

ITMC 1050

Course Syllabus

1. Name of Course: Implementing, Managing, and Maintaining a Microsoft Windows Server 2003 Network Infrastructure: Network Services

2. Number of Clock Hours: 48

3. Course Description:

This course provides students with the knowledge and skills to implement, manage, and maintain a Microsoft Windows Server 2003 network infrastructure. The course is intended for systems administrator and systems engineer candidates who are responsible for implementing, managing, and maintaining server networking technologies. These tasks include implementing routing; implementing, managing, and maintaining Dynamic Host Configuration Protocol (DHCP), Domain Name System (DNS), and Windows Internet Name Service (WINS); securing Internet Protocol (IP) traffic with Internet Protocol security (IPSec) and certificates; implementing a network access infrastructure by configuring the connections for remote access clients; and managing and monitoring network access. MOC 2277. Prerequisites: ITMT 1040.

4. Course Objectives

At the end of the course, students will be able to:

- Allocate IP addressing by using DHCP.
- Manage and monitor DHCP.
- Resolve names.
- Resolve host names by using DNS.
- Manage the integration of Active Directory and DNS.
- Manage and monitor DNS.
- Resolve network basic input/output system (NetBIOS) names by using WINS.
- Secure network traffic by using IPSec and certificates.
- Configure routing by using the Routing and Remote Access service.
- Configure network access.
- Manage and monitor network access.

5. Rationale:

Upon completion of this course, students will have a better understanding of Microsoft Windows 2003, the most popular operating system in use today.

6. Required Materials:

Microsoft Official Curriculum, MOC 2277, included.

7. Evaluation

Those who participate in class discussions, complete course lab work, and miss no more than three class meetings will be awarded 4.8 continuing education units.

8. Course Outline

Module 1: Allocating IP Addressing by Using Dynamic Host Configuration Protocol (DHCP)

This module provides you with the knowledge and skills to allocate IP addressing in a network environment.

Lessons

- Multimedia: The Role of DHCP in the Network Infrastructure
- Adding and Authorizing a DHCP Server Service
- Configuring a DHCP Scope
- Configuring DHCP Reservations and Options
- Configuring a DHCP Relay Agent

Lab A: Identifying and Resolving Common Issues When Allocating IP Addressing by Using DHCP

- Identifying and Resolving Common Issues When Allocating IP Addressing by Using DHCP

After completing this module, students will be able to:

- Describe the role of DHCP in the network infrastructure.
- Add and authorize a DHCP Server service.
- Configure a DHCP scope.
- Configure DHCP reservations and options.
- Configure a DHCP relay agent.

Module 2: Managing and Monitoring Dynamic Host Configuration Protocol (DHCP)

This module provides you with the knowledge and skills to manage the DHCP service to reflect changing client IP addressing needs. It also provides you with the knowledge and skills to monitor DHCP server performance, because the DHCP environment is dynamic.

Lessons

- Managing a DHCP Database
- Monitoring DHCP
- Applying Security Guidelines for DHCP

Lab A: Managing and Monitoring DHCP

- Managing and Monitoring DHCP

After completing this module, students will be able to:

- Manage a DHCP database.
- Monitor DHCP.
- Apply security guidelines for DHCP.

Module 3: Resolving Names

This module provides you with the knowledge and skills to assign computer names to the IP addresses of the source and destination hosts, and then use the computer name to contact the hosts.

Lessons

- Multimedia: Introduction to the Name Resolution Process
- Viewing Names on a Client
- Configuring Host Name Resolution
- Configuring NetBIOS Name Resolution

Lab A: Resolving Names

- Troubleshooting Name Resolution

After completing this module, students will be able to:

- Describe the name resolution process.
- View names on a client.

- Configure host name resolution.
- Configure NetBIOS name resolution.

Module 4: Resolving Host Names by Using Domain Name System (DNS)

This module provides you with the knowledge and skills to resolve host names by using Domain Name System.

