



# AKSARA UNITED MANAGEMENT SDN BHD (1210369-W)

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## COMP TIA A+

Duration: 5 Days; Instructor-led

### AUDIENCE

The target student is anyone with basic computer user skills who is interested in obtaining a job as an IT professional or PC technician. Possible job environments include mobile or corporate settings with a high level of face-to face client interaction, remote-based work environments where client interaction, client training, operating systems and connectivity issues are emphasized, or settings with limited customer interaction where hardware activities are emphasized.

### METHODOLOGY

This program will be conducted with interactive lectures, PowerPoint presentation, discussions and practical exercise

### COURSE OBJECTIVES

Upon completion of this program, participants should be able to :

- Identify the components of standard desktop personal computers
- Identify fundamental components and functions of personal computer operating systems
- Identify best practices followed by professional personal computer technicians
- Install and configure computer components
- Install and configure system components.
- Maintain and troubleshoot peripheral components
- Troubleshoot system components
- Install and configure operating systems
- Maintain and troubleshoot installations of Microsoft Windows
- Identify network technologies
- Install and manage network connections
- Support laptops and portable computing devices
- Support printers and scanners
- Identify personal computer security concepts
- Support personal computer security

### COURSE OUTLINES

#### Module 1 - Identifying Personal Computer Components

- Identifying Components of Motherboards
  - Types of System Boards
  - System Board Form Factors
  - System Board Components
- Identifying Purposes and Characteristics of Processors

- Identifying Purposes and Characteristics of Memory
  - DRAM
  - SRAM
  - ROM
  - CMOS
  - Memory Packaging
- Identifying Purposes and Characteristics of Storage Devices
  - Hard Disk Drive Systems
  - Floppy Drives
  - CD-ROM Drives
  - CD-R and CD-RW Drives
  - DVD-ROM Drives
  - DVD Burners
  - Other Storage Media
  - Advanced Digital Storage
- Identifying Purposes and Characteristic of Power Supplies
  - Floppy Drive Power Connectors
  - AT System Connectors
  - Standard Peripheral Power Connector
  - Modern Power Connectors
- Identifying Purposes and Characteristics of
  - Display Concepts
  - Video Technologies
  - Monitors
  - Liquid Crystal Displays ( LCDs)
- Identifying Input Devices
  - Mouse
  - Keyboard
  - Bar-code Reader
  - Multimedia Devices
  - Biometric Devices
  - Touch Screens
- Identifying Purposes and Characteristics of Adapter Cards
  - Video Card
  - Network Interface Card (NIC)
  - Modem
  - Sound Card
  - I/O Card
- Identifying Characteristics of Ports and Cables
  - Peripheral Port Connector Types
  - D-subminiature Connectors
  - Other Types of Ports
  - Common Peripheral Interfaces and Cables
- Identifying Purposes and Characteristics of Cooling Systems
  - Fans
  - Memory Cooling
  - Hard Drive Cooling
  - Chipset Cooling
  - CPU Cooling

#### Module 2 - Effectively Working With Personal Computer Components

- Installing, Configuring, and Optimizing PC Components

- Upgrading Storage Devices
- Upgrading Display Devices
- Upgrading Input/Multimedia Devices
- Identifying Tools and Diagnostics for PC Components
  - Gathering Tools
  - Basic Aspects of Troubleshooting
  - Basic Diagnostic Procedures
  - Recognizing and Isolating Issues
  - Applying Basic Troubleshooting Techniques
- Performing Preventative Maintenance on Personal Computers

### **Module 3 - Understanding Laptops And Portable Devices**

- Understanding Laptop Architecture
  - Laptops vs. Desktops
  - Laptop Case
  - Motherboards and Processors
  - Memory
  - Storage
  - Displays
  - Input Devices
  - Expansion Bus and Ports
  - Docking Stations
  - Power Systems
- Managing Power and Removing Devices
  - Understanding Laptop Power Management
  - Managing Power in Windows
  - Removing Laptop-Specific Hardware
- Troubleshooting and Performing Preventative Maintenance on Laptops
  - Diagnosing Laptop Problems
  - Performing Preventative Maintenance

