My NetAcad ⌄   Resources ⌄   Courses ⌄   Careers ⌄   More ⌄

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Course Home

Grades

Messages

Calendar

CCNA-3-2023

First Time in This Course

Welcome to the **Enterprise Networking, Security, and Automation (ENSA)** course. This third course in the CCNA curriculum describes the architectures and considerations related to designing, securing, operating, and troubleshooting enterprise networks. This course covers wide area network (WAN) technologies and quality of service (QoS) mechanisms used for secure remote access along with the introduction of software-defined networking, virtualization, and automation concepts that support the digitalization of networks. 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.

By the end of the CCNA course series, students gain practical, hands-on experience preparing them for the CCNA certification exam and career-ready skills for associate-level roles in the Information & Communication Technologies (ICT) industry.

These course materials will assist you in developing the skills necessary to do the following:

- Explain how single-area OSPF operates in both point-to-point and broadcast multiaccess networks.
- Verify single-area OSPFv2 in both point-to-point and broadcast multiaccess networks.
- Explain how vulnerabilities, threats, and exploits can be mitigated to enhance network security.
- Explain how ACLs are used as part of a network security policy.
- Implement standard IPv4 ACLs to filter traffic and secure administrative access.
- Configure NAT services on the edge router to provide IPv4 address scalability.
- Explain how WAN access technologies can be used to satisfy business requirements.
- Explain how VPNs secure site-to-site and remote access connectivity.
- Explain how networking devices implement QoS.
- Implement protocols to manage the network.
- Explain the characteristics of scalable network architectures.
- Troubleshoot enterprise networks.
- Explain the purpose and characteristics of network virtualization.
- Explain how network automation is enabled through RESTful APIs and configuration management tools.