



CompTIA: A+ Core 1 V15 Certification

On-Demand

Course ID #: 7000-1191-ZZ-Z

Hours: 35

Delivery Method: Group Internet Based

Course Content

Description:

CompTIA A+ Core 1 is the first of two exams required to earn the industry-standard A+ certification, designed to launch your tech career. This exam focuses on foundational skills in hardware, networking, mobile devices, and troubleshooting. Passing Core 1 and Core 2 prepares you for roles like IT support specialist and help desk technician while building the knowledge needed to pursue advanced certifications like Network+ and Security+.

Objectives:

Upon successful completion of this course, students will:

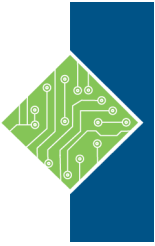
- Define the role of an IT Specialist
- Install Motherboards and Connectors
- Install System Devices
- Troubleshoot PC Hardware
- Compare Local Networking Hardware
- Configure Network Addressing and Internet
- Support Network Services
- Summarize Virtualization and Cloud Concepts
- Support Mobile Devices
- Support Print Devices

Prerequisites:

To ensure your success in this course, we recommend you have a minimum of 12 months of hands-on experience in a help desk technician, desktop support technician, or field service technician job role.

Target Audience:

This course is designed for individuals beginning careers in IT or seeking to develop foundational networking skills.



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Topics:

What Does an IT Specialist Do?

The Hero of Problem Solving

- Role of an IT Specialist
- Skills and Abilities

The Troubleshooting Methodology

- Best Practice Methodology
- Identify the Problem
- Establish and Test a Theory
- Question the Obvious
- Establish a New Theory or Escalate
- Implement a Plan of Action
- Verify and Document

Additional Resources

- Troubleshooting Methodology

Module Quiz

Installing Motherboards and Connectors

Cables and Connectors

- Personal Computers
- Lab: Explore the Lab Interface
- Peripheral Devices
- Universal Serial Bus Cables
- USB Standards
- USB Cables and Standards
- Lab: Install USB Devices
- Display Types
- Display Components
- HDMI and DisplayPort Video Cables
- Thunderbolt Interface
- Lightning Interface
- Serial Advanced Technology Attachment Interface
- Molex Power Connectors
- External SATA
- Lab: Set Up a Desktop Computer
- Lesson Review

Motherboards

- Motherboard Functions
- Electrical Safety and ESD
- Motherboard CPU and System Memory Connectors
- Motherboard Storage Connectors
- Peripheral Component Interconnect Express Interface
- Peripheral Component Interconnect Interface
- Motherboard Form Factors
- Motherboard Installation
- Install a Motherboard
- Motherboard Headers and Power Connectors
- Lab: Choose and Install a Motherboard
- Video Cards
- Lab: Upgrade a Video Card
- Capture Cards
- Sound Cards
- Network Interface Cards
- Installing & Configuring Motherboards, CPUs & Add-on Cards
- Lesson Review

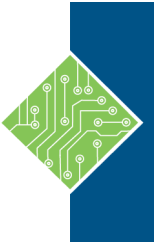
Legacy Cables

- DVI and VGA Video Cables
- Lab: Select and Configure Dual Monitors
- Serial Cables
- Adapter Cables
- Lesson Review
- Lab: Set up an A/V Workstation

Additional Resources

- Cable Types
- Motherboards
- Exercise: History of Cables
- Exercise: Motherboard Diagram Creation
- Exercise: Legacy Cables Timeline
- Exercise: Build a Cable Chart Capstone

Module Quiz



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Installing System Devices

Power Supplies and Cooling

- Power Supply Units
- Lab: Install a Power Supply
- Wattage Rating
- Power Supply Connectors
- 20-pin to 24-pin Motherboard Adapter
- Modular Power Supplies
- Redundant Power Supplies
- Change the Power Supply
- Lab: Troubleshoot Power Supply Problems
- Fan Cooling Systems
- Heat Sinks and Thermal Paste
- Fans
- Liquid Cooling Systems
- Lesson Review

Storage Devices

- Storage Devices
- Mass Storage Devices
- Solid-State Drives
- Hard Disk Drives
- Redundant Array of Independent Disks
- RAID 0 and RAID 1
- RAID 5 and RAID 10
- RAID 6 (Striping with Double Parity)
- RAID Types
- Removable Storage Drives
- Optical Drives
- Lab: Install SATA Devices
- Lesson Review

