

Common Course Outline

DCOM 252

Advanced Protocols

3 Semester Hours

The Community College of Baltimore County

Description

DCOM 252 – 3 credits – Advanced Protocols surveys the various protocols that comprise today's converging communication technologies and state-of-the-art networks. This course is intended for anyone wishing to understand how communication and network protocols operate: programmers writing network applications, system administrators responsible for maintaining systems and networks utilizing the various protocols, and users who deal with network applications on a daily basis.

3 credits; 3 lecture hours per week

Prerequisite: DCOM 251 or consent of the program coordinator

Overall Course Objectives

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

1. Describe in detail the structure and organization of the OSI Reference Model and how it serves as a blueprint for open communications and systems at all levels;
2. Demonstrate a solid foundation in communication and LAN/WAN protocols;
3. Describe the core functions of networking, such as packet switching and routing;
4. Demonstrate knowledge of LAN/WAN communication techniques; and
5. Discuss the converging nature of communications and networking and the interoperability of today's architectures.

Major Topics

- I. Internet Protocol (IP);
- II. Address Resolution Protocol (ARP);
- III. Internet Control Message Protocol (ICMP);
- IV. IP Routing;
- V. Dynamic Routing Protocols;
- VI. User Datagram Protocol (UDP);
- VII. Broadcasting and Multicasting;
- VIII. Internet Group Management Protocol (IGMP);
- IX. The Domain Name System (DNS);
- X. Transmission Control Protocol (TCP);
- XI. Simple Network Management Protocol (SNMP);
- XII. Simple Mail Transfer Protocol (SMTP);
- XIII. Working with Protocol Analyzers and TCP/IP Utilities (e.g., Ping, Traceroute); and

XIV. Voice Over Internet Protocol (VoIP).

Course Requirements

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

1. Minimum of seven case projects
2. Minimum of three exams
3. Semester project (either a paper, class presentation, or hands-on demonstration)

Writing: The individual faculty member will determine specific writing assignments.

Other Course Information

Individual faculty members may include additional course objectives, major topics, and other course requirements to the minimum expectations stated in the Common Course Outline.