

**INVER HILLS COMMUNITY COLLEGE
INVER GROVE HEIGHTS, MINNESOTA**

COURSE OUTLINE

COURSE TITLE: Planning a Windows Network Infrastructure
COURSE NUMBER: CNT 2430
CREDIT HOURS: 2 hours of lecture weekly
DEPARTMENT: Computer Networking and Technology

CATALOG DESCRIPTION

CNT 2430

Planning a Windows Directory Infrastructure

2 credit hours – Two hours of lecture weekly; one term

Includes a comprehensive overview of the technologies and strategies used to accurately and securely move data within a Microsoft Windows network. Focuses on TCP/IP addressing using DHCP, DNS and WINS. Also covers best practices for providing network access.

Prerequisites: CNT 2420, Implementing a Windows Server Network Infrastructure

LEARNING OBJECTIVES

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

- a. Allocate IP addressing by using DHCP
- b. Manage and monitor DHCP
- c. Resolve names and host names by using DNS
- d. Manage and monitor DNS
- e. Resolve network basic input/output system (NetBIOS) names by using WINS
- f. Secure network traffic by using IPSec and certificates
- g. Configure network access
- h. Manage and monitor network access

DIVISION OF SUBJECT MATTER

<u>Main Topic</u>	<u>Time Allocation</u>
1.0 Introduction to Network Infrastructure Administration	10%
2.0 Assigning IP Addresses	10%
3.0 Routing IP	10%
4.0 Planning a Name Resolution Strategy	10%
5.0 Connecting to the Internet	5%
6.0 Server Clustering	10%
7.0 Securing a Network Infrastructure	10%
8.0 Hardening Servers	10%
9.0 Designing a Public Key Infrastructure	5%
10.0 Securing Network Communications	10%
11.0 Maintaining a Network Infrastructure	5%
12.0 Troubleshooting	5%

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DETAILED COURSE OUTLINE

- 1.0 Introduction to Network Infrastructure Administration
 - 1.1 Network Infrastructure Design Overview
 - 1.2 Network Infrastructure Security Overview
 - 1.3 Network Infrastructure Maintenance Overview
 - 1.4 Selecting Protocols
 - 1.5 Locating Physical Resources

- 2.0 Assigning IP Addresses
 - 2.1 Understanding IP Addresses
 - 2.2 Determining IP Addressing Requirements
 - 2.3 Subnetting IP Addresses
 - 2.4 Deploying IP Addresses

- 3.0 Routing IP
 - 3.1 Understanding IP Routing
 - 3.2 Understanding Routing Tables
 - 3.3 Using Routing and Remote Access

- 4.0 Planning a Name Resolution Strategy
 - 4.1 Introducing Name Resolution
 - 4.2 Introducing the Domain Name System
 - 4.3 Determining DNS Requirements
 - 4.4 Designing a DNS Namespace
 - 4.5 Using DNS Server
 - 4.6 Planning DNS Security
 - 4.7 Resolving NetBIOS Names

- 5.0 Connecting to the Internet
 - 5.1 Understanding Internet Connectivity Architecture
 - 5.2 Determining Internet Connectivity Requirements
 - 5.3 Securing and Regulating Internet Access

- 6.0 Server Clustering
 - 6.1 Understanding Clustering
 - 6.2 Using Network Load Balancing
 - 6.3 Designing a Server Cluster

- 7.0 Securing a Network Infrastructure
 - 7.1 Selecting Computers and Operating Systems
 - 7.2 Identifying Client and Server Default Security Settings
 - 7.3 Planning a Security Update Infrastructure
 - 7.4 Securing a Wireless Network
 - 7.5 Securing Remote Access

- 8.0 Hardening Servers
 - 8.1 Using Group Policies
 - 8.2 Creating a Baseline for Member Servers
 - 8.3 Creating Role-Specific Server Configurations
 - 8.4 Deploying Role-Specific GPOs

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- 8.5 Using Security Templates
- 8.6 Deploying Security Templates

- 9.0 Designing a Public Key Infrastructure
 - 9.1 Introducing the PKI
 - 9.2 Designing a PKI
 - 9.3 Installing Certificate Services
 - 9.4 Understanding Certificate Enrollment and Renewal

- 10.0 Securing Network Communications
 - 10.1 Securing Communications with Packet Filters
 - 10.2 Securing Network Transmissions
 - 10.3 Introducing IPSec
 - 10.4 Deploying IPSec

- 11.0 Maintaining a Network Infrastructure
 - 11.1 Using the Performance Console
 - 11.2 Using Network Monitor
 - 11.3 Planning a Backup Strategy
 - 11.4 Providing Secure Network Administration

- 12.0 Troubleshooting
 - 12.1 Troubleshooting TCP/IP Addressing
 - 12.2 Troubleshooting Name Resolution
 - 12.3 Troubleshooting TCP/IP Routing
 - 12.4 Troubleshooting Internet Connectivity
 - 12.5 Troubleshooting Data Transmission Security

TEXTBOOKS

TITLE: 70-293 Planning and Maintaining a Microsoft Windows Server 2003 Network Infrastructure
AUTHOR: Craig Zacker, Drew Bird
PUBLISHER: Microsoft Press
ISBN: 0-7356-2029-6