

CompTIA A+ Certification Training

320 hours

Course Overview/Description

This entry-level program is designed to prepare students for the CompTIA A+ Certification with IT Technician designation. This credential validates the latest skills needed by today's Computer Support Professionals and is the skills benchmark that provides an entry point into an IT career. It is highly recognized for excellence in computer hardware and operating systems covering skills such as installing, upgrading, building, repairing, configuring, troubleshooting, optimizing, diagnosing, and preventative maintenance, with additional elements of professionalism and communication and security.

This program is comprised of two modules. The CompTIA A+ Certification: Essentials module provides students with the knowledge of basic hardware, operating systems, and elements of security and soft skills.

The CompTIA A+ Certification: IT Technician module is appropriate for those who work, or plan to work, in a mobile or corporate technical environment, or hold a position characterized by a high-level of in-person client interaction.

Upon successful completion of this program, the student should be prepared to take CompTIA A+ Certification: Essentials (Exam 220-601) and CompTIA A+ Certification: IT Technician (Exam 220-602).

In order to complete the optional hands-on exercises/labs you will need an additional computer. The requirements for the extra computer/s are minimal and can be found in **PC Requirements/Materials Included** link on the left side of your screen.

The original course length is 6 months. If you need more time, you may request a 4-month extension at no charge. If you require another extension beyond the free 4-month extension, you may request a 6-month extension at a charge of \$75.00 U.S.. These extensions will be consecutive (one after the other), so if you step away from the course and come back wanting to resume you may do so after paying a licensing fee. This fee may change from one year to the next. Please do not request an extension until you have almost run out of time (determined by end date). This way you may step away from the course for awhile if needed, and upon returning you may catch up, use the free extension, or pay for an additional license in order to complete the course.

Course Objectives

CompTIA A+ Certification: Essentials

CompTIA A+ Certification: Essentials course lays out the foundation for entry-level IT Professionals. This course is designed to prepare students for the CompTIA A+ Essentials certification exam. Upon completion of this course, students gain skills and knowledge necessary to perform tasks on computer

hardware and operating systems, such as installing, building, upgrading, repairing, configuring, troubleshooting, optimizing, diagnosing and preventative maintenance with additional elements of soft skills and security.

CompTIA A+ Certification: IT Technician

The CompTIA A+ Certification: IT Technician course represents the second course towards the CompTIA A+ Certification with IT Technician designation. This course is designed to prepare students for the CompTIA A+ IT Technician designation exam. Upon completion of this course students will gain skills and knowledge in hardware, operating system, network, security and customer support skills expected of an entry-level IT technician who will have a high-level of interaction with clients. Students will also gain skills and knowledge of the integral components of computer systems including the CPU, memory, disks, power supplies and expansion cards. Common devices found in business settings such as laptops, PDAs, printers and monitors are also featured. A major section of this course is dedicated towards managing, maintaining and troubleshooting Windows 2000 and Windows XP operating systems.

Upon successful completion of this course, the student should be prepared to take CompTIA A+ Certification: Essentials (Exam 220-601) and CompTIA A+ Certification: IT Technician (Exam 220-602).

Course Outline

- I. CompTIA™ A+ Certification: Essentials
 - A. Introduction
 - B. Getting started with PC hardware support
 - C. Operating systems
 - D. Electricity and power systems
 - E. CPUs and motherboards
 - F. Basic Input/Output System
 - G. Memory systems
 - H. Bus structures
 - I. Expansion cards
 - J. Ports, connectors, and cables
 - K. Data storage devices
 - L. Video and multimedia input/output devices
 - M. Printers
 - N. Portable computers and devices
 - O. Monitoring and management
 - P. Connecting computers
 - Q. Networking computers
 - R. Security
 - S. Safety
 - T. Troubleshooting and maintaining a PC

