

DCOM 218

CCNA II: Switching, Routing, and Wireless Essentials

4 Credits

Community College of Baltimore County Common Course Outline

Description

DCOM 218 – CCNA II: Switching, Routing, and Wireless Essentials: explores the architecture, components, and operations of routers and switches in a small network. Students configure a router and a switch for basic functionality and security. Students troubleshoot common issues with switches and routers that include both Internet Protocol Version 4 (IPv4) and Internet Protocol Version 6 (IPv6) networks including Virtual Local Area Networks (VLANs) and Wireless LANs (WLANs).

Pre-requisites: DCOM 217 or permission of the Program Coordinator

Overall Course Objectives

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

1. configure devices using security best practices;
2. determine how a Layer 2 switch will forward traffic;
3. implement VLANs;
4. troubleshoot VLANs and VLAN trunking;
5. implement Dynamic Host Control Protocol (DHCP);
6. explain dynamic address allocation in IPv6 networks;
7. explain local area network (LAN) vulnerabilities and switch mitigation;
8. implement a WLAN using a wireless router;
9. determine how a router makes forwarding decisions;
10. configure static and default IP routes; and
11. troubleshoot static and default IP routes.

Major Topics

- I. Routing Concepts
- II. Switching Concepts
- III. VLANs
- IV. Spanning Tree Protocol (STP)
- V. EtherChannel
- VI. DHCPv4
- VII. Stateless Address Autoconfiguration (SLAAC) and DHCPv6
- VIII. First Hop Redundancy Protocol (FHRP) Concepts
- IX. LAN and Switch Security

The Common Course Outline (CCO) determines the essential nature of each course.

For more information, see your professor's syllabus.

- X. WLAN Concepts and Configuration
- XI. Static Routing
- XII. Troubleshooting Static and Default Routes

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, Network Technology Cisco Certificate, and Cyber Security Certificate. This course is the second course in a three-course sequence. This course is taught in a computerized environment.

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