System Memory

- System RAM and Virtual Memory
- RAM Types
- Memory Modules
- Lab: Select Memory by Sight
- Multi-channel System Memory
- Memory Troubleshooting
- Lab: Install Triple Channel Memory
- ECC RAM
- Lesson Review

CPUs

- CPU Architecture
- x86 CPU Architecture
- x64 CPU Architecture
- ARM CPU Architecture
- CPU Features
- CPU Socket Types
- CPU Types and Motherboard Compatibility
- Install a Processor
- Lesson Review
- Challenge Lab: Troubleshoot Memory

Additional Resources

- System Memory
- Matching Computer Components
- Exercise: Cooling System Infographic
- Exercise: Memory Performance Experiment
- Exercise: Evolution of Storage Devices
- Exercise: Create a CPU Architecture Diagram
- Exercise: CPU Performance Experiment Capstone

Module Quiz

Troubleshooting PC Hardware

BIOS and UEFI

- BIOS and UEFI
- Lab: Find BIOS/UEFI Settings
- Boot and Device Options
- USB Permissions
- Fan Considerations
- Boot Passwords and Secure Boot
- Activity: Secure Boot Feedback
- Trusted Platform Modules
- Activity: TPM Hash Comparison
- Lab: Configure BIOS/UEFI Security
- Lesson Review

Power and Disk Issues

- Troubleshoot Power Issues
- Lab: Troubleshoot System Power
- Troubleshoot POST Issues
- Lab: Troubleshoot System Startup
- Troubleshoot Boot Issues



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- Lab: Troubleshoot Boot Issues
- Troubleshoot Boot Sector Issues
- Troubleshoot OS Errors and Crash Screens
- Troubleshoot Drive Availability
- Lab: Troubleshoot Drive Availability
- Troubleshoot Drive Reliability and Performance
- Troubleshoot RAID Failure
- Troubleshooting Problems with Storage Drives & RAID Arrays
- Lesson Review

System and Display Issues

- Troubleshoot Component Issues
- Overheating
- Physical Damage
- Troubleshoot Performance Issues
- Troubleshoot Inaccurate System Date/Time
- Troubleshoot Missing Video Issues
- Troubleshoot Video Quality Issues
- Troubleshooting Video, Projector & Display Issues
- Lab: Troubleshoot GPU
- Lesson Review
- Lab: Resolve PC Hardware Support Tickets
- Lab: Troubleshoot a Malfunctioning Computer

Additional Resources

- BIOS and UEFI
- Troubleshooting example: Video Issues
- Exercise: Boot Process Walkthrough
- Exercise: Hard Drive Health Monitoring
- Exercise: Create a Troubleshooting Checklist
- Exercise: Power Supply Wattage Calculation Capstone

Module Quiz

Checkpoint Review

Comparing Local Networking

Hardware

Network Types

- LANs and WANs
- SOHO and Enterprise Networks
- Datacenters

- SOHO, Enterprise, and Personal Area Networks
- Lesson Review

Networking Hardware

- Network Interface Cards
- Lab: Select and Install a Network Adapter
- Patch Panels
- Wiring a Patch Panel
- Lab: Connect Patch Panel Cables
- Switches
- How Does an Access Switch Forward Data?
- Lab: Connect Computers with a Switch
- Unmanaged and Managed Switches
- Power over Ethernet
- Lesson Review

Network Cable Types

- Unshielded Twisted Pair
- Shielded Twisted Pair
- Activity: Identify Unshielded and Shielded Twisted Pair
- Cat Standards
- Copper Cabling Connectors
- Activity: Identify Copper Connectors
- Copper Cabling Installation Tools
- Copper Cabling Test Tools
- Network Taps
- Copper Cabling Installation Considerations
- Optical Cabling
- Activity: Identify Fiber Optic Connectors
- Coaxial Cabling
- Lesson Review

Wireless Networking Types

- Access Points
- Frequency Bands
- IEEE 802.11a
- IEEE 802.11b/g
- 802.11n
- Identify IEEE 802.11 Standards
- Wi-Fi 5 and Wi-Fi 6
- Wi-Fi 7 (802.11be)
- Wireless LAN Installation Considerations
- Wi-Fi Analyzers
- Long-Range Fixed Wireless



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- Bluetooth, RFID, and NFC
- Lab: Secure a Small Wireless Network
- Lab: SOHO Wi-Fi Configuration Settings
- Lesson Review

