

# COMPUTER REPAIR & NETWORKING (CRN)

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## **CRN 126 PC Hardware Fundamentals (4)**

PC Hardware Fundamentals provides an introduction to the computer hardware skills needed to help meet the requirement for entry-level information and communication technology professionals. The curriculum covers the fundamentals of PC hardware technology, networking, laptop, and printer, operational procedures, and also provides an introduction to advanced concepts in ever growing Computer Technology. Students who complete this course will be able to describe the internal components of a computer, assemble a computer system, install an operating system, and troubleshoot using system tools and diagnostic software. Hands-on labs help students develop critical thinking and complex problem-solving skills.

## **CRN 136 PC Software Fundamentals (4)**

PC Software provides a comprehensive overview of the computer operating system and introduction to advanced concepts. Students who complete this course will be able to install and trouble shoot an operating system using system tools and diagnostic software. Practical application will include connecting computers to the Internet and share resources in a networked environment.

## **CRN 146 Fund of Computer Networking (4)**

This course prepares students with the knowledge and skills to install and configure Windows desktop operating system. The course focus is in four areas: installing, securing, networking, and browsing. At the completion of the course, the student will have installed and configured a Windows 7 desktop OS that is secure, on the network, and ready for browsing.

## **CRN 156 Network Operating Systems I (4)**

This course introduces students to a broad range of Network Operating System (NOS) concepts, including installation and maintenance. The course focus is on Microsoft Windows 2008/2012 operating system concepts, management, maintenance, and the required resources.

## **CRN 166 Network Operating Systems II (4)**

This course introduces students to a broad range of Network Operating System (NOS) concepts, including installation and maintenance. The course focus is on Linux Network Operating System concepts, management, maintenance, and the required resources.

## **CRN 176 Desktop Operating Systems (4)**

This course provides an introduction to operating system basics with the intent of giving a student a deeper understanding of various operating systems. Operating systems covered include Windows 7 through Windows 10 desktop operating systems, Windows Server, UNIX/Linux, and Mac OS X operating systems. Students will learn some networking basics and information involving how to create mixed environments. Advanced configuration and troubleshooting will also be part of this course.

## **CRN 186 Network Security Fundamentals (4)**

This course prepares students to manage security by teaching the fundamentals of cybersecurity.

## **CRN 221 Intro to Enterprise Networking (2)**

These concurrent courses introduce the architecture, structure, functions, components, and models of the Internet and other computer networks. The principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations are introduced to provide a foundation for the curriculum. By the end of these courses, students will be able to build simple LANs, perform basic configurations for routers and switches, and implement IP addressing schemes.

## **CRN 226 Intro Enterprise Netwrking Lab (3)**

These concurrent courses introduce the architecture, structure, functions, components, and models of the Internet and other computer networks. The principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations are introduced to provide a foundation for the curriculum. By the end of these courses, students will be able to build simple LANs, perform basic configurations for routers and switches, and implement IP addressing schemes.

## **CRN 231 Routing & Switching Essentials (2)**

These concurrent courses describe 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. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with standard access control lists and Network Address Translation for IPv4 and static and dynamic routing, virtual LANs, inter-VLAN routing, and Dynamic Host Configuration Protocol for both IPv4 and IPv6 networks. Prerequisite: Successful completion of CRN221 and CRN 226.

## **CRN 236 Routing/Switching Essntls Lab (3)**

These concurrent courses describe 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. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with standard access control lists and Network Address Translation for IPv4 and static and dynamic routing, virtual LANs, inter-VLAN routing, and Dynamic Host Configuration Protocol for both IPv4 and IPv6 networks. Prerequisite: Successful completion of CRN221 and CRN 226.

## **CRN 240 Workplace Skills I (2)**

This course prepares students to write and present documents often found in technical settings. Students will create technical summary documents, sets of instructions, technical illustrations, and technical presentations. Students will develop and enhance appropriate workplace appearance and behavior. Prerequisite: Concurrent enrollment in CCNA I and CCNA II.

## **CRN 241 Scaling Networks (2)**

These concurrent courses describe the architecture, components, and operations of routers and switches in larger and more complex networks. Students learn how to configure routers and switches for advanced functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with OSPF, EIGRP, STP, EtherChannel, and HSRP in both IPv4 and IPv6 networks. Prerequisite: Successful completion of CRN231 and CRN 236 or valid CCENT certification.

**CRN 246 Scaling Networks Lab (3)**

These concurrent courses describe the architecture, components, and operations of routers and switches in larger and more complex networks. Students learn how to configure routers and switches for advanced functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with OSPF, EIGRP, STP, EtherChannel, and HSRP in both IPv4 and IPv6 networks. Prerequisite: Successful completion of CRN231 and CRN 236 or valid CCENT certification.

**CRN 251 Connecting Networks (2)**

These concurrent courses discuss the WAN technologies and network services required by converged applications in a complex network. The courses enable 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, extended and IPv6 access control lists, and Quality of Service (QoS). Students will also develop the knowledge and skills needed to implement common security and monitoring techniques in complex networks. Prerequisite: Successful completion of CRN241 and CRN246.

**CRN 256 Connecting Networks Lab (3)**

These concurrent courses discuss the WAN technologies and network services required by converged applications in a complex network. The courses enable 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, extended and IPv6 access control lists, and Quality of Service (QoS). Students will also develop the knowledge and skills needed to implement common security and monitoring techniques in complex networks. Prerequisite: Successful completion of CRN241 and CRN246.

**CRN 265 Workplace Skills II (2)**

This course prepares students for the documents and skills needed to enter the competitive technical field job market. Students will create and enhance their cover letter and résumé. Interview techniques and job application skills will be developed. Students will learn to identify available professional resources and levels of professional certification. Students will develop and enhance appropriate workplace appearance and behavior. Prerequisite: Concurrent enrollment in Enterprise Networking and Network Technology Application.