INFO-2451 System Administration Course Syllabus Fall 2025

"Responsibility for learning belongs to the student, regardless of age" Robert Martin

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Your Instructor

William A Loring

Mailing Address: 1601 E 27th St, Scottsbluff, NE 69361

Scottsbluff Office: Room B7F Office Phone: 308.635.6163

E-mail: loringw@wncc.edu (Preferred contact method)

Scottsbluff Office Hours: MW 1-2 pm, M 5-6 pm, TTh 10-11 am or by appointment

Online Office Hours: By appointment. www.calendly.com/loringw

"There are no stupid questions. Ask questions whenever something isn't completely clear. You can't remember what you don't understand."

Tolerate chaos, uncertainty, and vagueness. "Figuring it out" is part of learning.

Class Information

Class Location: Scottsbluff, Room D1

Time: T 9:30-10:45 am

Catalog Description

This course covers various topics a system administrator would encounter in their profession. The student will learn how a system administrator fulfills various computer management requirements using both Windows and Linux operating systems on physical and virtual machines. Topics include installation, creating and maintaining file systems, user and group administration, backup and restore processes, network configuration, system services, virtualization, and security administration.

3.0 semester hours

(3/45/0/0/0/0) See Figure 1

Course Objectives

Using this course as an instructional medium, the instructor will:

A. Explain common Windows Server and Linux syntax, concepts, and terms.

B. Explain and demonstrate how to design, implement, secure, administer, and troubleshoot Microsoft Windows Server or Linux.

C. Demonstrate and explain how to understand and manage Active Directory and Group Policy.

D. Model self-directed and lifelong learning.

Student Learning Outcomes

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

A. Recognize and define common Microsoft Windows Server and Linux syntax, concepts, and terms. [GE 1, 2]

B. Design, implement, secure, administer, and troubleshoot Microsoft Windows Server and Linux. [GE 2]

C. Understand and manage Active Directory and Group Policy. [GE 2]

D. Self-direct their learning while gaining an ongoing interest in learning more about Microsoft Windows Server and Linux. [GE 5]

Instructional Materials

The materials required for this course are included in Cengage Unlimited eTextbooks + Online Homework Platforms. This is a subscription service providing access to ALL Cengage eTextbooks and digital learning products. One Cengage Unlimited subscription can be used across all courses where Cengage products are assigned, at no additional cost.

Required Cengage Unlimited Access Code (Includes the eTextbook and online labs)

- 9780357700037 Cengage Unlimited (4 month access)
- 9780357700044 Cengage Unlimited (12 month access)

The access code can be purchased at the Cougar Bookstore, Scottsbluff Campus, (308) 635-6066, or online at http://bookstore.wncc.edu

Other Materials

Personal computer with sufficient capacity to run virtualization software such as VirtualBox with multiple virtual machines.

Course Schedule

Course content and schedule may change.

Week	Activities	Assignments
Week 1 08/18 - 08/24	Introduction Discussion Introduction to Course Module 1 Dive Into Windows Server Hybrid Infrastructure	Getting Started activities in Blackboard Professional Communication Activity 1-1: Create a Windows Server Virtual Machine Activity 1-2: Install Windows Server Activity 1-3: Configuring Windows Server Activity 1-4: Network Settings Activity 1-5: Add Internet Access to Your Internal Network Module 1 Quiz
Week 2 08/25 - 08/31	Module 2 Discover Active Directory	Windows Server Activity 2-1: Install Windows 11 Windows Server Activity 2-2: Windows Update PowerShell Getting Started Module 2 Quiz
Week 3 09/01 - 09/07	Module 3 Managing Active Directory Accounts Think Aloud	Windows Server Activity 3-1: Getting to Know Server Manager Windows Server Activity 3-2: Working with Windows Services Windows Server Activity 3-3: Installing Active Directory Windows Server Activity 3-4: Adding a New Domain Admin Account Windows Server Activity 3-5: Adding Computers and Servers to the Domain

