

Administering a Windows Server Operating System (ITMT 1357)

Credit: 3 semester credit hours (2 hours lecture, 4 hours lab)



Prerequisite/Co-requisite: None

Course Description

A study of administrative tasks needed to maintain a Windows Server operating system including user and group management, network assess and data security. Topics include how to implement, configure and manage Group Policy infrastructure, Group Policy objects (GPOs) using links, security groups, WMI filters, loopback processing, preference targeting and troubleshooting policy application.

Required Textbook and Materials

1. Cengage MindTap access to **MCSA Guide to Networking with Windows Server 2016, Exam 70-741, 1st Edition, Tomsho, Greg; Cengage, 2018**
 - a. **How to buy your Course Materials**
 - Step 1: Sign into **Blackboard** and click on **this course**
 - Step 2: Click on the Cengage link: **Getting Started** in the *Getting Started with Cengage MindTap* section.
 - Step 3: Create or sign into your Cengage account to access or purchase the materials for this course.
 - NOTE:** If you are taking additional courses that use Cengage materials, you can save by purchasing a Cengage Unlimited plan, which gives you access to all Cengage eTextbooks and online homework platforms for one price.
 - Visit [cengage.com/unlimited](https://www.cengage.com/unlimited) or your campus bookstore to learn more.
 - b. Beware of sites that are selling discounted codes. These sources are likely unauthorized sellers who have acquired access codes illegally, and transactions with such sources may pose a risk to your personal information.
 - c. Need help? Visit startstrong.cengage.com for step-by-step registration instructions and videos.
2. Computer Networking and Troubleshooting Technology students are required to have one 64 GB or larger capacity USB Flash Drive to be used for the duration of the time to complete their respective degree.

Course Objectives

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

1. Manage user desktops with Group Policy.
2. Maintain Active Directory Domain Services.
3. Optimize File Services using encryption and advanced auditing.
4. Deploy and maintain server images and monitor Windows Server operating systems.
5. Implement Group Policy infrastructure.
6. Configure and manage user and service accounts.
7. Configure and troubleshoot Domain Network Services (DNS) and remote access.
8. Install, configure and troubleshoot the Network Policy Server Role.
9. Implement Network Access Protection.

Course Outline

1. Configuring TCP/IP
 - a. An Overview of TCP/IP
 - b. IPv4 Addresses
 - c. Configuring IPv4 Addresses
 - d. Internet Protocol Version 6 Overview
 - e. IPv6 Address Types
 - f. IPv6 Auto-configuration
 - g. Transitioning from IPv4 to IPv6
2. Configuring DNS Servers
 - a. Introduction to Domain Name System
 - b. Installing DNS
 - c. Configuring DNS
 - d. Creating DNS Resource Records
 - e. Configuring DNS Zones
 - f. Configuring DNS Server Settings
 - g. Monitoring and Troubleshooting DNS
3. Configuring Advanced DNS
 - a. Managing DNS Zones
 - b. Configuring DNS Zone Storage
 - c. Implementing DNS Policies
 - d. Configuring DNS Security
 - e. Managing and Monitoring the DNS Server
4. Implementing DHCP
 - a. An Overview of Dynamic Host Configuration Protocol
 - b. Installing and Configuring a DHCP Server
 - c. DHCP Server Configuration
 - d. Implementing DHCPv6
 - e. DHCP High Availability

5. Implementing IPAM
 - a. Introduction to IP Address Management
 - b. Deploying an IPAM Solution
 - c. Administering IPAM
 - d. Auditing IPAM
6. Implementing Remote Access
 - a. An Overview of Remote Access
 - b. Installing and Configuring the Remote Access Role
 - c. Configuring IPv4 and IPv6 Routing
 - d. Configuring Network Address Translation
 - e. The DirectAccess Role Service
7. Implementing Network Policy Server
 - a. Network Policy Server Overview
 - b. Installing and Configuring NPS and RADIUS
 - c. Configuring NPS Policies
8. Configuring Distributed File System and BranchCache
 - a. An Overview of the Distributed File System
 - b. Installing and Configuring DFS
 - c. Creating DFS Replication Groups
 - d. An Overview of BranchCache
 - e. Installing and Configuring BranchCache
9. Implementing Advanced Network Solutions
 - a. High-Performance Network Solutions
 - b. Software-Defined Networking

