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**Learning Style: On Demand**

**Provider:**

**Difficulty: Intermediate**

**Course Duration: 18 Hours**

## **Hardware and Operating System Fundamentals (CompTIA A+)**

### **About this Course:**

Hardware and Operating System Fundamentals is a 19 chapter course containing information not limited to Hardware, operating systems, network and security fundamentals, which also discuss about managing components and storage, security threats, vulnerabilities and controls in placed.

### **Course Objectives:**

In this course, you will install, configure, optimize, troubleshoot, repair, upgrade, and perform preventive maintenance on personal computers, digital devices, and operating systems.

You will:

- Support operating systems.
- Install and configure PC system unit components and peripheral devices.
- Install, configure, and troubleshoot display and multimedia devices.
- Install, configure, and troubleshoot storage devices.
- Install, configure, and troubleshoot internal system components.
- Install, configure, and maintain operating systems.
- Maintain and troubleshoot Microsoft Windows.
- Explain network infrastructure concepts.
- Configure and troubleshoot network connections.
- Manage users, workstations, and shared resources.
- Implement client virtualization and cloud computing.
- Implement physical security.
- Secure workstations and data.
- Troubleshoot workstation security issues.
- Support and troubleshoot laptops.
- Support and troubleshoot mobile devices.
- Install, configure, and troubleshoot print devices.
- Implement operational procedures.

## **Audience:**

- This course is designed for individuals who have basic computer user skills and who are interested in obtaining a job as an entry-level IT technician. This course is also designed for students who are seeking the CompTIA A+ certification and who want to prepare for the CompTIA A+ Core 1 220-1001 Certification Exam and the CompTIA A+ Core 2 220-1002 Certification Exam.

## **Prerequisites:**

- To ensure your success in this course, you should have experience with basic computer user skills, be able to complete tasks in a Microsoft® Windows® environment, be able to search for, browse, and access information on the Internet, and have basic knowledge of computing concepts. You can obtain this level of skills and knowledge by taking the following official CompTIA courses

## **Course Outline:**

Follow is the outline for Hardware and Operating System Fundamentals

### **Installing and Configuring PC Components**

- Use Appropriate Safety Procedures
- PC Components
- Common Connection Interfaces
- Install Peripheral Devices
- Troubleshooting Methodology

## **Installing, Configuring, and Troubleshooting Display and Multimedia Devices**

- Install and Configure Display Devices
- Troubleshoot Display Devices
- Install and Configure Multimedia Devices

## **Installing, Configuring, and Troubleshooting Storage Devices**

- Install System Memory
- Install and Configure Mass Storage Devices
- Install and Configure Removable Storage Devices
- Configure RAID
- Troubleshoot Storage Devices

## **Installing, Configuring, and Troubleshooting Internal System Components**

- Install and Upgrade CPUs
- Configure and Upgrade BIOS/UEFI
- Install Power Supplies
- Troubleshoot Internal System Components
- Configure a Custom PC

## **Network Infrastructure Concepts**

- Wired Networks
- Networking Hardware Devices
- Wireless Networks
- Internet Connection Types
- Network Configuration Concepts
- Network Ports and Services

## **Configuring and Troubleshooting Networks**

- Configure Network Connection Settings
- Install and Configure SOHO Networks
- Configure SOHO Network Security
- Configure Remote Access
- Troubleshoot Network Connections
- Install and Configure IoT Devices

## **Implementing Client Virtualization and Cloud Computing**

- Configure Client-Side Virtualization
- Cloud Computing Concepts

## **Supporting and Troubleshooting Laptops**

- Use Laptop Features
- Install and Configure Laptop Hardware
- Troubleshoot Common Laptop Issues

## **Supporting and Troubleshooting Mobile Devices**

- Mobile Device Types
- Connect and Configure Mobile Device Accessories
- Configure Mobile Device Network Connectivity
- Support Mobile Apps

## **Installing, Configuring, and Troubleshooting Print Devices**

- Maintain Laser Printers
- Maintain Inkjet Printers
- Maintain Impact, Thermal, and 3D Printers
- Install and Configure Printers
- Troubleshoot Print Device Issues
- Install and Configure Imaging Devices

## **A+ Core 2 (220-1002)**

### **Supporting Operating Systems**

- Identify Common Operating Systems
- Use Windows Features and Tools
- Manage Files in Windows
- Manage Disks in Windows
- Manage Devices in Windows

### **Installing, Configuring, and Maintaining Operating Systems**

- Configure and Use Linux OS
- Configure and Use macOS
- Install and Upgrade Operating Systems
- OS Maintenance Procedures

### **Maintain and Troubleshoot Microsoft Windows**

- Install and Manage Windows Applications
- Manage Windows Performance
- Troubleshoot Windows

### **Configuring and Troubleshooting Networks**

- Configure Network Connection Settings
- Install and Configure SOHO Networks
- Configure SOHO Network Security
- Configure Remote Access
- Troubleshoot Network Connections

### **Managing Users, Workstations and Shared Resources**

- Manage Users

- Configure Shared Resources
- Configure Active Directory

## Security Concepts

- Logical Security Concepts
- Threats and Vulnerabilities
- Physical Security Measures

## Securing Workstations and Data

- Implement Security Best Practices
- Implement Data Protection Policies
- Data Protection During Incident Response

## Troubleshooting Workstation Security Issues

- Detect, Remove, and Prevent Malware
- Troubleshoot Common Workstation Security Issues

## Supporting and Troubleshooting Mobile Devices

- Secure Mobile Devices
- Troubleshoot Mobile Device Issues

## Implementing Operational Procedures

- Use Appropriate Safety Procedures
- Environmental Impacts and Controls
- Create and Maintain Documentation
- Use Basic Change Management Best Practices
- Implement Disaster Prevention and Recovery Methods
- Use Basic Scripting
- Professionalism and Communication

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