deerwalk
training center

# CISCO CERTIFIED NETWORK ASSOCIATE (CCNA)

Nature of the Course: Theory + Practical
Total Hours per Day: 2 Hours
Course Duration: 6 Weeks

## Course Summary

This course is for anyone who wants to get their CCNA certification. All technicians involved in the fundamental installation, operation, and verification of Cisco networks will benefit from this course. The following work roles are most suited to the content in this course:

- Network Administrator
- Network Support Technician
- Entry-Level Network Engineer
- Help Desk Technician

## Completion Criteria

After fulfilling all of the following criteria, the student will be deemed to have finished the Module:

- Has attended 90% of all classes held.
- Has received an average grade of 80% on all assignments
- Has received an average of 60% in assessments.
- The tutor believes the student has grasped all of the concepts and is ready to go on to the next module.

## Required Textbooks

- Stephen McQuerry, “CCNA Preparation Library”, Cisco Systems.
- Todd Lammle, “CCNA: Cisco Certified Network Associate Study Guide”, Sybex Inc.

## Prerequisites

- There is no prior educational level requirement for this course.

## Course Details

## Week I

- Components of a Computer Network and their Basic Characteristics
- Model of a Host-to-Host Communication
- Features and Functions of the Cisco Internetwork Operating System (IOS®) Software
- Describing LANs and the Role of Switches within LANs.

## Week II

- Describe Ethernet as the Network Access Layer of TCP/IP and describe the Operation of Switches
- Installing a Switch and Performing the Initial Configuration
- TCP/IP Internet Layer, IPv4 and its Addressing Scheme
- Describing the TCP/IP Transport Layer and Application Layer
- Exploring the Functions of Routing

## Week III

- Implementing Basic Configuration on a Cisco Router
- Host-to-Host Communications across Switches and Routers
- Identifying and Resolving Common Switched Network Issues and Common Problems Associated with IPv4 Addressing

## Week IV

- Describe, Implement and Verify Virtual Local Area Networks (VLANs) and Trunks
- Describe the Application and Configuration of Inter-VLAN Routing
- Explaining the Basics of Dynamic Routing Protocols and Describing Components and Terms of Open Shortest Path First (OSPF)
- Explain how Spanning Tree Protocol (STP) and Rapid Spanning Tree Protocol (RSTP) work.

- Configuring Link Aggregation using Ether Channel
- Describing the purpose of Layer 3 Redundancy Protocols

## Week V

- Basic WAN and VPN Concepts
- Describe the Operation of Access Control Lists (ACLs) and their applications in the Network
- Configuring Internet Access using Dynamic Host Configuration Protocol
- Describing the Concepts of Wireless Networks, and How to use Wireless LAN Controllers (WLCs)
- Describe Network and Device Architectures and Introduction of Virtualization

## Week VI

- Concept of Network Programmability and Software-Defined
- Networking (SDN) and describing Smart Network Management Solutions such as Cisco DNA Center™, Software-Defined Access (SD-Access), and Software-Defined Wide Area Network (SD-WAN)
- Configure Basic IOS® System Monitoring Tools
- Describing the Management of Cisco Devices
- Describing the Current Security Threat Landscape
- Describing Threat Defense Technologies
- Basic Security Configuration of the Device Management Plane
- Basic Steps to Harden Network Devices

## Labs

Lab assignments will focus on the practice and mastery of contents covered in the lectures, and introduce critical and fundamental problem-solving techniques to the students.

## Learning Outcomes

- Identification of Network Fundamentals.
- Identification and configuration of LAN switching technologies.
- Description, implementation and verification of IP routing technologies.

- Identification and configuration of WAN technologies.
- Identification and configuration of infrastructure services.