CTS 1328  **Supporting Microsoft Clients**

**Course Description:** This course is intended for students preparing for IT careers as desktop and network support specialists and server administrators, as well as candidates for industry certification. Students will learn how to implement and maintain a Microsoft client operating system. Laboratory fee. A.S. degree credit only. (3-hour lecture, 1-hour lab)

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<th>Course Competency</th>
<th>Learning Outcomes</th>
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| **Competency 1:** The student will demonstrate how to install the Windows client operating system by: | • Information Literacy  
• Critical thinking  
• Computer / Technology Usage |
| 1. Describing the features of the current Windows client operating system, including versions, architecture, components, boot processes and options, distribution methods, upgrade paths and migration issues.  
2. Describing the methods, options and requirements for a Windows client installation.  
3. Performing a pre-installation evaluation and determining installation methods.  
4. Performing an attended and an unattended OS installation.  
5. Transferring user files, settings and applications to a new computer.  
6. Performing a system review and troubleshooting installation issues.  
7. Documenting the system installation. |  |
| **Competency 2:** The student will demonstrate how to configure the Windows client system settings by: |  |
| 1. Describing the Windows User Interface and demonstrating its use, operation and features.  
2. Validating a Windows client installation and performing a system update.  
3. Installing, configuring and updating system device drivers.  
4. Customizing the Windows Desktop, Start Menu, Taskbar, Toolbars and Sidebar. |  |
5. Describing the hardware requirements and features of the Windows display system.
6. Installing, configuring and troubleshooting video display adapters and enabling Windows display features.

**Competency 3:** The student will demonstrate how to manage disks, folders and files for a Windows client:

1. Describing the various types of disks, partitions, volumes and file systems used by Windows systems, and the disk utilities included in Windows.
2. Initializing, partitioning, and formatting disks.
3. Converting disk types and creating volumes.
4. Managing and maintaining file system permissions.
5. Sharing files and folders and controlling user access to data.
6. Performing disk management activities, including file system checks, defragmenting, encrypting and compacting.
7. Configuring data protection and performing system and data backups.

**Competency 4:** The student will demonstrate how to manage users and groups for a Windows client by:

1. Describing the various types of users and groups, including local and domain users.
2. Describing the methods of controlling users’ permissions and access to resources.
3. Creating, configuring, managing and troubleshooting user accounts and profiles.
4. Creating, configuring, managing and troubleshooting local groups.
5. Configuring and troubleshooting user account control (UAC).
6. Performing administrative tasks such as resetting passwords, modifying group memberships, setting group policies, configuring local policies, and securing the system.
**Competency 5:** The student will demonstrate how to manage device drivers and printers for a Windows client by:

1. Describing the various types of device drivers used by Windows and the utilities used to install, configure, manage, upgrade and troubleshoot system devices.
2. Describing the device and driver installation process.
3. Researching and obtaining device drivers, including verification of digital signatures.
4. Configuring driver policies.
5. Installing, configuring, and troubleshooting devices requiring third party drivers.
6. Enabling, disabling, updating and rolling back device drivers.
7. Installing, configuring and troubleshooting local printers.
8. Sharing and accessing a local printer and configuring printer security.
9. Managing printers and documents, including print access, priority, scheduling and spooling.

**Competency 6:** The student will demonstrate how to manage network settings of a Windows client by:

1. Describing the network protocols used by a Windows client and the network tools and utilities provided by Windows.
2. Installing, configuring and troubleshooting Windows network support.
3. Connecting a Windows client to a network.
5. Joining a Windows client to a domain.

**Course Competency 7:** The student will demonstrate how to manage the security features of a Windows client by:

Updated Spring 2021
1. Describing the security tools and features in Windows and accessing them to perform a security audit and update.
2. Installing, configuring and monitoring Windows Firewall to block dangerous incoming and outgoing network traffic.
3. Installing, configuring and monitoring Windows Defender to prevent the infiltration of spyware and other malicious software.
4. Performing anti-virus and other security scanning and removing malicious software.
5. Installing, configuring and monitoring Windows Parental Controls.
6. Installing, configuring and monitoring Automatic Updates, and performing system audits and manual updates.
7. Installing, configuring and monitoring data security measures, including BitLocker and Encrypting File System.

**Course Competency 8: The student will demonstrate how to manage Windows Applications by:**

1. Describing the applications and other software features in Windows.
2. Configuring and troubleshooting Internet Explorer, including management of user preferences, security and privacy settings, RSS feeds and subscriptions, Internet search and add-ons.
3. Configure application compatibility and restrictions.

**Course Competency 9: The student will demonstrate how to optimize Windows client performance by:**

1. Describing the performance optimization tools and features in Windows and explaining their uses.
2. Performing test and audits to establish and document a system baseline.
3. Describing, evaluating, downloading and deploying Windows updates.

Updated Spring 2021
4. Performing periodic system monitoring by using Event Viewer, system logs, reliability, resource and performance monitoring tools.
5. Performing an analysis, update and optimization of a poorly performing Windows client.

**Course Competency 10:** The student will demonstrate how to troubleshoot a Windows client by:

1. Describing common problems that occur in the installation and use of Windows.
2. Discussing guidelines and procedures for troubleshooting a Windows client.
3. Identifying and resolving system boot and start up issues and disk problems by using diagnostic and recovery tools, and booting to a Windows pre-installation environment.
4. Identifying and solving reliability issues by using Windows’ diagnostic and configuration tools.
5. Configuring remote access for troubleshooting remote users.

**Course Competency 11:** The student will demonstrate how to configure Windows client mobile features by:

1. Identifying settings required by mobile users, including battery and power management, display features, data synchronization, input and output devices and tablet features.
2. Installing, configuring and troubleshooting wireless network access.
3. Installing and configuring security measures.

**Course Competency 12:** The student will demonstrate workplace skills and professionalism by:

1. Describing the roles of the IT support specialist in a business enterprise.
2. Describing methods of understanding and managing user’s needs and expectations.
3. Describing methods of logging incidents and reporting problem resolution.
4. Presenting and following oral and written instructions.

- Ethical Issues
5. Demonstrating self-motivation and responsibility to complete an assigned task.
6. Choosing appropriate actions in situations requiring effective time management.
7. Applying principles and techniques for being a productive, contributing member of a team.
8. Identifying and discussing intellectual property rights and licensing issues.
9. Identifying and discussing issues contained within professional codes of conduct.
10. Using appropriate communication skills, courtesy, manners, and dress in the workplace.
11. Documenting problems and solutions in service reports and maintaining support records.
12. Explaining the methods and best practices of interviewing end users to determine the symptoms and probable causes of system problems.