

Windows Operating System Fundamentals



Courseware 8369-1

Exam 98-349

Course Description

Windows Operating System Fundamentals provides students with fundamental operating system configuration and administration concepts. Students who complete this course will have reviewed all the exam objectives and be on their way to preparing for Microsoft Technology Associate Exam #98-349. It can also serve as a stepping stone to the Microsoft Certified Technology Specialist exams.

Suggested Timings					
20-Hours		12-Week		16-Week	
Instruction	Lab	Instruction	Lab	Instruction	Lab
14	6	28	12	50	18
20		40		68	

Course Series

This *Windows Operating System Fundamentals* courseware is one of seven courses in the Microsoft Technology Associate Series. Other courses available in the series include:

- Software Development Fundamentals
- Windows Development Fundamentals
- Web Development Fundamentals
- Database Administration Fundamentals
- Security Fundamentals
- Network Fundamentals

The Microsoft Technology Associate Series contains exercises that students can use to learn each of the features discussed. Additional resources to practice and apply the skill sets are available from the CCI Technology Associate Microsite. Students are encouraged to register at <http://mta.ccilearning.com> in order access these additional activities both during and after completing the course.

Instructor Resources are available and are produced specifically to help and assist an instructor in preparing to deliver the course using the CCI materials. Contact your coordinator or administrator, or call your CCI Account Manager for information on how to access these resources.

Course Prerequisites

Prior to taking this course, students must possess the following basic computer literacy and Windows skills.

- Start and run Windows
- Use Minimize, Restore Down/Maximize, or Close
- Use the left and right mouse buttons appropriately
- Understand file management techniques
- Navigate between files, folders, or drives

System Requirements

Supported Architecture

- X32 or x64
- Single processor, 2 GHz or faster
- 1 GB RAM or higher

Supported Operating Systems (Note: This course was developed using Windows 7 Professional)

- Any version of Windows 7.
- The system must have TCP/IP installed and configured as the default networking protocol. If you use a standard installation of Windows 7, TCP will be properly installed and configured.

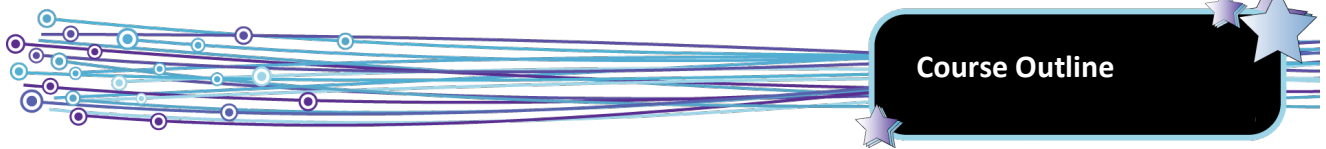
Computer Setup:

- Computers may be configured as part of a workgroup or as part of a domain.
- Each computer should be configured to participate in a LAN within the classroom.
- Each computer should be configured as a DHCP client.
- Each computer should have Internet access. Internet access is required for completing exercises involving Internet research.

Course Objectives

After completing this course, you will be able to:

- ✎ Explain the difference between 32-bit and 64-bit operating systems.
- ✎ Describe the Windows 7 operating system editions, including features, availability and minimum requirements.
- ✎ Identify upgrade paths from various versions of Windows to Windows 7.
- ✎ Explain the function and characteristics of Windows Anytime Upgrade.
- ✎ Understand hardware and software compatibility issues and explain why upgrading to Windows 7 requires planning.
- ✎ Use the PC Upgrade Advisor.
- ✎ Use the Windows 7 Compatibility Center to check for software and hardware compatibility issues.
- ✎ Explain the difference between an in-place upgrade and a clean install.
- ✎ Explain different types of installation strategies, including High Touch installation, High Touch with Standard Image, Lite Touch installation and Zero Touch installation.
- ✎ Understand media-based and network-based installations.
- ✎ Explain cloud-based software deployment.
- ✎ Explain the purpose and advantages of virtualization.
- ✎ Explain the function and characteristics of Windows XP Mode.
- ✎ Explain the function and characteristics of MED-V.
- ✎ Identify the features and components of the Windows 7 Desktop.
- ✎ Understand how to navigate a breadcrumb trail.
- ✎ Identify the features and components of the Windows Explorer window.
- ✎ Add and configure Desktop gadgets.
- ✎ Describe and access user profile folders.
- ✎ Configure display settings, including screen resolution and screen magnification and configure Windows 7 to support multiple display devices.
- ✎ Create and modify Desktop shortcuts, create Start menu shortcuts, and add system icons to the Desktop.
- ✎ Use Aero features for window management.
- ✎ Modify and apply Aero themes.
- ✎ Use the Snipping Tool.
- ✎ Describe the major features of Internet Explorer.
- ✎ Describe the Windows Media Center.
- ✎ Describe Windows Media Player.
- ✎ Configure administrative tools.
- ✎ Configure accessibility options.
- ✎ Describe how to use MSCONFIG.
- ✎ Explain the Windows Sync Center.
- ✎ Explain the Windows Mobility Center.
- ✎ Explain administrator and standard user accounts.
- ✎ Describe the function of the User Account Control feature and describe its prompts and elevation levels.
- ✎ Describe the process of local, network, and group policy application installation.
- ✎ Install and remove application software.



