DCOM 219
CCNA III: Enterprise Networking, Security, and Automation
4 Credits

Community College of Baltimore County
Common Course Outline

Description

DCOM 219 – CCNA III: Enterprise Networking, Security, and Automation: addresses the architecture, components, and operations of routers and switches in larger and more complex networks. Students configure and troubleshoot routers to resolve common issues with Open Shortest Path First (OSPFv2) routing protocol. Students develop the knowledge and skills needed to implement network security by configuring a virtual private network (VPN) and access control lists (ACLs) on a router. Wide area networks (WAN) concepts including network design, virtualization, automation, and troubleshooting are reviewed. This course is the culminating course for the Cisco Certified Network Associate (CCNA) certification.

Pre-requisites: DCOM 218 or permission of the Program Coordinator

Overall Course Objectives

Upon completion of this course, students will be able to:

1. implement OSPFv2 routing protocols in IPv4 networks;
2. develop a network security plan;
3. implement ACLs to secure networks;
4. implement network address translation (NAT) services for IPv4;
5. contrast various WAN topologies and protocols;
6. explain how VPNs are used to secure site-to-site connectivity;
7. implement network management protocols;
8. describe the purpose of network virtualization in network infrastructure;
9. discuss how network devices are automated; and
10. summarize characteristics of scalable network architectures.

Major Topics

I.   OSPFv2 Concepts and Configuration
II.   Network Security Concepts
III.   WAN Concepts
IV.   Access Control List Implementation (ACLs)
V.   NAT for IPv4
VI.   VPN and IPSec
VII.   Quality of Service (QoS)
VIII. Network Management

IX.   Network Design
X.   Network Troubleshooting
XI.   Network Virtualization
XII.   Network Automation

Course Requirements

Grading will be determined by the individual faculty member, but shall include the following, at minimum:

- 5 laboratory projects
- 2 exams

Other Course Information

This course is a program requirement for the following programs: Network Technology A.A.S Degree with Cisco Concentration, Cyber Security A.A.S Degree, and Network Technology Cisco Certificate and Cyber Security certificate. This course is the third course in a three-course sequence. This course is taught in a computerized environment.

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