Configuring Advanced Windows Server Operating Systems (ITMT 1305)

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

Prerequisite/Co-requisite: None

Course Description

Advanced configuration tasks required to deploy, manage, and maintain a Windows Server operating system infrastructure. Additional topics include fault tolerance, certificate services, and identity federation.

Required Textbook and Materials

1. Cengage MindTap access to **Hands-On Microsoft Windows Server 2019, 3rd Edition, Eckert, Jason W.; Cengage, 2021**

   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* Module.
   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 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 and Cyber Security 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. Configure and manage high availability
2. Optimize file and storage solutions
3. Implement business continuity and disaster recovery
4. Configure network services such as DHCP, DNS, and IPAM
5. Design and implement an Active Directory Infrastructure
6. Install and configure identity and access solutions

Course Outline

1. Getting Started with Windows Server 2019
    a. Using Windows Server 2019 within an Organization
    b. Windows Server 2019 Features
    c. Windows Server 2019 Editions
    d. Preparing for a Windows Server 2019 Installation
    e. Installing Windows Server 2019
    f. Post-Installation Configuration
    g. Selecting a Windows Server 2019 Lab Environment

2. Configuring Windows Server 2019
    a. Working with Server Manager
    b. Working with the Windows Admin Center
    c. Configuring Server Hardware Devices
    d. Verifying System Files
    e. Configuring Windows Settings
    f. The Windows Registry
    g. Using Windows PowerShell

3. Implementing Hyper-V and Rapid Server Deployment
    a. Implementing Hyper-V
    b. Rapid Server Deployment

4. Introduction to Active Directory and Account Management
    a. Working with Local Users and Groups
    b. Active Directory Basics
    c. Installing Active Directory
    d. Configuring Active Directory
    e. Managing Active Directory Objects
    f. Read-Only Domain Controllers

5. Configuring Resource Access
    a. Configuring Folder and File Attributes
    b. Managing Folder and File Security
    c. Configuring Shared Folders
    d. Implementing Distributed File System
    e. Implementing Quotas and File Screens

6. Configuring Printing
    a. Windows Printing Basics
    b. Configuring a Windows Server 2019 Print Server
    c. Managing Print Jobs
    d. Monitoring and Troubleshooting Printers

7. Configuring and Managing Data Storage
    a. Windows Server 2019 Local Storage Options
    b. Creating and Managing Local Volumes
    c. Accessing and Configuring SAN Storage

    d.   Managing Volume Data

8. Configuring and Managing Network Services
   a. Understanding DNS
   b. Configuring a DNS Server
   c. Troubleshooting DNS
   d. Configuring WINS
   e. Understanding DHCP
   f. Configuring a DHCP Server
   g. Troubleshooting DHCP

9. Configuring and Managing Remote Access Services
   a. Understanding Organization Networks and Remote Access
   b. Understanding VPNs
   c. Implementing VPNs
   d. Understanding DirectAccess
   e. Implementing DirectAccess
   f. Understanding Remote Desktop
   g. Implementing Remote Desktop Services

10. Configuring Web Services and Cloud Technologies
    a. Understanding the Cloud
    b. Configuring Web Services
    c. Configuring Containers
    d. Configuring the Windows Subsystem for Linux
    e. Configuring Linux Containers on Windows
    f. Implementing Windows Server 2019 in a Cloud Environment

11. Managing and Securing Windows Networks
    a. Configuring Group Policy
    b. Deploying Public Key Certificates
    c. Implementing 802.1X Wireless
    d. Configuring Windows Server Update Services
    e. Configuring Windows Defender

12. Monitoring and Troubleshooting Windows Server 2019
    a. Monitoring and Troubleshooting Methodology
    b. Monitoring and Troubleshooting Tools
    c. Resolving Common System Problems

Grade Scale

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

ITMT 1305
Course Syllabus

Course Evaluation
Final grades will be calculated according to the following criteria:

Labs	45%
Quizzes	30%
Final Exam	25%

Course Requirements
1. Demonstrate proficiency through hands-on labs as assigned.
2. Completion of Study Guides as assigned.

Course Policies
1. No food, drinks, or use of tobacco 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 industry 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.

Disabilities Statement

The Americans with Disabilities Act of 1992 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. Among other things, these statutes require that all students with documented disabilities be guaranteed a learning environment that provides for reasonable accommodations for their disabilities. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at (409) 880-1737, visit the Student Services office in the Eagles' Nest, or visit the online resource: https://www.lit.edu/student-success/special-populations

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 Wi-Fi is necessary to maximize the use of the online technology and resources.

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: 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 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)