CO-AA+2
COMPTIA A+ CORE II

DURATION	LEVEL	TECHNOLOGY	DELIVERY METHOD	TRAINING CREDITS
5 Days	Foundation	Hardware & Software	Instructor-led	NA

INTRODUCTION

CompTIA A+ Certification is globally recognized, covering essential IT skills like hardware, networking, and security, with hands-on exams and comprehensive learning tools, opening doors to various IT support roles.

By completing two focused exams—Core 1 (220-1201) and Core 2 (220-1202)—candidates demonstrate their ability to solve every day IT challenges with confidence and precision. These individuals also gain more than just a certification—they join a global community of IT professionals dedicated to continuous learning and career advancement. This certification not only validates their ability to support today's technologies but also lays the foundation for future IT certifications and long-term career growth.

As a trusted certification by employers worldwide, CompTIA A+ opens doors to a variety of entry-level IT roles, including Help Desk Technician, Technical Support Specialist, and IT Support Administrator. It provides a competitive edge in the job market, ensuring candidates stand out to hiring managers and employers seeking skilled professionals to support today's core technologies.

AUDIENCE PROFILE

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 2 (220-1202) Certification Exam.

PREREQUISITES

To ensure your success in this course, students should have 12 months of hands-on experience in an IT support specialist job role.

COURSE OBJECTIVES

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

Furthermore, students 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

COURSE CONTENT

Lesson 1: What Does an IT Specialist Do?
1.1 The Hero of Problem Solving
- Role of an IT Specialist
- Skills and Abilities

1.2 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

Lesson 2: Managing Support Procedures
2.1 Documentation
- Standard Operating Procedure
- Service Level Agreements

- Incident and Ticketing Systems
- Categories and Severity
- Ticket Management
- Activity: Escalation Levels
- Support Documentation and Knowledge Base Articles
- Lessons Learned
- Clear Written Communication
- Knowledge Base
- Knowledge Base Articles
- Policy Documentation
- Lab: Create a Ticket
- Lab: Close a Ticket
- Lab: Use Help Desk System
- Live Lab: Explore the VM Lab Environment
- Lesson Review

2.2 Professional Communication
- Professional Support Processes
- Professional Support Delivery
- Professional Appearance
- Professional Communications
- Clarifying and Questioning Techniques
- Difficult Situations
- Dealing with Difficult Customers
- Do Not Post Experiences on Social Media
- Lesson Review

2.3 Types of Operating Systems
- Windows and macOS
- UNIX, Linux, and Chrome OS
- iOS and Android
- Windows File System Types
- Linux and macOS File System Types
- OS Compatibility Issues
- Vendor Life-cycle Limitations
- Applied Live Lab: Manage a Support Ticket
- Lesson Review
-

2.4 Challenge Live Lab: Resolve Help Desk Tickets
- Additional Resources
- Operating System Types
- Documentation Policies and Procedures
- Exercise: Incident Lifecycle Mapping
- Exercise: Elevator Pitch Practice
- Exercise: Operating System History Timeline
- Exercise: Incident Response Plan Capstone
- Module Quiz

Lesson 3: Configuring Windows
3.1 Windows User Settings
- Windows Interfaces
- Windows Settings and Control Panel
- Lab: Explore Windows Settings
- Accounts Settings

- Using the Windows Desktop Interface
- Privacy Settings
- Desktop Settings
- Lab: Require a Screen Saver Password
- Ease of Access Settings
- File Explorer
- File Explorer Options
- Indexing Options
- Applied Live Lab: Configure Desktop Settings
- Lesson Review

3.2 Windows System Settings
- System Settings
- Update and Security Settings
- Lab: Configure Windows Update
- Device Settings
- Display and Sound Settings
- Power Options
- Lab: Edit Power Options
- Apps, Programs, and Features
- Apps Settings
- Network Settings
- Administrative Tools
- Management Shortcuts
- Lesson Review

3.3 Install and Configure Applications
- System Requirements for Applications
- OS Requirements for Applications
- Distribution Methods
- Other Considerations
- Applied Live Lab: Configure Windows Apps
- Lesson Review

3.4 Cloud-Based Applications
- Email Systems
- Storage
- Collaboration Tools
- User Licensing
- Identity Synchronization
- Lab: Create Azure Storage Account
- Lesson Review