- U. Professionalism and communication
 - V. Windows installation and upgrades
 - W. Certification exam objectives map
 - X. CompTIA™ A+ acronyms
 - Y. Course Summary
- II. CompTIA™ A+ Certification: IT Technician
- A. introduction
 - B. Introduction
 - C. Electricity and power systems
 - D. CPUs and motherboards
 - E. Memory systems
 - F. Expansion cards
 - G. Data storage devices
 - H. Ports, connectors, and cables
 - I. Printers and scanners
 - J. Display devices
 - K. Portable computers and devices
 - L. Operating system management
 - M. OS maintenance and troubleshooting
 - N. Networking
 - O. Security
 - P. Maintaining the PC environment
 - Q. Professionalism and communication
 - R. Certification exam objectives map
 - S. Binary, octal, and hexadecimal numbering
 - T. Reference tables
 - U. CompTIA™ A+ acronyms
 - V. Course summary

Prerequisites/Audience

Students should have a basic knowledge of computer hardware and operating systems.

This course is designed for individuals interested in pursuing a career in Information Technology, specifically related to PC technology. This course is also designed for individuals wishing to obtain a CompTIA A+ Certification with IT Technician designation.

PC Requirements/Materials Included

This course is compatible with Windows Vista Operating System.

It is Highly Recommended that students have a high speed internet connection (DSL or Cable). Software Programs are only compatible with Microsoft Operating System and Internet Explorer.

PC Requirements for the Courseware and Optional Hands-on Activities

Below are the minimum requirements for the Primary Computer System, Secondary Student Computer System, and Third Computer System. Please note that certain hands-on and independent practice activities may only require the Primary Computer System. For others you will be required to have a Secondary Student Computer System. A Third Computer System and a Network environment will be required to complete other optional hands-on activities.

In the course manual, that accompanies the courseware, there are activities that require students to assemble a computer and install hardware and software. In order to complete these optional hands on activities and other independent practice activities, students will require access to at least 2 computer systems...one being the Primary Computer System, and the other being the Secondary Student Computer System. The Secondary Shared Computer System, if you have access to a third computer, can be used as a break/fix computer to complete some of the optional labs and or hands-on activities (e.g. hardware installation and configuration).

Primary Computer System: This system is used to access the online lectures and complete certain optional hands-on and independent practices activities.

The following components are required for the student to complete the online portion of the course:

- Computer running Windows XP, Windows 2000 (Pro or Server) or Windows NT Server
- Internet Explorer 6.0 or higher
- Access to the Internet - high speed preferred
- Headphones or speakers
- Sound Card

Secondary Student Computer System: It is recommended that this system is used to perform hands-on and independent practice activities that are software installation and configuration in nature. It is recommended that hardware installation and configuration activities should not be performed on this system, as these activities may change the system's profile and affect the student's ability to complete other activities.

Secondary Student Computer System Hardware Requirements

- Intel Pentium II or Intel-compatible processor, running at 400 MHz or higher (Pentium III strongly recommended)
- At least 256 MB RAM
- SVGA display adapter, supporting at least 256 colors and 800×600 resolution
- Keyboard and mouse
- 10/100 Mb Network card (NIC), plus associated cabling to attach to a network (RJ-45 connectors)
- 6 GB hard-disk space
- 1.44 MB 3.5" floppy disk drive
- CD-ROM drive supported by Windows XP (or 2000)—check the Hardware Compatibility List (HCL)
- Modem (internal) and drivers

Secondary Student Computer System Software Requirements You will need to install one of the following software on the Secondary Student Computer System. Installation instructions are provided in the section titled "Secondary Student Computer System setup instructions."

- Windows XP Professional or Windows 2000 Professional

Note: You will need to have the installation CDs for each of these operating systems. In addition, you will need to install the following software:

- Latest Service Packs
- Internet Explorer 6.0 or higher
- WinZip evaluation copy (www.winzip.com)
- Adobe Acrobat Reader (www.adobe.com/products/acrobat)
- Sound card drivers
- MIDI recording software
- DVD decoder software

Third Computer System: It is recommended that this system be used to perform hardware installation and configuration related activities.

