

Course Outline
DCOM 231
Nortel I: Internetworking Fundamentals
4 Semester Hours

The Community College of Baltimore County

Description

Nortel I - Internetworking Fundamentals

The first of four courses, prepares students for the Nortel NetKnowledge certification exam, introduces students to basic competencies in concentrators, routers, switches, cabling, basic networking types, network components, and OSI modeling and network protocols.

Prerequisite: CINS 101 Co-requisite: DCOM 101.

Overall Course Objectives

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

- A. Demonstrate an understanding of the evolution of computers and networking as they relate to each other
- B. Demonstrate an understanding of basic networking types, such as LANs, WANs, and Backbone Networks
- C. Demonstrate an understanding of networking environments, such as peer-to-peer and client/server
- D. Demonstrate an understanding of network components, such as cabling systems, connectivity devices, internetworking devices, network operating system functions, and the need for network management
- E. Demonstrate an understanding of networking standards and standards organizations
- F. Demonstrate an understanding of the OSI model and its seven layers
- G. Demonstrate a basic understanding of the following protocols: Ethernet, token ring, PPP, ARP/RARP, IP, TCP, UDP, Telnet, FTP, SMTP, HTTP, TFTP, SNMP, DHCP, RIP
- H. Demonstrate an understanding of Local Area Networks, including topologies, access methods, protocols, and equipment
- I. Demonstrate an understanding of Wide Area Networks
- J. Demonstrate an understanding of network operating systems
- K. Demonstrate an understanding of subnet addressing
- L. Demonstrate an understanding of network management and planning
- M. Demonstrate familiarity with the following products: Laptops or PCs, 2705B Token Ring Concentrator, ARN Router, ANH-8 Router, Cabling, NetXray
- N. Demonstrate oral and written knowledge of basic internetworking vocabulary

- O. Identify the characteristics and skills that are important to success in the networking industry: adaptability, flexibility, listening, troubleshooting
- P. Demonstrate knowledge of people employed in the networking industry in the local geographical area.

Major Topics

- A. Internetworking Overview
 - 1. Basic Network Types
 - 2. Connectivity and Internetworking Devices
 - 3. Cabling
 - 4. Structured Cabling Systems
- B. LAN Configurations
 - 1. The OSI Model
 - 2. Data Transmission
 - 3. Ethernet Basics
 - 4. Ethernet Standards
- C. WAN Configurations and Considerations
 - 1. WAN Configurations
 - 2. WAN Considerations
- D. Introduction to TCP/IP
 - 1. TCP/IP Protocols
- E. Networking Operating Systems
 - 1. Networking Operating Systems
 - 2. Networking Maintenance and Management
- F. Internetworking Outlooks
 - 1. Internetworking Careers
 - 2. History of Internetworking
 - 3. Emerging Networking Technologies

Course Requirements

Grading/exams: Procedures for grading will be determined by the individual faculty member; there will be a *minimum* of 10 graded assignments. A final examination is required. Other graded assignments may come from any combination of the following categories: quizzes, hourly exams, a midterm exam, group projects, individual reports/presentations, or lab projects.

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

Other Course Information

This course is taught in a computerized environment.

This course is the first course in a series of four (4) in the Nortel NetKnowledge concentration.

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