3.5 Additional Resources
- Windows Utilities
- Windows Network Settings
- Exercise: Exploring the Purpose of Different Windows Utilities
- Exercise: System Settings Hands-On Practice
- Exercise: Hands-On Installation Practice
- Exercise: Cloud-Based Applications
- Exercise: Cloud Comparison Activity Capstone
- Module Quiz

Lesson 4: Managing Windows
4.1 Use Management Consoles
- Device Manager

- Disk Management Console
- Disk Maintenance Tools
- Lab: Disk Management
- Task Scheduler
- Local Users and Groups Console
- Lab: Users and Groups
- Certificate Manager
- Group Policy Editor
- Registry Editor
- Custom Microsoft Management Consoles
- Applied Live Lab: Manage User Accounts
- Lesson Review

4.2 Command-Line Tools
- Command Prompt
- Navigation Commands
- File Management Commands
- Lab: Manage Files and Folders
- Disk Management Commands
- System Management Commands
- Use System Management Commands
- Applied Live Lab: Configure File Storage
- Lesson Review

4.3 Windows Networking
- Windows Network Connection Types
- IP Addressing Schemes
- Windows Client Configuration
- Network Location
- Windows Defender Firewall Configuration
- VPN and WWAN Connection Types
- Lab: Configure a VPN Connection
- Proxy Settings
- Lab: Local Firewall Settings
- Lab: Configure TCP/IP Settings on Windows 10
- Lab: Configure TCP/IP Settings on Windows 11
- Applied Live Lab: Manage Network and Security Settings
- Lesson Review

4.4 Challenge Live Lab: Manage Windows Workstations

4.5 Challenge Live Lab: Set Up Windows Workstations

4.6 Additional Resources
- Windows Management Consoles
- The Command-Line Interface
- Exercise: Research and Document Snap-Ins
- Exercise: Command Documentation
- Exercise: Research Firewall Basics
- Exercise: Create a Custom MMC Console Capstone
- Module Quiz

Lesson 5: Supporting Windows
5.1 Troubleshoot Windows Networking
- Troubleshoot IP Configuration
- Lab: Assisted Troubleshooting
- Troubleshoot Local Network Connectivity
- Lab: Troubleshoot Physical Connectivity
- Troubleshoot Remote Network Connectivity
- Troubleshoot Name Resolution
- Troubleshoot Network Ports
- Lab: Connectivity
- Lab: Services/Name Resolution
- Lesson Review

5.2 Remote Access Technologies
- Remote Desktop Tools
- RDP Server and Security Settings
- Microsoft Remote Assistance
- Lab: Configure Remote Services
- WinRM
- Secure Shell
- Desktop Management and Remote Monitoring Tools
- Simple Protocol for Independent Computing Environments (SPICE)
- Other Remote Access Tools
- Applied Live Lab: Provide Remote Support
- Lesson Revie

5.3 Performance and Troubleshooting Tools
- System Information
- Event Viewer
- Task Manager Process Monitoring
- Task Manager Performance Monitoring
- CPU and GPU Monitoring
- Memory Monitoring
- Disk and Network Monitoring
- Task Manager User Monitoring
- Startup Processes and Services Console
- Lab: Manage Applications
- Resource Monitor and Performance Monitor
- Performance Counters
- System Configuration Utility
- Lesson Review

5.4 Troubleshoot Windows OS Problems
- Boot Process
- Boot Recovery Tools
- Lab: Boot into the Windows Recovery Environment
- System Restore
- Lab: Create a Restore Point
- Update and Driver Roll Back
- System Repair, Reinstall, and Reimage

- Troubleshoot Boot Issues
- Lab: Configure the Boot Order
- Troubleshoot Profile Issues
- Troubleshoot Performance Issues
- Troubleshoot System Fault Issues
- Troubleshoot Application and Service Fault Issues
- Applied Live Lab: Support Windows OS
- Lesson Review

5.5 Challenge Live Lab: Resolve Troubleshooting Tickets

5.6 Challenge Live Lab: Resolve Network Troubleshooting Tickets

5.7 Additional Resources
- Networking Command-Line Tools
- Remote Access
- Exercise: Mastering Diagnostic Tools
- Exercise: Research and Compare Remote Access Tools
- Exercise: Performance Monitor Activity
- Exercise: Windows Tool Guide Capstone
- Module Quiz
- Checkpoint Review

