Internetworking Technologies 1124 with a grade of C or better, or equivalent or consent of instructor. (2 lecture hours, 2 lab hours)

CIT 2242
Cisco Certified Network Professional 2
3 Credit Hours
Media, devices, and protocols to build, configure, and troubleshoot a remote access network to interconnect central sites to branch offices and home offices. Includes configuring Digital Subscribe Line (DSL), MultiProtocol Label Switching (MPLS), Virtual Private Network (VPN), Site-to-site VPN, Cisco device hardening, and Cisco Intrusion Detection System (IDS) and Intrusion Prevention System (IPS) systems. Prerequisite: Computer and Internetworking Technologies 1124 with a grade of C or better, or equivalent or consent of instructor. (2 lecture hours, 2 lab hours)

CIT 2243
Cisco Certified Network Professional-SWITCH
3 Credit Hours
Basic and multi-layer switching configuration. Includes Spanning Tree Protocol (STP), Virtual Local Area Networks (VLANs), secure integration of VLANs, inter-VLAN routing, Hot-Standby Routing Protocol (HSRP), Virtual Router Redundancy Protocol (VRRP), wireless LANs, voice over internet protocol (VOIP), and security. Prerequisite: Computer and Internetworking Technologies 1124 with a grade of C or better, or equivalent or consent of instructor. (2 lecture hours, 2 lab hours)

CIT 2244
Cisco Certified Network Professional-TSHOOT
3 Credit Hours
Methods and tools used to troubleshoot the following: Internet Protocol (IP) communication problems, IPv6 problems, Local Area Network (LAN) switch environments, Virtual Local Area Networks (VLANs) in router and switch environments, Enhanced Interior Gateway Routing Protocol (EIGRP), Open Shortest Path First (OSPF), and Border Gateway Protocol (BGP) problems. Prerequisite: Computer and Internetworking Technologies 2241 and Computer and Internetworking Technologies 2243, both with a grade of C or better, or equivalent or consent of instructor. (2 lecture hours, 2 lab hours)

CIT 2251
CCNA Security
3 Credit Hours
Provides the knowledge and hands-on skills required to install, troubleshoot, and monitor Cisco security network devices. Students who complete this course will be prepared to sit for the Cisco Certified Networking Associate (CCNA) Security Certification exam which is a stepping stone for job roles such as network security specialist and network security administrator. CCNA Security certification is a prerequisite for becoming a Cisco Certified Security Professional (CCSP). Prerequisite: Computer and Internetworking Technologies 1122 with a grade of C or better, or equivalent or CCNA Certification or consent of instructor. (2 lecture hours, 2 lab hours)

CIT 2240
CCNA Voice
3 Credit Hours
Basic operation and components involved in Voice Over Internet Protocol (VOIP). Configuration of IP phone, Cisco CallManager Express (CME) and Cisco Unity Express (CUE) solutions are covered. Prerequisite: Computer and Internetworking Technologies 1122 with a grade of C or better, or equivalent or consent of instructor. (2 lecture hours, 2 lab hours)

CIT 2510
Advanced Server 2012 Administration
3 Credit Hours
Administration of network server technologies and various types of server services with in-depth hands-on practice. Topics include server image, software, storage, disaster recovery, and troubleshoot. Prepare students for Microsoft Certified Solution Associate (MCSA) certification exam. Prerequisite: Computer and Internetworking Technology 1710 with a grade of C or better, or equivalent or Computer Information Systems 1620 with a grade of C or better, or equivalent or consent of instructor. (2 lecture hours, 2 lab hours)

CIT 2511
Adv Windows Server 2012 Configuration
3 Credit Hours
Advanced administration network server networks technologies and various types of server services with in-depth hands-on practice. Topics include iSCSI, file server resource manager, load balance, and failover. Prepare students for Microsoft Certified Solution Associate (MCSA) certification exam. Prerequisite: Computer and Internetworking Technology 1710 with a grade of C or better, or equivalent or Computer Information Systems 1620 with a grade of C or better, or equivalent or consent of instructor. (2 lecture hours, 2 lab hours)

CIT 2640
Ethical Hacking
3 Credit Hours
Introduces network security specialists to various methodologies used to attack a network and the countermeasures employed to prevent attacks. Exposes students to the various phases involved in hacking, attacks, countermeasures, and exploit categories. Concepts, principles and techniques are supplemented by hands-on exercises for attacking and disabling a network. The topics are presented in the context of properly securing the network. Prerequisite: Computer and Internetworking Technologies 1124 with a grade of C or better, or equivalent or Computer and Internetworking Technologies 1640 with a grade of C or better, or equivalent or consent of instructor. (3 lecture hours)
and Internetworking Technologies 1111 and Computer and Internetworking Technologies 1112, both with a grade of C or better, or equivalent or consent of instructor. (2 lecture hours, 2 lab hours)

CIT 2652  
**Computer Forensics II**  
3 Credit Hours  
A continuation of Computer Forensics I. Extends the use of analysis software and forensics tools. Focuses on network and open source forensics tools. Prerequisite: Computer and Internetworking Technologies 2651 with a grade of C or better, or equivalent or consent of instructor. (2 lecture hours, 2 lab hours)

CIT 2710  
**Capstone: Computer Network Integration**  
3 Credit Hours  
Capstone course assesses student competency and hands-on skills learned in Computer and Internetworking Technologies (CIT). Students focus on the integration of computer networks and produce a network portfolio. It is recommended that students take the capstone course in their last semester. Prerequisite: Computer and Internetworking Technology 1640 with a grade of C or better, or equivalent and Computer and Internetworking Technologies 2251 with a grade of C or better, or equivalent or consent of instructor. (2 lecture hours, 2 lab hours)

CIT 2840  
**Experimental/Pilot Class**  
1 to 6 Credit Hours  
Exploration and analysis of topics within the discipline. This course is used to pilot a proposal for a permanent discipline course. This course may be taken four times for credit as long as different topics are selected. Prerequisite: Consent of instructor is required. (6 lecture hours, 12 lab hours)

CIT 2860  
**Internship (Career & Technical Ed)**  
1 to 4 Credit Hours  
Course requires participation in Career and Technical Education work experience with onsite supervision. Internship learning objectives are developed by student and faculty member, with approval of employer, to provide appropriate work-based learning experiences. Credit is earned by working a minimum of 75 clock hours per semester credit hour, up to a maximum of four credits. Prerequisite: Consent of instructor and 2.0 cumulative grade point average; 12 semester credits earned in a related field of study; students work with Career Services staff to obtain approval of the internship by the Dean from the academic discipline where the student is planning to earn credit.

CIT 2865  
**Internship Advanced (Career & Tech Ed)**  
1 to 4 Credit Hours  
Continuation of Internship (Career and Technical Education). Course requires participation in Career & Technical Education work experience with onsite supervision. Internship learning objectives are developed by student and faculty member, with approval of employer, to provide appropriate work-based learning experiences. Credit is earned by working a minimum of 75 clock hours per semester credit hour, up to a maximum of four credits. Prerequisite: Consent of instructor and 2.0 cumulative grade point average; 12 semester credits earned in a related field of study; students work with Career Services staff to obtain approval of the internship by the Dean from the academic discipline where the student is planning to earn credit.