		Windows Server Activity 3-6: Installing and Authorizing a DHCP Server Windows Server Activity 3-7: Configuring DHCP Scopes Windows Server Activity 3-8: Working with Exclusions and Reservations Linux Project 2-1: Root Passwords and BASH Commands Linux Project 2-2: Help Utilities Linux Project 2-3: Properly Shut Down Linux
Week 4 09/08 - 09/14	Module 3 Managing Active Directory Accounts	Windows Server Azure Activities 1 Windows Server Activity 4-1: Exploring Active Directory Container Objects Windows Server Activity 4-2: Viewing Default Leaf Objects Windows Server Activity 4-3: Creating User Accounts in Active Directory Windows Server Activity 4-4: Disabling, Renaming, and Enabling an Account Windows Server Activity 4-5: Moving an Account Windows Server Activity 4-6: Changing an Account's Password Windows Server Activity 4-7: Deleting an Account Wk 4: Windows Server PowerShell Activities Linux Project 3-1: Navigate the File Structure Linux Project 3-2: BASH Tab-completion Linux Project 3-3: ls Wildcard Metacharacters

Week 5 09/15 - 09/21	Module 4 Configuring Group Policies Think Aloud	Windows Server Activity 5-1: Creating an OU Structure Windows Server Activity 5-2: Creating Domain Local and Global Security Groups Windows Server Activity 5-3: Locating Objects with Active Directory Users and Computers Windows Server Activity 5-4: Exploring Default GPOs Windows Server Activity 5-5: Working with Group Policies Windows Server Activity 5-6: Creating User Accounts in Active Directory Administrative Center Windows Server Activity 5-7: Editing Multiple Accounts Windows Server Activity 5-8: Working with Default Groups Wk 5: Windows Server PowerShell Activities Linux Project 4-1: Work with Directories Linux Project 4-2: Copy with cp Linux Project 4-3: Move with mv Linux Project 4-6: Remove Files and Directories
Week 6 09/22 - 09/28	Module 4 Configuring Group Policies	Windows Server Activity 6-1: Creating, Linking, and Unlinking GPOs Windows Server Activity 6-2: Configuring and Testing a Local and Domain GPO Windows Server Activity 6-3: Demonstrating GPO Inheritance Blocking Windows Server Activity 6-4: Demonstrating GPO Enforcement

		Windows Server Activity 6-5: Setting a Domain Level Policy Windows Server Activity 6-6: Setting the Default Domain Policy Week 6 Windows Server Powershell Activities Linux Project 4-7: Permissions Linux Project 4-9: Change Ownership Semester Project
Week 7 09/29 - 10/05	Module 5 Configure Domains Think Aloud	Windows Server Activity 7-1: Using GPO Security Filtering Windows Server Activity 7-2: Creating a Software Restriction Policy Windows Server Activity 7-3: Creating an Application Control Policy Windows Server Activity 7-4: Creating the ADMX Central Store Windows Server Activity 7-5: Managing Google Chrome with Group Policies Windows Server Azure Activities 3 Windows Server PowerShell Dating App Linux Project 5-1: View and Create Device Files Linux Project 5-3: Hard Disk Partitions
Week 8 10/06 – 10/12	Module 6 Manage Windows Server in a Hybrid Environment	Windows Server Active Directory Design Windows Server Activity 8-1: Sharing a Folder with Simple File Sharing Windows Server Activity 8-2: Experimenting with NTFS Permissions

		Windows Server Activity 8-3: Setup and Configure Folder Permissions Windows Server Activity 8-4: Manually Mapping a Drive Windows Server Activity 8-5: Map Drives with Logon Scripts Windows Server Activity 8-6: Mapped Drives by Group Policy Preferences Windows Server Activity 8-7: Mapped Drive Logon Scripts by Group Policy Linux Fun Activities 1
Week 9 10/13 - 10/19 Fall Break	Module 7 Configure DNS Think Aloud	Windows Server Activity 12-1: Creating a Reverse Lookup Zone Windows Server Activity 12-2: Manually Creating DNS Host Address A Resource Records Windows Server Activity 12-3: Configuring Forwarders Windows Server Activity 12-4: Creating Static DNS Entries Windows Server PowerShell ADS User Script Linux Project 7-1: Redirect stdout and stderr to a File Linux Project 7-2: Redirect stdout and stdin using pipe metacharacters Semester Project
Week 10 10/20 - 10/26	Module 8 Manage IP Addressing	Linux Project 7-4: Create and Use a Shell Script Linux Project 7-5: Shell Scripts with Decisions and Loops