Lesson 6: Securing Windows
6.1 Logical Security Concepts
- Logical Security Controls
- Information Security
- Hashing and Encryption Concepts
- Asymmetric Encryption
- Digital Signatures and Key Exchange
- User and Group Accounts
- User Account Control
- Lab: Create User Accounts
- Authentication Methods
- Authentication
- Lesson Review

6.2 Windows Security Settings
- Windows Login Options
- Windows Domains and Active Directory
- Lab: Create OUs
- Group Policy and Login Scripts
- Lab: Use System Commands
- Lab: Group Policy Management
- Lesson Review

6.3 Windows Shares
- Workgroup Setup
- File Share Configuration
- Network Browsing and Mapping Drives
- Printer Sharing
- NTFS versus Share Permissions

- Lab: Configure NTFS Permissions
- Permissions Inheritance
- Domain Setup
- Home Folders
- Roaming Profiles and Folder Redirection
- Lab: Support AD Domain Networking
- Lesson Review

6.4 Challenge Live Lab: Manage Domain Accounts

6.5 Additional Resources
- Authentication and Login in Windows
- Windows Security Settings
- Exercise: Create A Security Policy
- Exercise: Research Windows Security Features
- Exercise: Windows Shares Research Assignment
- Exercise: Windows Security Infographic Capstone
- Module Quiz

Lesson 7: Installing Operating Systems
7.1 Windows Editions
- Windows Versions
- Windows Home Edition
- Work and Education Features
- Windows Pro and Enterprise Editions
- Windows Upgrade Paths and Feature Updates
- Lab: Windows 11 Features/Desktop
- Lesson Review

7.2 OS Installations and Upgrades
- Installation and Upgrade Considerations
- Unattended Installations
- Boot Devices
- Disk Configuration
- Repair Installation
- Applied Live Lab: Perform a Remote Network Installation
- Lesson Review

7.3 Challenge Live Lab: Support Windows Installation and Upgrade Issues

7.4 Additional Resources
- Windows Editions
- OS Installs and Upgrades
- Exercise: Research and Compare Windows Editions
- Exercise: Step-By-Step OS Installation Guide
- Exercise: Compare OS Installation Methods Capstone
- Module Quiz

Lesson 8: Supporting Other OS
8.1 Linux Features

- Shells, Terminals, and Consoles
- Command Interface
- Navigation Commands
- Search Commands
- Filesystem Management
- File Management Commands
- Lab: File Management
- User Account Management
- File Permissions Commands
- Lab: Manage Linux File Ownership
- Applied Live Lab: Report Linux Configuration Settings
- Lesson Review

8.2 Package and Network Management
- Package Management Commands
- Process Monitoring Commands
- Network Management Commands
- Lab: Informational and Network Tools
- Backup and Scheduling Commands
- Lab: Configure Linux
- Applied Live Lab: Manage Linux Apps and Files
- Lesson Review

8.3 macOS Features
- Interface Features
- System Folders and Finder
- System Settings
- Security and User Management
- iCloud and Continuity
- App Installation and Management
- OS and App Updates
- Network and Device Settings
- Time Machine Backup
- Troubleshoot Crashes and Boot Issues
- Lesson Review

8.4 Challenge Live Lab: Install and Support Linux OS

8.5 Additional Resources
- Linux versus Windows
- Linux User Accounts
- Exercise: Exploring Key Features of Linux
- Exercise: Linux Package Search and Information
- Exploring the macOS Interface
- Exercise: Linux Distribution Exploration Capstone
- Module Quiz
- Checkpoint Review

Lesson 9: Configuring SOHO Network Security
9.1 Attacks, Threats, and Vulnerabilities
- Vulnerabilities
- Social Engineering

- Lab: Respond to Social Engineering Exploits
- Phishing and Evil Twins
- Threat Types
- Password Attacks
- Cross-site Scripting Attacks
- SQL Injection Attacks
- Lab: Explore SQL Injection Flaws
- Lesson Review

9.2 Wireless Security Protocols
- Wi-Fi Protected Access
- Wi-Fi Authentication Methods
- Enterprise Authentication Protocols
- Authentication Methods
- RADIUS, TACACS+, and Kerberos
- Lesson Review

