

Course overview

CompTIA A+ Certification Essentials Support Skills

(G166eng)



Overview and objectives

This 5-day practical "hands-on" course is the essential foundation for newcomers to PC support. It provides students with the necessary training to ensure proficiency in PC installation and troubleshooting skills. The course has been developed to produce competent PC support engineers who are capable of taking and passing CompTIA's A+ Certification exams or other similar qualifications.

Students will learn the fundamental principles of supporting desktop and portable computers and operating systems plus network and print devices and applications.

On course completion, students will be able to:

- Identify types and characteristics of PC components, including motherboard, CPU, memory, and storage, input, and output devices.
- Install and configure peripheral devices.
- Identify types and characteristics of portable computers.
- Install and configure Microsoft Windows 2000 and Microsoft Windows XP.
- Perform basic PC maintenance and troubleshooting.
- Understand fundamental principles of securing IT systems and working safely.
- Communicate effectively with customers.
- Install and configure print and imaging devices.
- Understand fundamental principles of implementing LANs and internet access.

Certification track

This course will prepare students for the 220-601 CompTIA A+ Certification Essentials exam for the objectives released in September 2006 and has been approved under the CompTIA Authorized Quality Curriculum program. A+ Certification is internationally endorsed and recognized as the only benchmark vendor-neutral qualification for PC support and troubleshooting. Indeed, A+ Certification is a prerequisite qualification for employment (and is endorsed) by many leading computer manufacturers and vendors on a global basis.



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Target audience

This course is intended for students wishing to qualify with CompTIA A+ Certification for PC Support professionals. It is also suitable for students wanting to improve their skills in PC support and administration. By completing this course, students will also be assisted with entry into a career in ICT. This course will particularly benefit students pursuing a career in supporting desktop personal computer users, in job roles such as Support Engineer, Maintenance Engineer, Desktop Engineer, Computer Administrator, or PC Support Analyst. Study of the course can also help to prepare for other, similar technical support qualifications and act as groundwork for more advanced training, including CompTIA Network+ or CompTIA Server+, CCNA, and MCSE / MCSA.

Course prerequisites

Students should have successfully completed the gtslearning course "PC Fundamentals" or have equivalent experience of using a PC, Windows and browsing the Web. The following key skills are recommended:

- Use a keyboard and mouse.
- Recognize the main components of a PC (such as case, monitor, mouse, and keyboard) and different data media such as floppy disks or CD-ROMs.
- Start the computer and navigate the Desktop.
- Use Windows Explorer to create directories and subdirectories; and move, copy, or rename files and directories.
- Use Internet Explorer to view websites.

Course contents

The course consists of two volumes, with a study volume, containing indexed notes and review questions, and a companion volume, containing exam objectives mapping, exam information, practical labs, answers to review questions, and a comprehensive glossary. The course also comes with two online practice exams.

An instructor edition of the course is available with margin notes and tips for the trainer. Access to course resources on gtslearning's trainer portal (www.gtstrainer.com) is also available, subject to meeting minimum order requirements. gtstrainer hosts setup guides and data, PowerPoint slides, timetables, and extra exam information.

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Module 1 - PC Components

- **The Visible PC** • Introduction to the PC • Key Functions of a PC • The System Case • I/O Ports and Cables • PS2 Ports • Parallel Ports • Serial Ports • USB Ports • SCSI • IEEE 1394 (Firewire) • Modem and Network Ports • Audio Ports • Joystick/MIDI Ports • Adding and Removing Peripherals
- **Motherboards** • Motherboard Layout • System Clock • Bus Architecture • Motherboard Components • Expansion Bus and Adapter Cards • Motherboard Form Factors • Power Supply Unit (PSU)
- **Processors** • Central Processing Unit (CPU) • Processor Terminology • Multitasking, Multiprocessing, and Multithreading • Intel Processors • AMD Processors • Processor Sockets and Chipsets
- **Memory** • Memory Types • Memory Packaging • Memory Characteristics
- **Storage Devices** • Storage Devices • Hard Drives • Installing a Storage Device • Preparing a Hard Disk • Floppy Drives • Optical Disk Storage • Flash Memory • Tape Drives
- **Peripheral Devices** • PC Display Screens • Graphics Adapter • Installing a Graphics Adapter and Display • TV Tuners • Sound Cards • I/O and Communications Adapters

Module 2 - Portable Computers

- **Portable Computers** • Portable and Desktop Computers • Notebooks • Tablet PC • Personal Digital Assistants (PDAs)

Module 3 - Operating Systems

- **Features of Operating Systems** • Microsoft Operating Systems • Overview of Windows 2000 • Overview of Windows XP • Workgroups and Domains • UNIX and Linux • Apple Mac OS X • Novell NetWare
- **Installing and Upgrading Windows** • Overview of OS Installations • Preparing the Hard Disk • Domain or Workgroup Selection • Installation Methods • Setup Failure and Recovery • Upgrading the OS • Options for Deploying Windows
- **The Windows Boot Process** • Windows Boot Files • Initial Startup Process • The BOOT.INI File
- **Managing Windows** • Features of the Desktop • Windows Administrative Tools • Changing System Settings • Configuring Hardware • Optimizing Windows Performance Options • Screen Savers and Power Management • Managing Software • Managing Services
- **Windows Storage Management** • Disk Management • Navigating Windows • Working with Folders • Working with Files • Searching For Files • The Recycle Bin • My Network Places

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Module 4 - PC Support

- **Hardware Maintenance and Troubleshooting** • Troubleshooting Techniques • Troubleshooting Power Problems • Troubleshooting POST • Troubleshooting Internal Devices • Troubleshooting Peripherals • Notebook Troubleshooting • Preventative Maintenance
- **Troubleshooting the Operating System** • Error Categories • Advanced Startup Options • Diagnosing Problems • Troubleshooting Applications • Remote Features
- **Security** • Security Fundamentals • Windows Security Overview • Internet Security • Malware • Data Security
- **Safety and Environmental Issues** • Health and Safety • Static Electricity and ESD • Materials Handling • Storage of Components for Future Use • Disposal of Consumables and Computer Equipment
- **Professionalism and Communication** • Customer Service Skills • Basic Troubleshooting Approach • Giving Feedback • Communication with a Customer • Professionalism • Handling Customer Complaints

Module 5 - Printers and Scanners

- **Printers and Scanners** • The Print Process • Installing and Configuring a Printer • Operating and Troubleshooting Printers • Scanners • Installing and Using a Scanner

Module 6 - Networking

- **Network Concepts** • What is a Network? • Network Components • Network Topologies • The OSI Model • IEEE 802 Standards • Network Devices • Network Transport Protocols
- **Implementing a LAN** • Server and Peer-to-Peer Networks • Network Components • Implementing a LAN • Network Troubleshooting Basics
- **WAN and Internet Connectivity** • Wide Area Networks and the Internet • Accessing the Internet • Cellular Devices • Voice-over-IP