

DCOM 217

CCNA I: Introduction to Networks

4 Credits

Community College of Baltimore County Common Course Outline

Description

DCOM 217 – CCNA I: Introduction to Networks: provides an introduction to the architecture, structure, functions, components, and models of the Internet and other computer networks. The principles and structure of Internet Protocol (IP) addressing and the fundamentals of Ethernet concepts, media, and operations are introduced. Students build simple Local Area Networks (LANs) and perform basic configuration for routers and switches, which includes device hardening features and implementation of IP addressing schemes.

Pre-requisites: DCOM 101 or permission of the Program Coordinator

Overall Course Objectives

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

1. explain advances in modern network technologies;
2. implement initial settings on routers, switches, and endpoints;
3. describe network protocols;
4. explain how Ethernet operates in a switched network;
5. summarize the purpose and functions of the Open Systems Interconnection (OSI) Model layers;
6. explain how routers use Network Layer protocols and services;
7. contrast number systems used in networking;
8. implement an IPv4 and IPv6 addressing scheme;
9. utilize various tools to test network connectivity;
10. configure switches and routers with device hardening features to enhance security and;
11. implement a network design for a small network.

Major Topics

- I. Networks Today
- II. Basic Switch, Router and Device Configuration
- III. Protocols and Models
- IV. Physical Layer
- V. Number Systems
- VI. Data Link Layer
- VII. Ethernet Switching
- VIII. Network Layer

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

For more information, see your professor's syllabus.

- IX. Address Resolution
- X. IPv4 and IPv6 Addressing
- XI. Internet Control Message Protocol (ICMP)
- XII. Transport Layer
- XIII. Application Layer
- XIV. Network Security Fundamentals

Course Requirements

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

- 5 laboratory assignments
- 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 first course in a three-course sequence. This course is taught in a computerized environment.

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