

CIT 269—Internet Protocols (3)

Course Description

This course is designed to provide students with the knowledge and skills to install, configure, manage and troubleshoot internetworks using TCP/IP and its associated protocols. Lecture: 2 hours, lab: 2 hours. Prerequisites: A Level I Network Technology Specialization sequence; or consent of instructor.

Course Competencies

Upon successful completion of this course, the student can:

1. Plan and install a valid TCP/IP network.
2. Select and install appropriate services when using TCP/IP.
3. Install and configure DHCP service.
4. Install and configure WINS service.
5. Configure subnet masks.
6. Configure IP routing on a router or server.
7. Install and configure DNS service.
8. Configure and support browsing in a multiple-domain routed network.
9. Diagnose and resolve IP addressing problems.
10. Diagnose and resolve name resolution problems.

Course Outline

- I. Introduction
 - A. Communications Architectures
 - B. OS Installation
 - C. OS Utilities
- II. TCP/IP
 - A. History
 - B. Protocol Stack
- III. IP Addressing
 - A. Classes
 - B. Address Format
 - C. Subnets and Routing
 - D. Address Resolution Protocol (ARP)
 - E. Reverse Address Resolution Protocol (RARP)
- IV. Bridging and Routing
 - A. Bridge Concepts and Functions
 - B. Bridge Configuration
 - C. Routing Protocols
 - D. Routing Information Protocol (RIP)
 - E. Open Shortest Path First Protocol (OSPF)

- V. Dynamic Host Configuration Protocol (DHCP)
 - A. Functions of DHCP
 - B. DHCP Client Installation and Configuration
 - C. DHCP Server Installation and Configuration
 - D. DHCP Relay Agent

- VI. Name Services
 - A. Name Resolution Mechanisms
 - B. LMHOSTS file
 - C. HOSTS file
 - D. Windows Internet Name Service (WINS)
 - E. Domain Name Service (DNS)

- VII. Networking Services
 - A. E-mail
 - B. Dial-Up Networking
 - C. Remote Access Service (RAS)
 - D. Microsoft Internet Information Server (IIS)