

Common Course Outline
DCOM 252
Advanced TCP/IP
3 Credits

Community College of Baltimore County

Description

DCOM 252 – Advanced TCP/IP provides comprehensive instruction of the Transmission Control Protocol/Internet Protocol (TCP/IP) suite of protocols, services, and standards. Students study IPv4 and IPv6 relationships, network models, packet and payload structures, Internet Control Message Protocol (ICMP), Internet Protocol (IP) addressing, and securing a TCP/IP network. Students explore the Transport layer fully, with particular emphasis on Transmission Control Protocol (TCP) and User Datagram Protocol (UDP) structures and functionality. In addition, students compare and contrast the relationship between Internet Protocol version 4 (IPv4) and Internet Protocol version 6 (IPv6). This course is designed for students pursuing a career as a network technician, network administrator, or network engineer.

3 credits

Prerequisite: DCOM 101

Overall Course Objectives

Upon completion of the course the student will be able to:

1. describe TCP/IP;
2. analyze IPV4 and IPV6 addressing;
3. identify components of the TCP/IP protocol suite;
4. discuss network models;
5. examine packet and payload structures;
6. examine various protocols, such as ICMP, IP, TCP and UDP;
7. identify TCP/IP network security measures;
8. discuss IPv6 deployment requirements and methods; and
9. analyze the transport layer of the TCP/IP protocol suite.

Major Topics

- I. Internet Protocol
- II. Address Resolution Protocol
- III. Internet Control Message Protocol
- IV. User Datagram Protocol
- V. Network Security
- VI. Transmission Control Protocol
- VII. IPv4 and IPv6 Addressing
- VIII. IP Packet Structures

- IX. Data Link and Network Layer Protocols
- X. Neighbor Discovery in IPv6
- XI. Name Resolution of IP Networks
- XII. Deployment of IPv6

Course Requirements

Grading procedures will be determined by the individual faculty member but will include the following:

Grading/exams

- A minimum of two exams
- A minimum of five lab assignments

Written Assignments: Students are required to use appropriate academic resources. The individual faculty member will determine specific writing assignments.

Other Course Information

This course is taught in a computerized environment.