### **Module 4 - Understanding Operating Systems**

- Understanding Operating Systems
  - Operating System Terms and Concepts
  - Microsoft Windows
  - Alternative Operating Systems
- Using Operating Systems
  - The Windows Interface
  - What's in a Window?
  - Control Panel
  - The Command Prompt
  - The Registry
  - Virtual Memory
  - Windows System Files
  - Disk Management
  - File Management

### **Module 5 - Understanding Basics Of Installing, Configuring, Optimizing, And Upgrading Operating Systems**

- Installing Operating Systems
  - Installation Prerequisites
  - Preparing the Computer for Installation
  - Windows XP Installation
  - Post-Installation Routines
- Upgrading the Operating System
  - Upgrade Prerequisites
  - Upgrading to Windows 2000
  - Upgrading to Windows XP
  - Finalizing Your Upgrade

- Installing Device Drivers
  - Rights and Security Issues
  - Basic Procedure for Device Installation
  - Windows Version-Specific Installation Items
- Optimizing Windows 2000 and Windows XP
  - Managing Virtual Memory
  - Defragmenting Disks
  - Using Disk Caches
  - Managing Temporary Files

### **Module 6 - Identifying Operating System Troubleshooting And Diagnostic Procedures**

- Troubleshooting Steps
  - Step 1 : Talk to the Customer
  - Step 2 : Gather Information
  - Step 3 : Eliminate Possibilities
  - Step 4 : Evaluate Your Results
  - Step 5 : Document Your Work
- Understanding Boot Sequences
  - Listing the Important Files
  - Identifying Important Files in Windows 2000/XP
  - Understanding the Windows 2000/XP Boot Process
  - Advanced Startup Options
  - Using the Recovery Console
  - Creating Boot Disks or an Emergency Repair Disk
- Identifying Windows
  - Files Related Problems
  - System Files Not Found
  - Configuration File Issues
  - Swap Files Issues
  - Windows Boot Issues
  - Troubleshooting Other Common Problems
  - Understanding Windows Reporting
- Identifying Windows-Based Troubleshooting Utilities
  - Disk Management Tools
  - System Management Tools
  - File Management Tools
- Identifying Diagnostic Resources
  - User/installation Manuals
  - Internet/Web Resources
  - Training Materials
- Performing Preventative Maintenance on Operating Systems
  - Using Recommended Hardware
  - Obtaining Current Drivers
  - Installing Windows Properly
  - Shutting Down Properly
  - Updating Windows
  - Scheduling Backups
  - Creating Restore Points
  - Guarding against Viruses

### **Module 7 - Understanding The Basics Of Printers And Scanners**

- Understanding Printers and Scanner Fundamentals
  - Impact Printers
  - Bubble-Jet Printers
  - Laser Printers
  - Printer Interfaces and Supplies

- Scanners and Their Components
- Installing Configuring and Upgrading Printers and Scanners
  - Printer and Scanner Installation Procedures
  - Optimizing Printer and Scanner Performance
- Troubleshooting Printer and Scanners
  - Dot-Matrix Printer Problems
  - Bubble-Jet Printer Problems
  - Laser and Page Printer Problems
  - Scanner Troubleshooting

### Module 8 - Networking Fundamentals

- Understanding Networking Principles
  - Understanding Networking Fundamentals
  - Identifying Common Network Media
  - Understanding Networking Components
- Installing, Configuring, and Troubleshooting Networks
  - Installing and Configuring Network Interface Cards
  - Obtaining Wired and Wireless Internet Connections
  - Troubleshooting Network Interface Cards

### Module 9 - Understanding Network Security Fundamentals

- Understanding Security
  - Authentication Technologies
  - Working with Hardware and Software Security
  - Understanding Wireless Security
  - Understanding Data and Physical Security
- Security Solutions
  - BIOS Security
  - Malicious Software Protection
  - Data Access
  - Backup Procedures
  - Data Migration
  - Data Remnant Removal
  - Password Management
  - Locking Workstations
- Identifying Security Problems Areas

### Module 10 - Identifying Safety And Environmental Issues

- Understanding Safety and Environmental Issues
  - Identifying Potential Safety Hazards
  - Identifying Environmental Concerns
  - Using Safety Documentation
  - Using Appropriate Repair Tools
  - Handling Accidents
- Applying Proper Safety and Disposal Procedures
  - Preventing Electrostatic Discharge (ESD)
  - Working in a Safe Environment
  - Handling Equipment
  - Following Disposal Procedures