9.3 SOHO Router Security
- Home Router Setup
- Lab: SOHO Router Configuration
- Firmware Update
- Home Router LAN and WLAN Configuration
- Home Router Firewall Configuration
- Home Router Port Forwarding Configuration
- Universal Plug-and-Play
- Screened Subnets
- Secure a Small Wireless Network
- Lesson Review

9.4 Additional Security Measures
- Physical Access Control
- Lab: Implement Physical Security
- Lock Types
- Alarms and Surveillance
- Lesson Review

9.5 Challenge Live Lab: Resolve SOHO Network Issues

9.6 Additional Resources
- Understanding Social Engineering
- Wireless Security Protocols
- Exercise: Threat Analysis Report
- Exercise: Wireless Protocol Comparison Chart
- Exercise: SOHO Security Best Practices Infographic
- Exercise: Physical Access Research and Presentation

- Exercise: Cyber Attack Case Studies Capstone
- Module Quiz

Lesson 10: Managing Security Settings
10.1 Account Security
- Password Best Practices
- Lab: Enforce Password Settings
- End User Best Practices
- Restrict User Permissions
- Change Default Administrator Account and Password
- Disable Guest Account
- Account Policies
- Unused Services
- Lab: User Policy Management
- Applied Live Lab: Configure Domain Account Security
- Lesson Review

10.2 Workstation Security
- Execution Control
- Trusted/Untrusted Software Sources
- AutoRun and AutoPlay
- Windows Defender Antivirus
- Windows Defender Antivirus Updated Definitions
- Activating and Deactivating Windows Defender Antivirus
- Lab: Configure Microsoft Defender Antivirus
- Windows Defender Firewall
- Windows Defender
- Encrypting File System
- Lab: Encrypt Files with EFS
- Windows BitLocker and BitLocker To Go
- Lab: Configure BitLocker with a TPM
- Applied Live Lab: Analyze Workstation Security Settings
- Lesson Review

10.3 Browser Security
- Browser Selection and Installation
- Lab: Practice Installing & Removing Browser Software
- Browser Settings
- Lab: Safe Browsing Best Practices
- Browser Extensions and Plug-ins
- Browser Patching
- Secure Connections and Valid
- Browser Privacy Settings
- Clear Browser History
- Applied Live Lab: Configure Browser Security
- Lesson Review

10.4 Troubleshoot Workstation Security
– Malware Vectors
– Malware Payloads
– Ransomware and Cryptominers
– Troubleshoot PC Security Symptoms
– Desktop Alerts and Notifications
– Endpoint Monitoring Solutions
– Troubleshoot Browser Symptoms
– Best Practices for Malware Removal
– Check for Anti-Malware on a Machine
– Infected Systems Quarantine
– Malware Removal Tools and Methods
– Malware Infection Prevention
– Lesson Review

10.5 Challenge Lab: Resolve Security Tickets

10.6 Additional Resources
– Malware Types
– Malware Symptoms, Removal, and Prevention for SOHO Environments
– Exercise: Security Breach Research and Presentation
– Exercise: Windows Security Configuration Checklist
– Exercise: Research on Browser Vulnerabilities
– Exercise: Malware Removal Tools Research and Presentation
– Exercise: Research on Malware Trends Capstone
– Module Quiz

Lesson 11: Supporting Mobile Software
11.1 Mobile OS Security
– Screen Locks
– Mobile Security Software
– Enterprise Mobility Management
– Mobile Device Management
– Two-factor Authentication
– Mobile Data Security
– Locator Apps and Remote Wipe
– Lab: Configure Remote Wipe
– Lesson Review

11.2 Troubleshoot Mobile OS and App Software
– Mobile Device Troubleshooting Tools

– Mobile Device Troubleshooting
– Troubleshoot Device and OS Issues
– Troubleshoot App Issues
– Troubleshoot Connectivity Issues
– Lab: Connect to WiFi
– Lesson Review

11.3 Troubleshoot Mobile OS and App Security
– Root Access Security Concerns
– Mobile App Source Security Concerns
– Mobile Security Symptoms
– Lesson Review
– Additional Resources
– Mobile Applications and Connectivity
– Exercise: Mobile OS Security Research and Analysis
– Exercise: Mobile Device Scenario-Based Troubleshooting
– Exercise: Mobile Device Scenario-Based Learning
– Exercise: Mobile OS Current Event and Trends Capstone
– Module Quiz
– Checkpoint Review

