

**Virginia Western Community College**  
**ITN 110**  
**Client Operating System (Windows 10)**

**Prerequisites**

Co-requisite: TEL 150

**Course Description**

Covers installation, configuration, administration, management, maintenance, and troubleshooting of the desktop client operating system in a networked environment.

**Semester Credits: 3    Lecture Hours: 3    Lab/Clinical/Internship Hours: 0**

**Required Materials****Textbook:**

70-698: Installing and Configuring Windows 10 textbook. ISBN: 978-1-119-33129-2 TBD

**Other Required Materials:**

70-698: MOAC Labs Online access code. ISBN: TBD

**Course Outcomes**

**At the completion of this course, the student should be able to:**

- Prepare for installation requirements
- Installing Windows
- Configure Devices and Device Drivers
- Perform Post-Installation Configuration
- Implement Windows in an Enterprise Environment
- Configure Networking
- Configuring Storage
- Configure Data Access and Usage
- Implement Apps
- Configure Remote Management
- Configure Updates
- Monitor Windows
- Configure System and Data Recovery
- Configure Authorization and Authentication
- Configure Advanced Management Tools

## **Topical Description**

- Lesson 01: Preparing for Installation Requirements
  - Preparing for a Windows 10 Installation
    - Determining Hardware Requirements and Compatibility
    - Choosing Between an Upgrade and a Clean Installation
    - Determining Appropriate Editions According to Device Type
    - Determining Requirements for Particular Features
    - Determining and Creating Appropriate Installation Media
- Lesson 02: Installing Windows
  - Installing and Upgrading to Windows 10
    - Performing a Clean Installation
    - Upgrading to Windows 10
    - Using Native VHD Boot
    - Installing and Booting Windows 10 on a VHD
- Lesson 03: Configuring Devices and Device Drivers
  - Managing Devices
    - Using the Devices and Printers Folder
    - Interpreting Data from Device Manager
    - Managing Driver Packages
    - Installing, Updating, and Disabling Drivers
    - Rolling Back a Driver
    - Configuring Driver Settings
    - Resolving Hardware Issues, Device Issues, and Driver Issues
  - Using the Deployment Image Servicing and Management (DISM) Tool to Add Packages
    - Capturing Images
    - Modifying Images Using DISM
- Lesson 04: Performing Post-Installation Configuration
  - Configuring Windows 10
    - Configuring and Customizing the Start Menu, Desktop, Taskbar, and Notification Settings
    - Using Windows 10 Settings
    - Using Control Panel
    - Configuring System Settings
    - Changing Date and Time
    - Configuring Accessibility Options
    - Configuring Power Settings
    - Configuring Cortana
  - Understanding the Registry
  - Configuring Internet Explorer
    - Managing Cookies and Privacy Settings

- Configuring Security Zones
  - Using Dynamic Security and Protected Mode
  - Configuring SmartScreen Filter and Phishing
  - Managing Add-Ons
- Lesson 05: Implementing Windows in an Enterprise Environment
  - Provisioning with the Windows Imaging and Configuration Designer Tool
  - Activating Windows
    - Implementing Volume Activation using a Key Management Service (KMS)
    - Implementing Active Directory–Based Activation
    - Querying and Configuring Activation States Using the Command Line
  - Configuring Active Directory
    - Understanding Active Directory Components
    - Using Group Policy
  - Configuring and Optimizing User Account Control (UAC)
- Lesson 06: Configuring Networking
  - Configuring IP Settings
    - Exploring IPv4 and IPv6 Protocols
    - Using the Default Gateway
    - Understanding Name Resolution
    - Configuring IP Settings and Name Resolution Settings
    - Configuring Advanced Sharing Settings and Network Locations
  - Troubleshooting IP Network Problems
    - Exploring IPv4 and IPv6 Protocols
    - Using the Default Gateway
    - Understanding Name Resolution
    - Configuring IP Settings and Name Resolution Settings
    - Configuring Advanced Sharing Settings and Network Locations
  - Configuring Wireless Networks and Connections
    - Understanding Wi-Fi-Technology Standards
    - Utilizing Wireless Security
- Lesson 07: Configuring Disks, Volumes and File System Options
  - Configuring Disks, Volumes and File System Options
    - Understanding Disk and Drive Types
    - Using Disk Management to Configure Disks, Volumes, and File Systems
    - Using Windows PowerShell to Configure Disks, Volumes, and File Systems
    - Creating and Configuring VHDs
  - Supporting Storage Pools and Storage Spaces
    - Creating Storage Pools
    - Creating Storage Spaces
  - Configuring Removable Storage Devices
  - Troubleshooting Storage and Removable Devices Issues