Course Outline

- ⇒ Describe the function and characteristics of services, and identify startup types, service accounts and service dependencies.
- ⇒ Describe the advantages provided by remote management tools.
- ⇒ Explain the Microsoft Management Console (MMC) and create a custom console.
- ⇒ Explain how group policy is useful for remote management.
- ⇒ Describe Windows PowerShell.
- ⇒ Describe the function of Remote Desktop and explain the necessary configuration settings and underlying technologies.
- ⇒ Explain application virtualization and describe the features and functions of App-V, Remote Desktop Services, and RemoteApp.
- ⇒ Explain Virtual Desktop Infrastructure (VDI).
- ⇒ Explain disk partitions and logical drives.
- ⇒ Describe the file systems supported in Windows 7, including FAT32 and NTFS.
- ⇒ Describe how to format a drive and how to convert a drive from FAT32 to NTFS.
- ⇒ Explain the purpose and function of HomeGroups and describe how to create and join them.
- ⇒ Describe public shares, basic shares and advanced shares.
- ⇒ Explain how to map network shares to drive letters.
- ⇒ Describe share permissions, NTFS permissions and effective permissions.
- ⇒ Explain how to share printers.
- ⇒ Explain basic encryption concepts.
- ⇒ Describe the function of Encrypting File System (EFS) and BitLocker, and describe how to manage encryption keys.
- ⇒ Explain disk compression.
- ⇒ Explain the function and characteristics of libraries and describe how to use, customize, create and delete libraries.
- ⇒ Explain the purpose and function of device drivers.
- ⇒ Describe how compatibility issues between drivers and the operating system can affect the system.
- ⇒ Describe how and when to update device drivers.
- ⇒ Explain system resources and resource allocation.
- ⇒ Explain the features and function of Plug-and-Play technology.
- ⇒ Explain when to install third-party software for devices.
- ⇒ Describe storage device interfaces.
- ⇒ Describe the function of RAID.
- ⇒ Describe basic, dynamic and virtual hard disks.
- ⇒ Describe the process of using cloud storage.
- ⇒ Describe printer ports, printer drivers, the Print Spooler, and the Print queue.
- ⇒ Compare and contrast local printers and network printers.
- ⇒ Use the Devices and Printers page.
- ⇒ Explain how to connect and share a local printer.
- ⇒ Explain how to connect to a shared printer.
- ⇒ Explain how to disconnect printers.
- ⇒ Describe how to manage printers.
- ⇒ Explain the purpose and function of the Microsoft XPS Document Writer.
- ⇒ Describe how printing over the Internet works.
- ⇒ Explain video, audio, and infrared devices.
- ⇒ Describe how to use Windows Device Manager.
- ⇒ Identify various types of malware.
- ⇒ Identify security risks other than malware.
- ⇒ Explain how malware affects the Windows Registry.
- ⇒ Explain the use of firewalls.
- ⇒ Describe the function and purpose of anti-spyware software.
- ⇒ Describe the function and purpose of antivirus software.
- ⇒ Describe how to avoid malware infection.
- ⇒ Understand the function of the Windows Action Center.
- ⇒ Explain and use the Malicious Software Removal Tool.
- ⇒ Describe and use Windows Defender.
- ⇒ Describe the function of Microsoft Security Essentials.
- ⇒ Describe the function of Microsoft Forefront Endpoint Protection.
- ⇒ Explain Windows Backup and Restore.
- ⇒ Describe the function of system images.
- ⇒ Describe the function of restore points.
- ⇒ Describe the function of previous versions.
- ⇒ Explain Advanced Boot Options, including Safe Mode and Last Known Good Configuration.
- ⇒ Describe Microsoft update types.
- ⇒ Explain how to use Windows Updates.
- ⇒ Explain and use Windows system maintenance tools, including Defrag and Disk Cleanup.
- ⇒ Explain how to use the Task Scheduler.
- ⇒ Describe the purpose and function of the System Information tool.



