# CCNA 7: Enterprise Networking, Security, and Automation

**Course Overview**

CCNAv7: Enterprise Networking, Security, and Automation (ENSA) describes the architecture, components, operations, and security to scale for large, complex networks, including wide area network (WAN) technologies. The course emphasizes network security concepts and introduces network virtualization and automation. Students learn how to configure, troubleshoot, and secure enterprise network devices and understand how application programming interfaces (API) and configuration management tools enable network automation.

By the end of this course, students will be able:
- Configure single-area OSPFv2 in both point-to-point and multiaccess networks.
- Explain how to mitigate threats and enhance network security using access control lists and security best practices.
- Implement standard IPv4 ACLs to filter traffic and secure administrative access.
- Configure NAT services on the edge router to provide IPv4 address scalability.
- Explain techniques to provide address scalability and secure remote access for WANs.
- Explain how to optimize, monitor, and troubleshoot scalable network architectures.
- Explain how networking devices implement QoS.
- Implement protocols to manage the network.
- Explain how technologies such as virtualization, software defined networking, and automation affect evolving networks.

The 70-hour, instructor-led course is the 3rd of 3 courses in the Cisco CCNAv7 curriculum. The course includes activities using Packet Tracer, hands-on lab work, and a wide array of assessment types and tools.

**Benefits**

Students gain skills to configure and troubleshoot enterprise networks, and learn to identify and protect against cybersecurity threats. They are introduced to network management tools and learn key concepts of software-defined networking, including controller-based architectures and how application programming interfaces (APIs) enable network automation.

**Learning Components**
- 14 modules
- 12 hands-on labs
- 29 Cisco Packet Tracer activities
- 32 videos
- 13 syntax checkers
- 2 interactive activities
- 53 CYU quizzes
- 14 module exams
- 5 module group exams
- 1 final exam
- 1 practice exam for CCNA certification exam

**Features**

**Target Audience**: 2-year and 4-year college students in Networking or Engineering
**Prerequisites**: None
**Instructor Training Required**: Yes
**Languages**: English
**Course Delivery**: Instructor-led
**Course Recognitions**: Certificate of Completion, Letter of Merit, Digital Badge
**Estimated Time to Complete**: 70 hours
**Recommended Next Course**: CCNP Enterprise Core

Release Notes
Scope & Sequence