Lesson 12: Using Data Security
12.1 Data Backup and Recovery
– Backup Operations
– Backup Methods
– Lab: Back Up the Computer
– Backup Media Requirements
– Backup Testing and Recovery Best Practices
– Lab: Restore Data from File History
– Applied Live Lab: Support Backup and Restore Operations
– Lesson Review

12.2 Data Handling Best Practices
– Regulated Data Classification
– Prohibited Content and Licensing Issues
– Incident Response
– Data Integrity and Preservation
– Data Destruction Methods
– Disposal and Recycling Outsourcing Concepts
– Lesson Review

12.3 Artificial Intelligence
– Application Integration
– Policy

– Limitations
– Private vs. Public
– Lesson Review

12.4 Challenge Live Lab: Resolve Incident Response Tickets

12.5 Additional Resources
– Computer Data Backup
– Data Best Practices
– Exercise: Backup Hands-On Practice
– Exercise: Creating a Data Handling Policy
– Exercise: Hands-On AI Experimentation
– Exercise: Data Backup Scenario-Based Problem-Solving Capstone
– Module Quiz

Lesson 13: Implementing Operational Procedures
13.1 Change and Inventory Management
– Change Requests
– Risk Analysis
– Change Board Approvals
– Implementation and Acceptance
– Asset Management
– Warranty and Licensing
– Lesson Review

13.2 Common Safety and Environmental Procedures
– Compliance with Regulations
– Electrical Safety
– Other Safety Hazard Mitigations
– Environmental Impacts
– Electrostatic Discharge Mitigation
– Building Power Issues and Mitigations
– Materials Handling and Responsible Disposal
– Lab: Install a UPS
– Lesson Review

13.3 Scripting Basics
– Shell Scripts
– Bash Command Syntax
– Basic Script Constructs
– Conditionals
– Windows Scripts
– JavaScript and Python
– Lab: JavaScript
– Use Cases for Scripting
– Scripting Best Practices and Considerations
– Live Lab: Implement a PowerShell Script

- Live Lab: Implement a Bash Script
- Lesson Review

13.4 Additional Resources
- Asset and Change Management

- Basics of Scripting
- Exercise: Creating a Change Management Plan
- Exercise: Environmental Impact Assessment
- Exercise: Research and Compare Scripting Languages

- Exercise: Safety Checklist Creation Capstone
- Module Quiz
- Checkpoint Review

SKILLS AND COMPETENCIES COVERED

Operational Procedures: 21%
Operating Systems: 28%
Software Troubleshooting: 23%
Security: 28%
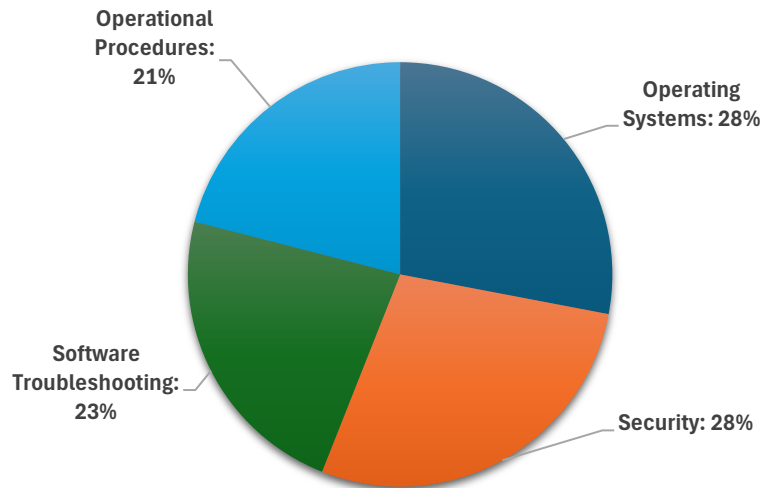
ASSOCIATED CERTIFICATIONS & EXAM

This course will prepare delegates to write the CompTIA Core 2 (220-1202) exam. Successfully passing this exam counts as a credit to attaining the CompTIA A+ Core Series certification.