Grade Scale

90 – 100	A
80 – 89	B
70 – 79	C
60 – 69	D
0 – 59	F

Course Evaluation

Final grades will be calculated according to the following criteria:

Labs	40%
Unit Quizzes	20%
Critical Thinking	20%
Final Exam	20%

Course Policies

1. No food, drinks, use of tobacco products, or vaping products in class.
2. Electronic devices not being used for the class, such as phones and headphones, must be turned off while in class. Any device usage during class may result in a deduction of points on an assignment or test.
3. Do not bring children to class.
4. Certification: If a student passes the certification test that is associated with this class, you will receive an “A” on the final exam and credit for 25% of your labs. If you have missed a previous test, you must still take the final exam to substitute for that grade.
5. Attendance Policy: Three absences are allowed. If a student is tardy to class or departs early three (3) times, it will be equal to one (1) absence. Each absence beyond three absences will result in a 2 point deduction from your final grade.
6. If you wish to drop a course, the student is responsible for initiating and completing the drop process. If you stop coming to class and fail to drop the course, you will earn an ‘F’ in the course.
7. Tools: Return all tools and/or software to their designated place.
8. A grade of ‘C’ or better must be earned in this course for credit toward degree requirement.
9. Additional course policies, as defined by the individual course instructor, will be outlined in the course addendum and provided by the instructor.

Technical Requirements (for courses using Blackboard)

The latest technical requirements, including hardware, compatible browsers, operating systems, software, Java, etc. can be found online at:

https://help.blackboard.com/Learn/Student/Getting_Started/Browser_Support/Browser_Checker.

A functional broadband internet connection, such as DSL, cable, or WiFi is necessary to maximize the use of the online technology and resources.

Disabilities Statement

The Americans with Disabilities Act of 1990 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. LIT provides reasonable accommodations as defined in the Rehabilitation Act of 1973, Section 504 and the Americans with Disabilities Act of 1990, to students with a diagnosed disability. The Special Populations Office is located in the Eagles’ Nest Room 129 and helps foster a supportive and inclusive educational environment by maintaining partnerships with faculty and staff, as well as promoting awareness among all members of the Lamar Institute of Technology community. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at (409) 839-2018. You may also visit the online resource at [Special Populations - Lamar Institute of Technology \(lit.edu\)](https://www.lit.edu/special-populations).

Starfish

LIT utilizes an early alert system called Starfish. Throughout the semester, you may receive emails from Starfish regarding your course grades, attendance, or academic performance. Faculty members record student attendance, raise flags and kudos to express concern or give praise, and you can make an appointment with faculty and staff, all through the Starfish home page. You can also log in to Blackboard or MyLIT and click on the Starfish link to view academic alerts and detailed information. It is the responsibility of the student to pay attention to these emails and information in Starfish and consider taking the recommended actions. Starfish is used to help you be a successful student at LIT. For more information, visit <https://lit.edu/student-success/starfish>.

Student Code of Conduct Statement

It is the responsibility of all registered Lamar Institute of Technology students to access, read, understand and abide by all published policies, regulations, and procedures listed in the *LIT Catalog and Student Handbook*. The *LIT Catalog and Student Handbook* may be accessed at www.lit.edu or obtained in print upon request at the Student Services Office. Please note that the online version of the *LIT Catalog and Student Handbook* supersedes all other versions of the same document.

Certification Requirement

CNTT and Cyber Security majors are required to earn certification in one of the following areas prior to graduation.

- A+ Certification
- Network+ Certification
- Security+ Certification
- Linux+ Certification
- Cisco Certified Network Associate (CCNA)