Additional Resources

- Network Switches
- Building Wireless Networks
- Exercise: Network Design Challenge
- Exercise: Hardware Comparison Chart
- Exercise: Network Cable Infographic
- Exercise: Wireless Networking Timeline
- Exercise: Create a Network Infographic Capstone

Module Quiz

Configuring Network Addressing and Internet Connections

Internet Connection Types

- Internet Connection Types and Modems
- Digital Subscriber Line Modems
- Cable Modems
- Lab: Connect a Cable Modem
- Fiber to the Curb and Fiber to the Premises
- Lab: Connect Fiber Optic Cables
- Fixed Wireless Internet Access
- Cellular Radio Internet Connections
- Routers
- Firewalls
- Lesson Review

TCP/IP Concepts

- TCP/IP
- Link or Network Interface layer
- Internet Layer
- Transport Layer
- Application Layer
- IPv4 Addressing
- Lab: Configure IP Addresses
- Network Prefixes
- IPv4 Forwarding
- Public and Private Addressing
- IPv4 Host Address Configuration

- Static Versus Dynamic Host Address Configuration
- Static vs Dynamic
- SOHO Router Configuration
- IPv6 Addressing
- Lesson Review

Network Communications

- Protocols and Ports
- Transmission Control Protocol
- Network Packets
- User Datagram Protocol
- Wireshark
- Well-Known Ports
- Lesson Review

Network Configuration Concepts

- DHCP Functions
- Domain Name System
- DNS Queries
- DNS Record Types
- DNS Spam Management Records
- Virtual LANs
- Virtual Private Networks
- Lesson Review
- Challenge Lab: Install a SOHO Network

Additional Resources

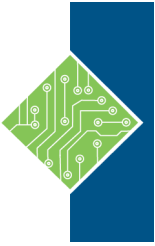
- Ports and Protocols
- DHCP and DNS Services
- Exercise: Internet Connection History Timeline
- Exercise: Create a TCP/IP Infographic
- Exercise: Protocol Poster Project
- Exercise: Visualizing the DHCP Process
- Exercise: Protocol Timeline Capstone

Module Quiz

Supporting Network Services

Networked Host Services

- File/Print Servers
- Database Servers
- Web Servers
- Hyper Transfer Protocol Secure
- Mail Servers



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- Mailbox Servers
- Navigate a Mailbox Server
- Directory and Authentication Servers
- Remote Terminal Access Servers
- Time Servers
- Network Monitoring Servers
- Lesson Review

Internet and Embedded Appliances

- Proxy Servers
- Lab: Use a Proxy Server
- Spam Gateways and Unified Threat Management
- Load Balancers
- Legacy Systems
- Embedded Systems and SCADA
- Internet of Things Devices
- Lesson Review

Troubleshoot Networks

- Troubleshoot Wired Connectivity
- Troubleshoot Network Speed Issues
- Lab: Fix a Network Connection
- Troubleshoot Wireless Issues
- Troubleshoot VoIP Issues
- Troubleshoot Limited Connectivity
- Lesson Review
- Lab: Troubleshoot a Network Issue

Additional Resources

- Client Server Relationship
- Troubleshooting Networks
- Exercise: Server Comparison Project
- Exercise: Exploring Everyday Embedded Systems
- Exercise: Troubleshooting with Command-Line Tools
- Exercise: Build a Smart Home Device Capstone

Module Quiz

Checkpoint Review

Summarizing Virtualization and Cloud Concepts

Client-Side Virtualization

- Hypervisors
- Uses for Virtualization
- Lab: Explore Virtualization
- Virtualization Resource Requirements
- Virtualization Security Requirements
- Lab: Create Virtual Hard Disks
- Lesson Review

Cloud Concepts

- Cloud Characteristics
- Cloud Deployment
- Common Cloud Deployment Models
- Use the Azure Interface
- Common Cloud Service Models
- Manage IaaS Virtual Machines (VMs) in Azure That Run Windows Server
- Cloud File Storage
- Content Delivery Networks (CDNs)
- Lesson Review

Additional Resources

- Virtualization
- Cloud Service Models
- Exercise: Exploring Hypervisors
- Exercise: Cloud Service Model Exploration
- Exercise: Exploring Cloud Provider Services Capstone

Module Quiz

Supporting Mobile Devices

Mobile Devices and Peripherals

- Mobile Device Accessories
- Mobile Device Wired Connection Methods
- Port Replicators and Docking Stations
- Lab: Manage Mobile Devices
- Wi-Fi Networking
- Connect to a Wireless Network
- Cellular Data Networking
- Mobile Hotspots and Tethering



