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

    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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