Third Computer System hardware requirements

- Intel Pentium II or Intel-compatible processor, running at 400 MHz or higher (Pentium III strongly recommended)
- At least 256 MB RAM
- SVGA display adapter, supporting at least 256 colors and 800×600 resolution
- Keyboard and mouse
- 10/100 Mb Network card (NIC), plus associated cabling to attach to a network (RJ-45 connectors)
- Optional
- 2 GB hard-disk space
- 1.44 MB 3.5" floppy disk drive
- CD-ROM drive supported by Windows XP (or 2000)—check the Hardware Compatibility List (HCL)

In addition, you need one of each of the following items for your Secondary Shared Computer System:

- 3.5" floppy drive and cables—if one is already installed in the computer, students may remove and reinstall that drive
- AGP video card
- CD-ROM copies of Windows 2000 Professional and Windows XP Professional without the Service Pack slip-streamed
- Computer cleaning materials
 - CD/DVD cleaning kits

- Compressed air canister
- Computer anti-static vacuum cleaner
- Lint free cloths
- Small paintbrushes
- Tweezers
- Computer toolkit (including non-magnetic Phillips-head screwdriver)
- Drives (hard drives, CD-ROM drive, floppy drive, ZIP drive, DVD drive), controller cards, related media, and cables
- Expansion cards (sound, modem and/or network), some with DIP switches or jumpers
- Grounding mat
- Grounding strap
- IDE hard drive, cables, and controller card—in addition to any already installed in the computer
- Ink-jet printers, cables, and power cords
- Microphone
- Mini-PCI adapter
- Multimeter
- Network Interface Card (NIC) card—if one is already installed in the computer, students may remove and reinstall that card
- Pre-recorded audio/music CDs
- RAM chip
- Screwdrivers—assorted
- SCSI
 - Cables
 - Controller with device drivers and documentation
 - Hard drive (internal)
 - Terminators
- Sound Blaster-compatible sound card (internal) with drivers
- Speakers
- USB devices, adapter and cables
- Working and damaged CDs (audio, data, program, burned)

You need a notebook computer with documentation for each student group. The notebook computer should have:

- A power cord
- Functioning battery
- Extra PC card
- A default installation of Windows XP Professional installed

You also need the following items for the notebook computer:

- Docking station and/or port replicator for the notebook
- External monitor, keyboard, and mouse for the notebook

- 1394 (Firewire) devices, adapter and cables
- Digital camera with media card, and associated cables and power cord
- Fingerprint scanner
- FireWire external drive
- FM radio
- Infrared devices
- Laser printer, cables, and power cords
- LCD flat panel monitor with DVI connection
- Multimedia devices using the following connectors:
 - COAX
 - 1/8"
 - MIDI
 - RCA
 - S/PDIF
 - S-Video
- Notebook packing materials
- PDA or handheld computer including cables and/or cradle for connecting to the PC and software for synchronizing with the computer
- Radio wireless networking devices
- Scanner
- Smart Card reader
- Type I and/or II PC Card
- USB flash drive
- USB hub
- Video card for configuring dual monitors—in addition to one already installed in the computer
- Wireless access router or hub
- Wireless devices
 - Bluetooth
 - Infrared
- Wireless network adapter cards
- Non-working versions of any of the above equipment that can be used for the troubleshooting activities
- Working and damaged DVDs (video, data, program, burned)
- Hygrometer Instrument to measure humidity (mechanical or electronic)

Secondary Shared Computer System Software Requirements

The following software will need to be installed:

- Internet Explorer 6.0
- Adobe Acrobat Reader (www.adobe.com/products/acrobat)
- WinZip evaluation copy (www.winzip.com)
- Sound card drivers
- Modem drivers
- Video drivers for installed video card



The materials included with this course are:

- A+ Course manual
- Access to an online IT Library

Instructor Bio

Chris Lobban brings his industry experience with an extensive assortment of hardware and software solutions. Before starting at Academy of Learning he had worked both in a Help Desk environment and as a Quality Assurance Analyst, where he had to deal with a wide array of different hardware requirements, operating systems, and computer programs every day. This broad experience base, added to his formal training as a Computer Networking and Technical Support Specialist from Seneca College, gives him the training and experience needed to provide support to his students. Chris has also certified his experience by earning the CompTIA A+ IT Technician, Network+, Server+ and Security+ credentials, as well as the Microsoft MCSE (Windows Server 2003), MCSA (Windows Server 2003) and MCDST (Windows XP) credentials.