Course Outline

About This Courseware

- Courseware Description
- Course Design
- Course Objectives
- Conventions and Graphics

Lesson 1: Introduction to the Operating System

- Lesson Objectives
- A Matter of Perspective
- Reviewing the Basics
 - Hardware, Drivers, OS and Apps
 - Hardware Essentials
 - Operating System Essentials
- Windows Operating System Versions and Editions
 - Sub-editions
 - Comparing Edition Features
 - Understanding 32-bit and 64-bit Operating Systems
 - Understanding Windows Anytime Upgrade
- Planning for Windows 7 Installation
 - System Requirements
 - Using the PC Upgrade Advisor
 - Windows Compatibility Center
- Windows 7 Upgrade versus Clean Install
 - Upgrade
 - Clean Install
 - Identifying Upgrade Paths
 - Application Compatibility
- Deployment Options
 - Preliminary Concepts
 - Removable Media Installation
 - Network-based Installations
- Introducing Virtualization
 - Hypervisor
 - XP Mode
 - MED-V
- Lesson Summary
- Review Question

Lesson 2: Operating System Configuration

- Lesson Objectives
- Introducing the Desktop
 - What Lies Beneath
 - Review of File Storage Basics
 - Windows Explorer
 - Configuring Desktop Settings
 - Looking at Gadgets
 - Profiles
 - Changing Display Settings
 - Creating Shortcuts
 - Working with Aero

- Understanding Native Applications and Tools

- Snipping Tool
- Windows Internet Explorer
 - Streamlined Interface
 - Useful Tools and Features
 - Security Features
- Media in Windows 7
 - Windows Media Center (WMC)
 - Windows Media Player (WMP)
- Configuring Control Panel Options
 - Configuring Administrative Tools
 - Configuring Accessibility Options
- Using the System Configuration Tool
- Understanding Mobility
 - Windows Sync Center
 - Windows Mobility Center
- Lesson Summary
- Review Questions

Lesson 3: Managing Users and Applications

- Lesson Objectives
- Managing Windows
 - User Accounts
 - Controlling Access to Resources
 - User Account Control (UAC)
 - Configuring UAC
 - Installing and Uninstalling Applications
 - Local Application Installation
 - Network Application Installation
 - Installation through Group Policy
 - Understanding Services
 - Startup Types
 - Service Accounts
 - Service Dependencies and Managing Services
 - Managing Remote Systems and Users
 - Microsoft Management Console (MMC)
 - Group Policy
 - Remote Desktop Connection
 - Application Virtualization
 - App-V
 - Remote Desktop Services (RDS)
 - RemoteApp
 - RDS Infrastructure
 - Virtual Desktop Infrastructure
 - What is VDI?
- Lesson Summary
- Review Questions

Lesson 4: Working with File Systems

- Lesson Objectives
- Understanding File Systems
 - Hard Drive Basics
 - File Systems supported in Windows 7
 - File Allocation Table (FAT) file system
 - New Technology File System (NTFS)
 - Formatting Drives
 - Converting the File System
 - Viewing disks, partitions, volumes and file systems
- Setting Up File and Print Sharing
 - HomeGroups
 - Setting Up Shares
 - Mapping Drives
 - Understanding Permissions
 - Sharing Printers
- Understanding Encryption
 - Encryption Concepts
 - Encrypting File System (EFS)
 - BitLocker
 - Managing Encryption Keys
 - Compression
- Working with Libraries
 - Default Libraries
 - Using Libraries
 - Creating Custom Libraries
- Lesson Summary
- Review Questions