Cisco Certified Networking Associate

200-125 (ICND1 & ICND2)

Course Syllabus

66 Hours

Course Description

The Cisco Certified Networking Associate (CCNA) certification provides students with the skills needed to install, configure, operate, and troubleshoot small to medium-size route and switched networks, including implementation and verification of connections to remote sites in a WAN. The exam tests a candidate's knowledge and skills related to LAN switching technologies, IPv4 and IPv6 routing technologies, WAN technologies, infrastructure services, and infrastructure maintenance. This course covers the objectives for the certification exam:

- **CCNA Exam 200-125**

Learning Objectives

Upon completion of the course, students will understand:

- How to configure VLANS and their many benefits, including providing flexible design that's not defined by physical location and the ability to segment broadcast domains to reduce overhead and increase security; the concept of trunking and the tasks required to configure and verify them
- Spanning Tree Protocol (STP) and how it identifies and terminates redundant links to provide a loop-free network; PortFast and Bridge Protocol Data Unit (BPDU) as enhancements and improvements to network reliability, manageability, and security; how to configure PortFast and BPDU guard
- The benefits of EtherChannel and how to configure it; switch aggregation and threat mitigation, in order to meet your network's demands in managing secure and highly available networks; the concepts, configuration, and need for InterVLAN routing in modern day network deployments
- The characteristics and behaviors of different interior gateway protocols; operating and configuring OSPFv2 (both single-area and multiarea)
- Configuring and verifying OSPFv3, a link-state routing protocol that expands on the functionality of OSPFv2
- Implementing, configuring, and verifying Enhanced Interior Gateway Routing Protocol (EIGRP)
- Researching, deploying, managing, and maintaining Wide Area Networks (WANs) using PPP, GRE, and eBGP
- How to implement the most secure, scalable, highly-available, and cost efficient networks by utilizing various device management tools
- How to troubleshoot network connectivity issues with SPAN, IP SLA, and other tools

Course Format

CCNA is a self-paced, online course delivered through the learning management system Skillsoft. The site to access the coursework is www.ivmfcore.org. Once you have logged into your CORE account, you can locate the coursework by selecting "Coursework" then clicking the Skillsoft logo.

Coursework is delivered through videos, tutorials, and tests. No textbooks are required for the course; however, students are encouraged to utilize additional resources to assist with certification preparation. Resource Guides with lists of supplemental study materials for each certification are available at http://libguide.get-vet.syr.edu/curriculum/ or on the IVMF CORE.

Course Completion Requirements

CCNA coursework is due within 90 days from the assignment date. The course hours listed at the top of the syllabus reflect the time it would take to click through the slides and do not account for taking notes or the end of module tests. You must complete all modules listed within both Topics 1 and 2 of the course. Successful completion of a module is marked after you review the lesson videos and score 80% or higher on the end of module tests.

Industry Certification Requirements

In order for the program to fund your CCNA certification exam you will need to meet the CCNA practice exam requirements. Your advisor or O2O program coordinator will provide you with access to the practice exam as well as completion instructions once you have finished the coursework.

Support

- For technical support, please contact Skillsoft Support at support.skillsoft.com
- For course content support, please utilize Skillsoft's mentoring resource titled "Mentoring 200-125 Interconnecting Cisco Networking Devices (CCNA)"
- For program support or questions, please contact your advisor or O2O program coordinator

Course Outline

Topic 1: Interconnecting Cisco Networking Devices Part 1 (ICND1)

1.1 CCENT: Overview of Networking

1.2 CCENT: OSI Model

1.3 CCENT: TCP/IP Model

1.4 CCENT: Network Components, Topologies, and Architecture

1.5 CCENT: Network Cabling

1.6 CCENT: IPv4 Addressing Part 1

1.7 CCENT: IPv4 Addressing Part 2

1.8 CCENT: Subnetting Part 1

1.9 CCENT: Subnetting Part 2

1.10 CCENT: IPv6 Addressing

1.11 CCENT: Initial Device Configuration

1.12 CCENT: IPv4 Configuration

1.13 CCENT: IPv6 Configuration

1.14 CCENT: Troubleshooting Methodologies

1.15 CCENT: Overview of Cisco Devices

1.16 CCENT: Switching Functions

1.17 CCENT: Discovering Ethernet

1.18 CCENT: Troubleshooting Interfaces and Cables

1.19 CCENT: VLAN Configuration

1.20 CCENT: Interswitch Connectivity

1.21 CCENT: Discovery Protocols

1.22 CCENT: Port Security

1.23 CCENT: Functions of Routing

1.24 CCENT: InterVLAN Routing

1.25 CCENT: Static Routing

1.26 CCENT: RIPv2 Configuration

1.27 CCENT: DNS Configuration

1.28 CCENT: DHCP Configuration

1.29 CCENT: NTP Configuration

1.30 CCENT: Access Control Lists Part 1

1.31 CCENT: Access Control Lists Part 2

1.32 CCENT: NAT Configuration

1.33 CCENT: Device Management

1.34 CCENT: Device Hardening

1.35 CCENT: Subnetting Practice

Topic 2: Interconnecting Cisco Networking Devices Part 2 (ICND2)

2.1 ICND2 3.0: Implementing VLANs

2.2 ICND2 3.0: Trunking Overview

2.3 ICND2 3.0: Configuring Trunking

2.4 ICND2 3.0: Spanning Tree Overview

2.5 ICND2 3.0: Spanning Tree Configuration and Verification

2.6 ICND2 3.0: PortFast and BPDU guard

2.7 ICND2 3.0: Configuring EtherChannel

2.8 ICND2 3.0: Switch Aggregation and Threat Mitigation

2.9 ICND2 3.0: InterVLAN Routing

2.10 ICND2 3.0: Routing Protocols

2.11 ICND2 3.0: OSPFv2 Operations

2.12 ICND2 3.0: Configuring OSPFv2

2.13 ICND2 3.0: Configuring Multiarea OSPFv2

2.14 ICND2 3.0: Configuring and Verifying OSPFv3

2.15 ICND2 3.0: Implementing EIGRP

2.16 ICND2 3.0: Configuring and Verifying EIGRP

2.17 ICND2 3.0: Wide Area Networks using PPP

2.18 ICND2 3.0: Wide Area Networks using GRE and eBGP

2.19 ICND2 3.0: WAN Topologies and Connectivity

2.20 ICND2 3.0: Infrastructure Services

2.21 ICND2 3.0: QoS Overview

2.22 ICND2 3.0: Configuring ACLs

2.23 ICND2 3.0: SNMP Monitoring

2.24 ICND2 3.0: Device Monitoring, Management, and Programmability

2.25 ICND2 3.0: Troubleshooting Connectivity