- Lesson 08: Configuring Data Access and Usage
  - Configuring File Sharing
    - Configuring File System Permissions
    - Understanding Effective NTFS Permissions
    - Viewing Effective Permissions on a Resource
    - Combining NTFS and Share Permissions
    - Troubleshooting Data Access and Usage
  - Understanding the Windows 10 File Structure
  - Configuring Libraries
  - Configuring Public Folders
  - Configuring HomeGroup Connections
- Lesson 09: Implementing Apps
  - Configuring Applications
    - Configuring Desktop Apps
    - Configuring Windows Features
    - Configuring Startup Options
  - Managing Windows Store Apps
    - Configuring the Windows Store
    - Implementing Windows Store Apps
    - Implementing Windows Store for Business
  - Using Deployment Tools to Deploy Applications
    - Installing Software with Group Policy
    - Sideloaded and Deep Linking Apps
    - Creating Provisioning Packages with ICD
- Lesson 10: Configuring Remote Management
  - Accessing a Computer Remotely
    - Configuring Remote Desktop
    - Configuring Remote Assistance
    - Configuring Remote Management Settings
    - Using Microsoft Management Console to Manage Systems Remotely
    - Using Windows Remote Management
    - Using WinRS.exe
    - Using Remote Windows PowerShell
    - Choosing the Appropriate Remote Management Tool
- Lesson 11: Configuring Updates
  - Configuring and Managing Updates
    - Configuring Windows Update Options
    - Managing Update History and Rolling Back Updates
    - Configuring Windows Update Policies
    - Updating Windows Store Apps
  - Managing the Update Life Cycle

- Implementing Insider Preview
- Implementing Current Branch (CB), Current Branch for Business (CBB), and Long-Term Servicing Branch (LTSB) Scenarios
- Lesson 12: Monitoring Windows
  - Configuring and Analyzing Event Viewer Logs
    - Understanding Logs and Events
    - Filtering Events
    - Adding a Task to an Event
    - Configuring Event Subscriptions
  - Managing Performance
    - Monitoring Performance Using Task Manager
    - Monitoring Performance Using Resource Monitor
    - Monitoring Performance Using Performance Monitor
    - Monitoring System Resources
    - Monitoring Performance Using Data Collector Sets
    - Configuring Performance Alerts
- Lesson 13: Configuring System and Data Recovery
  - Configuring System Recovery
    - Configuring a System Restore
    - Performing a PC Refresh or Reset
    - Configuring a Windows 10 File Recovery Drive
    - Restoring Previous Versions of Files and Folders with Windows Backup
    - Performing a Backup and Restore with WBAAdmin
    - Configuring File History
    - Recovering Files from OneDrive
  - Performing Recovery Operations Using Windows Recovery
- Lesson 14: Configuring Authorization and Authentication
  - Supporting Authentication and Authorization
    - Supporting Multi-Factor Authentication
    - Supporting Passwords, PINS, and Picture Passwords
    - Supporting Digital Certificates and Smart Cards
    - Configuring Biometrics, Windows Hello, and Microsoft Passport
  - Configuring Local Accounts, Domain Accounts, and Microsoft Accounts
  - Authenticating Computers and Users
    - Understanding Kerberos and NTLM Authentication
    - Understanding Access Tokens and Credential Caching
    - Configuring Credential Manager
- Lesson 15: Configuring Advanced Management Tools
  - Configuring Advanced Management Tools
    - Configuring Services
    - Using the System Configuration Utility (MSConfig.exe)

- Configuring Task Scheduler
- Configuring Automation of Management Tasks Using Windows PowerShell

### **Notes to Instructors**

- All instructors are to use the same textbook
- All course sections are to follow the same basic course outline
- All hybrid sections must allow for students to complete the labs during regular class time