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- Bluetooth Wireless Connections
- Near-Field Communication Wireless Connections
- Configure a Laptop Dock and External Peripherals
- Lesson Review

Mobile Apps and Data

- Mobile Apps
- Account Setup
- Types of Data to Synchronize
- Email Configuration Options
- Synchronization Methods
- Enterprise Mobility Management
- Location Services
- Lesson Review

Laptop Hardware

- Laptop Disassembly Processes
- Battery Replacement
- RAM and Adapter Replacement
- Disk Upgrades and Replacement
- Keyboard and Security Component Replacement
- Lesson Review

Troubleshoot Mobile Devices

- Power and Battery Issues
- Hardware Failure Issues
- Activity: Hardware Failure Issues
- Screen and Calibration Issues
- Connectivity Issues
- Malware Issues
- Lesson Review
- Challenge Lab: Mobile Hardware Support

Additional Resources

- Troubleshooting Mobile Devices
- Exercise: Peripheral History Timeline
- Exercise: App Exploration and Categorization
- Exercise: Laptop Hardware Budgeting
- Exercise: Troubleshooting Flowchart Creation
- Exercise: Peripheral Design Challenge Capstone

Module Quiz

Supporting Print Devices

Printers and Multifunction Devices

- Printer Unboxing and Setup Location
- Firmware Management in MFDs and Printers
- Print Device Connectivity
- Lab: Select and Install a Printer
- Printer Drivers and Page Description Languages
- Printer Properties
- Printing Preferences
- Printer Sharing
- Connect to a Printer
- Lab: Configure Network Printing
- Printer Security
- Activity: Security Print and Badging
- Scanner Configuration
- Lesson Review

Print Device Maintenance

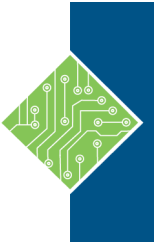
- Laser Printer Imaging Process
- Laser Printer Maintenance
- Inkjet Printer Imaging Process
- Inkjet Printer Maintenance
- Thermal Printer Maintenance
- Impact Printer Maintenance
- Printer Basics
- Replace a Printer Fuser
- Replace a Printer Toner
- Clear a Paper Jam in a Printer
- Lesson Review

Troubleshoot Print Devices

- Printer Connectivity Issues
- Print Feed Issues
- Print Quality Issues
- Finishing Issues
- Print Job Issues
- Activity: Character Encoding Explorer
- Lesson Review
- Lab: Resolve Print Services Support Tickets

Additional Resources

- Connecting Printers
- Printer Troubleshooting
- Exercise: Compare Printer Types and



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Maintenance Practices

- Exercise: Printer Maintenance Best Practices
- Exercise: Troubleshooting Common Printer Problems
- Exercise: Printer Troubleshooting Flowchart Capstone

Module Quiz

Checkpoint Review

Hardware and Network Sandbox

- Lab: Hardware Sandbox
- Lab: Network Sandbox

CompTIA A+ Core 1 220-1201

Practice exams

Prepare for CompTIA A+ Core 1 Certification

- Why Should I Take a Certification Exam?
- Exam Details for A+ Core 1 (220-1201)
- How to Take the Certification
- Tips for Taking the

A+ 220-1201 Core 1 Practice exams

- Exam Practice 1: Mobile Devices
- Exam Practice 2: Networking
- Exam Practice 3: Hardware
- Exam Practice 4: Virtualization and Cloud Computing
- Exam Practice 5: Hardware and Network Troubleshooting
- A+ 220-1201 Core1 Exam Practice
- Skills Practice: Competency in IT Hardware and Network Support

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NASBA CPE details are provided on the following pages.



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NASBA Information

Level: Basic

Advanced Preparation:

Attendance Requirement: To be awarded the full credit hours, you must sign in and attend the entire course.

Recommended Field(s) of Study: Computer Software & Applications

Recommended CPEs: 39.00

Policies: Course Registration, Cancellation, Refund, and Complaint Resolution

For more information regarding administrative policies such as complaint and program cancellation policies, please contact our offices at 800-639-3535 or visit us at: www.tcworkshop.com

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NOTE: Since our information is in multiple places on our website or in PDF format that is sent to clients, we have provided our normal course content with the NASBA Information added along with links to our policy page on the web. We will add our name to the Official National Registry Statement after we are approved.