### Module 11 - Understanding Professionalism And Communication

- Using Good Communication Skills
  - Elicit Problem Symptoms from Customers
  - Have the Customers Reproduce the Error
  - Identify Recent Changes
  - Use the Collected Information
- Using Appropriate Behavior

- Punctuality
- Accountability
- Flexibility
- Confidentiality
- Respect
- Privacy
- Putting It All in Perspective

### Module 12 - Working With Personal Computer Components

- Removing, Installing, and Configuring Components
  - Selecting Components
    - Motherboards, CPUs, Memory, and Adapter Cards
    - Storage Devices
    - Power Supplies
    - Display Devices
    - Input Devices
    - Cooling Systems
  - Using Tools and Diagnostic Procedures for Personal Computer Components
    - Understanding Computer Resources
    - Determining Available Resources
    - Manually Specifying Resource Assignment
    - Diagnostic Resources
  - Performing Preventative Maintenance for Personal Computer Components

### Module 13 - Working With Laptops And Portable Devices

- Using Laptops and Portable Devices
  - Identifying Applications for Laptop-Specific Communication Connections
  - Identifying Laptop-Specific Power Requirements
  - Understanding LCD Technology
- Removing Devices and Video Sharing
  - Removing Laptop-Specific Hardware
  - Understanding Video Memory Sharing
- Troubleshooting Laptops
  - Identifying Specific Safety Issues
  - Diagnosing Laptop Problems

### Module 14 - Installing, Configuring, Optimizing, And Upgrading Operating Systems

- Using Operating Systems
  - Using the Command Prompt
  - Managing Disks Directories and Files
  - Using Windows Utilities
- Optimizing Operating Systems
  - Managing Virtual Memory
  - Defragmenting Disks
  - Managing Temporary Files
  - Managing Services, Startup, and Applications
- Troubleshooting Windows
  - Recovering Windows
  - Recognizing and Resolving Common Operational Problems and Error Messages
  - Using Windows Diagnostic Utilities
- Performing Preventative Maintenance
  - Updating Windows
  - Scheduling Backups
  - Creating Restore Points

## **Module 15 - Installing, Configuring, Optimizing, And Upgrading Printers And Scanners**

- Understanding Printer and Scanner Processes
  - Impact Printers
  - Ink-Dispersion Printers
  - Laser Printers
  - Other Printers
  - Scanner Processes
- Installing, Configuring, Optimizing, and Upgrading Printers and Scanners
  - Printer and Scanner Installation Procedure
  - Installing Printer Upgrades
  - Optimizing Scanner Performance
- Using Printer and Scanner Troubleshooting Tools and Techniques
  - Multi-meter
  - Screwdrivers
  - Cleaning Solutions
  - Extension Magnets
  - Test Patterns
- Performing Preventative Maintenance
  - Performing Scheduled Maintenance
  - Ensuring a Suitable Environment
  - Using Recommended Supplies

- General Rules for the Exam

## **Module 16 - Installing, Configuring, Optimizing, And Upgrading Network Systems**

- Understanding Networking
  - Identifying Network Protocols and Technologies
  - Identifying Network Connectivity Technologies
- Working with Additional Network Components
  - Working with Browsers
  - Establishing Network Connectivity
  - Sharing Network Resources
- Using Network Tools and Diagnostics
  - Network Tools to Use
  - Troubleshooting Network Issues
- Performing Preventative Network Maintenance

## **Module 17 - Installing, Configuring, Upgrading, And Optimizing Security Systems**

- Understanding Security Baselines
- Hardening a System
  - Hardening the OS and NOS
  - Hardening File Systems
  - Working with Access Control Lists
  - Working with Group Policies
- Auditing and Logging
- Updating Your Operating System
  - Hot fixes
  - Service Packs
  - Patches
- Revisiting Social Engineering
- Recognizing Common Attack
  - Back Door Attacks
  - Spoofing Attacks
  - Man-in-the-Middle Attacks
  - Replay Attacks
  - Password-Guessing Attacks
  - Denial of Service (DoS) and Distributed DoS (DDoS) Attacks
  - TCP Attacks