		Linux Project 7-6: Backup Script with Input Linux Project 7-7: Backup Script Linux Fun Activities 2 Linux Crontab Job Scheduling Semester Project
Week 11 10/27 - 11/02	Module 9 Implement Network Connectivity Think Aloud	Windows Server Activity 11-1: Using the Disk Optimizer Windows Server Activity 11-2: Using Disk Check Windows Server Activity 11-3: Using chkdsk from PowerShell Linux Project 8-2: Use SysV init and Systemd Linux Project 8-3: Configure Service Units Linux Project 8-5: Examine X Windows, accessibility, and localization options Semester Project
Week 12 11/03 - 11/09	Module 10 Configure Storage and File Services	Windows Server Activity 9-1: Creating a Hidden Share and Monitoring Share Access Windows Server Activity 9-2: Configuring Shadow Copies Windows Server Activity 9-3: Using Shadow Copies Linux Project 6-1: Install Ubuntu Server Linux Project 6-2: RAID 5
Week 13 11/10 - 11/16	Module 11 Configure Advanced Storage Solutions	Windows Server Activity 13-1: Enable the Active Directory Recycle Bin

		Windows Server Activity 13-2: Create a Shortcut on the Public Desktop Windows Server Activity 13-3: Enable Remote Access Through the Administrator Remote Desktop Windows Server Activity 13-4: Using Remote Server Computer Management Windows Server Activity 13-5: Installing and Using the Remote Server Administration Tools for Windows 10 Windows Server Activity 13-6: Installing Software with Group Policy Windows Server Activity 13-7: Windows Security Linux Project 11-1: Compression Utilities Semester Project
Week 14 11/17 11/23 Thanks giving	Module 12 Implement Virtualization with Hyper-V and Azure Week 14 Server Administrator Discussion	Linux Project 9-1: View Processes Linux Project 9-3: Create, modify, and kill background processes Linux Project 9-4: Use the top Utility Linux Project 9-5: Schedule Processes
Week 15 11/24 - 11/30	Module 13 Implement Advanced Virtualization Lessons Learned Discussion	Windows Server Week 15 PowerShell ADUser Linux Project 10-5: User Accounts Linux Project 10-6: Modify User Accounts Linux Project 10-8: Remove and Create User Accounts Linux Project 10-9: Work with Groups Semester Project

Week 16 12/01 - 12/07	Module 13 Implement Advanced Virtualization Semester Project Presentation Feedback Discussion	Week 16 PowerShell Computer Information Linux Project 12-1: IP Configuration Linux Project 12-2: Host Name Resolution Linux Project 12-3: VNC Linux Project 13-2: DNS Semester Project
Finals 12/08 - 12/12		Semester Project Final Submission Server Post Assessment

Academic Integrity

The academic integrity policy for this course includes the Institutional Academic Integrity Policy listed at the end of this document.

1. Do your own work.
2. You can ask for help if you get stuck. It is OK to have a study buddy to help with problems or issues. It is not OK to turn in the same assignment as someone else.
3. If you use someone else's work for a small quote or reference, cite the source.
4. Use your own words.
5. Do your own work. We are here to learn. You can't learn without doing the work.

Artificial Intelligence (AI)

1. AI (ChatGPT, etc.) is a tool, just like a pencil, a computer, or Google. All work submitted must be your own. You may not submit any work generated by an AI program as your own.
2. You will be working with AI in the workplace. Certain homework assignments will involve the use of AI technologies. Give credit to the source you use. The aim of these assignments is to familiarize you with practical AI applications.

Minor Violations: First offense: Grade of 0 for the assignment.

Major Violations: Second offense: Grade of F for the class.

Do your own work.

Assignment Creativity

If your assignment submission meets the requirements of the tutorial or assignment, you are free to embellish the resulting work as much as you wish before submission.

WNCC Master Syllabus Contents

This link contains the common WNCC Syllabus policies.