Lessons

- Multimedia: The Role of DNS in the Network Infrastructure
- Installing the DNS Server Service
- Configuring the DNS Server Service
- Configuring the DNS Zones
- Configuring DNS Zone Transfers
- Configuring a DNS Client

Lab A: Resolving Host Names by Using Domain Name System

- Implementing a DNS Infrastructure

After completing this module, students will be able to:

- Describe the role of DNS in the network infrastructure.
- Install the DNS Server service.
- Configure the DNS Server service.
- Configure the DNS zones.
- Configure DNS zone transfers.
- Configure a DNS client.

Module 5: Integrating Domain Name System and Active Directory

This module provides you with the ability to manage integration between Active Directory directory service and Domain Name System (DNS).

Lessons

- Configuring Active Directory Integrated Zones
- Configuring DNS Dynamic Updates
- Understanding How Active Directory Uses DNS

Lab A: Integrating DNS and Active Directory

- Configuring Active Directory Integrated DNS Zones

After completing this module, students will be able to:

- Describe how Active Directory integrated zones function.
- Configure DNS to support dynamic updates.
- Explain how Active Directory uses DNS.

Module 6: Managing and Monitoring Domain Name System (DNS)

This module provides you with the knowledge and skills to manage and monitor DNS servers to ensure that they are functioning properly and to optimize network performance.

Lessons

- Managing DNS Records
- Testing the DNS Server Configuration
- Monitoring DNS Server Performance

Lab A: Managing and Monitoring DNS

- Managing and Monitoring DNS

After completing this module, students will be able to:

- Manage the properties of DNS records.
- Test DNS server configuration.
- Monitor DNS server performance.

Module 7: Resolving NetBIOS Names by Using Windows Internet Name Service (WINS)

This module provides you with the knowledge and skills to use WINS to register NetBIOS names and resolve them to IP addresses.

Lessons

- Multimedia: The Role of WINS in the Network Infrastructure
- Installing and Configuring a WINS Server
- Managing Records in WINS
- Configuring WINS Replication
- Managing the WINS database

After completing this module, students will be able to:

- Describe the role of WINS in the network infrastructure.
- Install and configure a WINS server.
- Manage records in WINS.
- Configure WINS replication.
- Manage a WINS database.

Module 8: Configuring Routing by Using Routing and Remote Access

This module provides you with the knowledge and skills to configure a routing solution for your network environment.

Lessons

- Multimedia: The Role of Routing in the Network Infrastructure
- Enabling and Configuring the Routing and Remote Access Service
- Configuring Packet Filters

Lab A: Configuring Routing by Using Routing and Remote Access

- Configure Routing and Remote Access
- Plan a Routing Topology

After completing this module, students will be able to:

- Describe the role of routing in the network infrastructure.
- Enable and configure the Routing and Remote Access service.
- Configure packet filters.

Module 9: Securing Network Traffic by Using IPSec and Certificates

This module provides you with the knowledge and skills to secure network traffic and to use certificates with IPSec for increased security.

Lessons

- Implementing IPSec
- Understanding IPSec Deployment Scenarios
- Monitoring IPSec

After completing this module, students will be able to:

- Implement IPSec.
- Understand IPSec deployment scenarios.
- Monitor IPSec.

Module 10: Configuring Network Access

This module provides you with the knowledge and skills to configure a server with the Routing and Remote Access service, create appropriate remote access connections on a network access server, and configure users' access rights.

Lessons

- Introduction to a Network Access Infrastructure
- Configuring VPN Access
- Configuring Dial-up Access
- Configuring Wireless Access
- Controlling User Access to a Network
- Centralizing Network Access Authentication by Using IAS
- Protecting Remote Access by Using Network Access Quarantine

After completing this module, students will be able to:

- Describe a network access infrastructure.
- Configure a virtual private network (VPN) connection.
- Configure a dial-up connection.
- Configure a wireless connection.
- Control remote user access to a network.
- Centralize authentication and policy management for network access by using IAS.
- Control remote access to your network by using Network Access Quarantine.

Module 11: Managing and Monitoring Network Access

This module provides you with the knowledge and skills to manage and monitor network access.

Lessons

- Managing the Network Access Services
- Configuring Logging on a Network Access Server
- Collecting and Monitoring Network Access Data

Lab A: Managing and Monitoring Remote Access

- Monitoring a Remote Access Server

After completing this module, students will be able to:

- Manage the network access services.
- Configure logging on the network access server.
- Collect and monitor network access data.