Course Number: NET 120

Course Title: Window Desktop Operating System Administration

Credits: 3

Hours:
Lecture/Lab/Other: 2/2/0

Co-requisite: ENG 101

Implementation: Semester & Year, Fall 2022

Catalog description:

Students learn to install the Windows desktop OS; create users/groups; administer file/print resources; manage hardware; optimize performance and reliability; configure desktops using control panel, registry, system policies; and configure network protocols and services. Covers resource auditing, data storage management, network monitoring, and security, plus introduction to DNS and Active Directory. Hands-on exercises reinforce Microsoft certification exam objectives.

General Education Category: Not GenEd

Course coordinator:
Winston H. Maddox, Professor
Networking, Information Technology and Cybersecurity
609.570.3867, maddoxw@mccc.edu

Required texts & Other materials:
TESTOut Web Material ISBN:( 978-1-935080-45-9)

Course Student Learning Outcomes (SLO):

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

1. Install and configure Windows desktop, Use Microsoft Management Console and Task Scheduler (ILG: 4; PLO: 1, 3)
2. Use Windows Control Panel, Use the Registry, Manage Disks (ILG: 2, 4, 11; PLO: 2, 5)
3. Install and configure Network Protocols (ILG: 4; PLO: 4, 5)
4. Use the DNS Service, Use Active Directory (ILG: 11; PLO: 6)
5. Set Up and Manage User Accounts, Set up and manage groups, Set up and configure printers (ILG: 9, 11; PLO: 1, 5, 8)
6. Secure resources with NTFS Permissions, Administer Shared Folders, Audit resources and events (ILG: 4; PLO: 1, 7)
7. Configure Local Security Policy, Manage data storage, Backup and restore data (ILG: 11; PLO: 1, 2, 6)
8. Monitor access to network resources, Understand the Windows boot process (ILG: 4; PLO: 7)
9. Implement, manage and troubleshoot hardware devices and drivers (ILG:11; PLO: 1, 2, 6)
Course-specific Institutional Learning Goals (ILG):

Institutional Learning Goal 2. Mathematics. Students will use appropriate mathematical and statistical concepts and operations to interpret data and to solve problems.

Institutional Learning Goal 4. Technology. Students will use computer systems or other appropriate forms of technology to achieve educational and personal goals.


Institutional Learning Goal 11. Critical Thinking: Students will use critical thinking skills understand, analyze, or apply information or solve problems.

Program Learning Outcomes for Windows Desktop Operating Systems (PLO)

1. Understand, configure, and install hardware and software, including Internet user software;
2. Understand, describe, and apply network protocols and standards;
3. Explain computing practices and procedures found in most organizations;
4. Use printed and online technical documentation;
5. Describe how the Internet works;
6. Work effectively individually and in workgroups to install and implement information technology;
7. Demonstrate written and oral communication skills.
8. Pass industry certifications, including A+, NET+, Linux+, and Security+; Microsoft’s MCTS, MCITP, MCSA, and MCSE; and Cisco’s CCNA.

Units of study in detail – Unit Student Learning Outcomes:

Unit I  [Unit I Introduction] [Supports Course SLO # 1]

Learning Objective
The student will be able to…

• Understand Windows Administration course and lab facilities are structured.
• Identify basic principles of windows administration.
• Identify and use software application tools

Unit II  [Unit II Windows Installation] [Supports Course SLO # 2]

Learning Objectives
The student will be able to…

• Become familiar with the basics Windows Administration of:
  - Windows Installation
  - Windows Activation
  - Windows Post-Installation Configuration
  - Web Browser Configuration
  - Windows Upgrade
  - User Profile and Data Migration

Unit III  [Unit III System Imaging] [Supports Course SLO # 6]

Learning Objectives
The student will be able to…

• Configure System Images
• Configure Image Servicing
• Explain Provisioning Packages
• Configure and explain Sideloaded Apps
• Develop and manage:
  ▪ Windows Operating System Roles
  ▪ Windows Operating System Roles Facts
  ▪ Using Local User Accounts for Sign-in
  ▪ Joining a Workgroup
  ▪ Using Online User Accounts for Sign-in
  ▪ Using Domain User Accounts for Sign-in
  ▪ Using Azure AD User Accounts for Sign-in
  ▪ Manage Groups in Azure Active Directory
  ▪ Windows User Management Facts

**Unit IV** [Unit IV Windows Device and User Management] [Supports Course SLO # 5]

*Learning Objectives*
*The student will be able to…*
• Configure Devices and Drivers
• Setup Device Driver Troubleshooting
• Configure Display Management
• Explain Local Storage
• Configure OneDrive Storage

**Unit V** [Unit V Hardware Management] [Supports Course SLO # 5]

*Learning Objectives*
*The student will be able to…*
• **Configure and explain:**
  ▪ IPv4 IP Protocols, IPv4 Addresses, Subnet Masks and VLSM
  ▪ IPv4 Address Facts, Subnetting Facts, **IPv6** Addresses
  ▪ IPv6 Facts, IP Configuration, IPv6 Addressing Facts
  ▪ IPv4 to IPv6 Migration Facts

