

Course ID  
**A+ESSENT**

Course Duration  
**3 days**

Course Title  
**CompTIA A+ Certification: IT Essentials Training**

**Related Courses**

- CompTIA A+ Certification - 220-602: IT Technician Training (A+602, 3 days)
- CompTIA A+ Certification - 220-603: Remote Support Technician Training (A+603, 3 days)
- CompTIA A+ Certification - 220-604: Depot Technician Training (A+604, 3 days)
- CompTIA Network + Certification Training (NETWORK+, 5 days)
- Principles of Network Security: CompTIA Security+ and US DoD Directive 8570.1 (NETSEC, 3-4 days)

**Aimed At**

Entry level I/T service technicians who are responsible for installing, configuring and troubleshooting personal computer hardware and software.

**Group Size**

5-15

**Prerequisites**

- General familiarity with personal computers.
- Some I/T support work experience.

**Course in a Nutshell**

This course, designed to meet the requirements of the CompTIA A+ Essentials examination, will ensure that you have the right skills for your work as a computer support professional. The Essentials examination is one of the two required for the A+ certification. CompTIA A+ is an internationally recognized vendor-neutral certification for validating the skills needed by support personnel. It is recognized by major hardware and software vendors, distributors, and resellers.

In this course, you will acquire the basic knowledge and skills necessary to work with personal computer hardware and operating systems. You will learn PC building, installation, configuration, upgrades, optimization, troubleshooting, repair, preventive maintenance, and basic networking. We will also discuss the soft skills requirements of the A+ curriculum, including security, safety, environmental issues, communication, and professionalism.

**Customize It!**

Customize this course to your specific background and job requirements at little-to-no additional cost. We'll tailor the topics included in the course, the emphasis given to each topic, the pace of coverage, and the choice of hands-on exercises to suit your needs. If you have an interest in a particular area, let us know, so we can be sure to address it.

For those who need a boot camp in IT support basics, networking, and network

security, a combined course that consists of pertinent material from our CompTIA A+, Network+, and Security+ course series is also available.

### **Learn How To**

- Identify the basic components of a personal computer and select an appropriate troubleshooting methodology
- Select an appropriate client operating system
- Manage files and folders in Windows
- Describe and troubleshoot computer power supplies
- Identify and troubleshoot CPUs and motherboards
- Upgrade and troubleshoot a computer BIOS
- Compare and troubleshoot computer memory
- Install PCI and video buses
- Install and troubleshoot expansion cards
- Identify and troubleshoot ports, connectors and cables
- Install, maintain, and troubleshoot data storage devices
- Install and troubleshoot video and multimedia devices
- Install and troubleshoot printers
- Identify, maintain, and troubleshoot portable computers and devices
- Monitor and manage Windows client operating systems
- Connect computers
- Network computers
- Secure computers and data
- Employ safe work practices while working on personal computers
- Troubleshoot and maintain personal computers
- Employ professionalism and good communication while working on personal computers
- Install and upgrade Windows client operating systems

### **Course Outline**

- Getting Started with PC Hardware Support
  - Computer components overview
  - Hardware, software and firmware
  - Troubleshooting models
- Operating Systems
  - Operating system fundamentals
  - Directory and file management
- Electricity and Power Systems
  - Electricity and electronics
  - Static electricity
  - Power supplies
  - Power supply troubleshooting
- CPUs and Motherboards
  - Central Processing Units (CPUs)

- Packaging, slots and cooling techniques
- Motherboards and system cases
- Motherboard troubleshooting
- Basic Input/Output System
  - BIOS and CMOS
  - The POST process
  - Firmware updates
  - BIOS and POST troubleshooting
- Memory Systems
  - Memory
  - Memory packaging
  - Memory troubleshooting
- Bus Structures
  - Buses
  - Host system interaction
  - The PCI bus
  - Video buses
- Expansion Cards
  - Drive adapters
  - Video cards
  - Sound cards
  - Internal modems
  - Expansion card troubleshooting
- Ports, Connectors and Cables
  - Serial and parallel ports, cables and connectors
  - Keyboards, mice and pointing devices
  - USB ports, cables and connectors
  - FireWire ports, cables and connectors
  - Infrared and Bluetooth wireless ports
  - Port, cable and connector troubleshooting
- Data Storage Devices
  - Hard drives
  - Optical drives
  - Removable storage devices
  - Storage device troubleshooting
- Video and Multimedia Input/Output Devices
  - Cathode ray terminals
  - LCDs and other video technologies
  - Sound input and output devices
  - Scanners and cameras
- Printers
  - Dot matrix printers
  - Inkjet and related printer technologies
  - Laser printers

- Other types of printers
- Portable Computers and Devices
  - Notebook computers
  - Handheld computers
- Monitoring and Management
  - E Windows boot process
  - System monitoring
  - System troubleshooting
  - System management
- Connecting Computers
  - Networking concepts
  - Wired network connections
  - Wireless network connections
  - Network architectures
- Networking Computers
  - Network communications
  - Addressing
  - Internet connections
  - Network installation
  - Network troubleshooting
- Security
  - Operating system security
  - Security hardware
  - The human aspects of security
- Safety
  - Safety and hazards
  - Safe work practices
  - Disposing of computer equipment
- Troubleshooting and Maintaining a PC
  - Tools and software
  - Preventive hardware maintenance
- Professionalism and Communication
  - Professionalism and customer satisfaction
  - Problem and resolution tracking
- Windows Installation and Upgrades
  - Installation
  - Upgrades
- Wrap-up: Course Recap, Q/A, and Evaluations

**How You Will  
Learn**

- An experienced I/T professional will teach this class in workshop (interactive lecture/lab) format.
- Hands-on exercises will help you understand each topic and make a bridge from theory to application.
- The instructor will offer real-life examples, applications, and case studies to enrich the class and drive home the essential points.
- You'll learn dos and don'ts, both the tricks of the trade as well as the hidden pitfalls.
- The participant handbooks will provide you with a structure to which you can add information and insight provided in real-time, turning it into a valuable reference resource you can take back to your job.

*Revised*

*Jan. 30, 2007*