**Unit VI** [Unit VI Network Configuration] [Supports Course SLO # 7]

*Learning Objectives*
*The student will be able to…*
• Develop a solid understanding and ability to articulate and present network architecture(s)
• Have a basic understanding of how various computer languages work.
• Identify and understand hardware and software interrupts, be familiar with advanced Intel microprocessors.
• Understand the detail of the system BIOS, familiar with the Windows internal architecture.
• Understand and work with computer viruses and security, understand and work with various performance and diagnostic software. Prepare for certifications exams
Unit VII  [Unit VII Application Management] [Supports Course SLO # 5]

**Learning Objectives**

The student will be able to…

- Develop a sound familiarization with application management protocols
  - Modify file associations, Repair desktop applications
  - Manage startup applications on Windows 10, Configure startup items
  - Manage desktop applications, Configure UAC Group Policy settings
  - Configure UAC settings to prompt for changes, Configure UAC settings to elevate automatically

Unit VIII  [Unit VIII System Access] [Supports Course SLO # 5]

**Learning Objectives**

The student will be able to…

- Explain family Intel microprocessor architecture
  - Authentication and Authorization, User Rights and Account Policies
  - Credential Management, Authentication Management
  - User Rights and Account Policies, Credential Management
  - Alternative Authentication Options, NTFS Permissions
  - Auditing, Dynamic Access Control (DAC) and Encryption

Unit IX  [Unit IX Resource Sharing] [Supports Course SLO # 5]

**Learning Objectives**

The student will be able to…

- Explain the difference between identification, authentication, and authorization:
  - Under what circumstances would you choose to enable public folder sharing?
  - When using public folder sharing, where are the public folders located?
  - What are the differences between domain(s), public, private, and network profiles?
  - How can you create an administrative share?
  - Shared Resource Troubleshooting

Unit X  [Unit X Mobile Computing] [Supports Course SLO # 5]

**Learning Objectives**

The student will be able to…

- Explain why a company choose to implement co-management
- What are the benefits of integrating Intune in an environment?
- How does modern management differ from traditional management?
- How are traditional Group Polices different from policies in the cloud using Intune?
- Mobile Device Management - Intune Enrollment
- Mobile Device Management - Intune Policies and Profiles
- Identify, explain, configure, demonstrate and manage:
  - BitLocker, Mobile Device Security, Power Management
  - Mobility Options, Mobile Networking, Mobile Apps
  - Mobile Application Management with Intune
Unit XI  [Unit XI System Monitoring] [Supports Course SLO # 5]

**Learning Objectives**

The student will be able to...
- Understand explain, configure, demonstrate and manage:
  - System Configuration Tools
  - Performance Management
  - Resource Monitoring
  - Reliability and Performance Maintenance
  - Windows Optimization
  - System Events
  - Remote Management
  - Remote Desktop and Remote Assistance

Unit XII  [Unit XII System Protection] [Supports Course SLO # 5]

**Learning Objectives**

The student will be able to...
- Be familiar with the Intel microprocessor architecture.
- Windows Updates
- Advanced Windows Updates
- System Restore
- System Backup
- Recovery Tools and Environment

Unit XIII  [Unit XIII Threat Protection] [Supports Course SLO # 5]

**Learning Objectives**

The student will be able to...
- Configure Windows security
- Configure Windows Defender Antivirus with Intune
- Configure enterprise-level disk encryption with Intune
- Create security baselines in Microsoft Intune
- Configure and use Windows Defender Credential Guard
- Configure and use Windows Defender Exploit Guard
- Use Windows Defender Advanced Threat Protection
- Configure and use Windows Defender Application Control
- Use Windows Defender Application Guard
- Configure the Windows Defender Firewall
- Configuring WDFAS
- Configuring an IPsec Connection in WDFAS
- Configuring Windows Defender Firewall using PowerShell
**Evaluation of student learning:** [Evaluates SLOs #1, 2, 3, 4, 7]

Students’ achievement of the course objectives will be evaluated through the use of the following:

- TESTOut Lab assignments assessing students’ computer hardware comprehension skills related to the unit objectives.
- TESTOut Lab Chapter quizzes assessing students’ comprehension of software computer concepts related to the unit objectives.
- Research and Final Research presentation assessing students’ comprehension through the use of word, PowerPoint and graphics to demonstrate knowledge,
- Basic programming Labs and Quizzes assignments assessing students’ basic comprehension of hardware functions and skills related to the unit objectives.
- Exams and Final Research Presentation assessing students’ comprehension of computer concepts and applications related to the unit objectives.

**Grade Criteria**

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<thead>
<tr>
<th>Item</th>
<th>Percent</th>
<th>Description</th>
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<tbody>
<tr>
<td>TESTOut Labs</td>
<td>10%</td>
<td>Activity-based lab Assignment in Excel</td>
</tr>
<tr>
<td>TESTOut Quizzes</td>
<td>10%</td>
<td>15 Question quiz for each unit of Computer Concepts</td>
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<tr>
<td>Exams</td>
<td>35%</td>
<td>3 Assignment based on your IT Topics leading to the final project</td>
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<td>Final Research</td>
<td>45%</td>
<td>Professional Presentation</td>
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<td>Presentation</td>
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