

# **CompTIA A+**

## **220-901 & 220-902**

### **Course Syllabus**

#### **50.5 Hours**

### **Course Description**

CompTIA A+ is an entry-level certification that is often required to begin an IT career. It represents the knowledge an IT professional has acquired in roughly one year of hands-on work in the field. This course focuses on establishing best practices in troubleshooting, networking, and security across a variety of devices. The course gives students the knowledge to properly diagnose, resolve, and document an assortment of hardware and software issues through proper troubleshooting techniques. A solid foundation of entry-level knowledge is important to help build towards more specialized learning later in your career. This course covers the objectives for the **CompTIA A+** certification exams:

- **220-901**
- **AND**
- **220-902**

### **Learning Objectives**

Upon completion of the course, students will understand:

- Motherboards and expansion slots, inner workings of a computer, different kinds of motherboards and how you can expand functionality; firmware functions in a computer, BIOS setup and security utilities, POST process, and built-in configuration options
- Different types and function of RAM, different storage options, how they work, and storage solutions for computer; different types of hard drives and optical drives, and how to manage storage
- Basics of CPUs, how they work, different factors when installing and configuring a CPU; different types of connectors and cables that can be used for a computer to plug in peripheral devices; different hardware that can be connected to a computer, and features and functions they have
- Different display technology, configuration options for them, and how to troubleshoot any problems; different requirements and options available for different types of computers
- Different types of networks and network devices, basic network functionality, network protocols; setting up an IP addressing scheme using either IPv4 or IPv6; benefits of wireless networks and how to mitigate some of the related drawbacks
- Installing and configuring a broadband router in a small or home office; connecting to Internet, basic troubleshooting methodology
- Portable computers and mobile devices, and special hardware and considerations; computer hardware that is specialized for a portable computer; and troubleshooting peripheral and mobile devices
- Different types of printers, print drivers, and connection options when installing a new printer; printer installation and maintenance procedures; basic troubleshooting for printers, common issues and how to solve them
- Different Windows Operating systems and processes used to install them; interaction and personalization of a Windows operating system; Windows tools and utilities to manage a Windows environment; Windows applications and how to manage, troubleshoot, and install them into the operating system
- Installation process of hardware and accompanying software needed to integrate hardware into Windows operating system; storage options available within Windows operating system; different methods and procedures required to join a Windows operating system to an existing network, modify an existing configuration, and troubleshoot issues with networking from an OS perspective
- Monitoring Windows operating system, optimizing performance, and data backup and recovery; operating systems such as Linux and Mac OSX; Linux OS and similarities between Mac OSX and Linux; features available within Mac OSX operating system; Linux operating system landscape

- Commands used within Linux and Mac OSX to administer operating systems at an advanced level; basic overview of mobile operating systems including features, technologies, and troubleshooting methods
- Basic terms and concepts of virtualization; common terms, threats, and mitigation against those threats; features provided by Windows OS for maintaining security of data resources, how to implement and manage those features; troubleshooting and security principles and security practices commonly implemented within an IT infrastructure; troubleshooting PCs, security, mobile OSs, and applications, along with the steps, tools, and solutions to fix them

### **Course Format**

CompTIA A+ is a self-paced, online course delivered through the learning management system Skillsoft. The site to access the coursework is [su.skillport.com](http://su.skillport.com). Login credentials will be provided to you on the cohort launch date. If you do not receive them by the launch date, please check your Spam/Junk folder of your email and/or contact your advisor or O2O program coordinator. Once you have logged into your account, you can locate the coursework by selecting “View My Learning Plan.”

Coursework is delivered through videos, tutorials, and tests. No textbooks are required for the course; however, students are encouraged to utilize additional resources to assist with certification preparation. Resource Guides with lists of supplemental study materials for each certification are available at <http://libguide.getvet.syr.edu/curriculum/>.

### **Course Completion Requirements**

CompTIA A+ coursework is due within 90 days from the assignment date. The course hours listed at the top of the syllabus reflect the time it would take to click through the slides and do not account for taking notes or the end of module tests. You must complete all 21 modules listed within Topic 1 and all 14 modules within Topic 2. Successful completion of a module is marked after you review the lesson videos and score 80% or higher on the end of module tests.

At the beginning of a module, you will be asked to take a pre-test. Scoring 80% or higher on the pre-test signifies competence in the information that will be covered; you will therefore be waived from completing the module. A non-credit certificate of completion will be awarded for successful completion of the coursework.

### **Industry Certification Requirements**

In order for the program to fund your CompTIA A+ certification exams you will need to meet the A+ practice exam requirements. Your advisor or O2O program coordinator will provide you with access to the practice exams as well as completion instructions once you have finished the coursework.

### **Support**

- For technical support, please contact Skillsoft Support at [support.skillsoft.com](http://support.skillsoft.com)
- For course content support, please utilize Skillsoft’s “Ask My Mentor” tool, located in the left-hand Menu within the module course player
- For program support or questions, please contact your advisor or O2O program coordinator

## Course Outline

### **Topic 1: Operating System Fundamentals Exam 220-901**

- 1.1 CompTIA A+ 220-901: Motherboards
- 1.2 CompTIA A+ 220-901: RAM
- 1.3 CompTIA A+ 220-901: Storage Solutions
- 1.4 CompTIA A+ 220-901: BIOS and Startup
- 1.5 CompTIA A+ 220-901: Connectors and Connections
- 1.6 CompTIA A+ 220-901: Peripheral Devices
- 1.7 CompTIA A+ 220-901: CPUs
- 1.8 CompTIA A+ 220-901: Display Devices
- 1.9 CompTIA A+ 220-901: Difference Computer Form Factors
- 1.10 CompTIA A+ 220-901: Introduction to Networking
- 1.11 CompTIA A+ 220-901: Network Protocols and Cabling
- 1.12 CompTIA A+ 220-901: Broadband Routers
- 1.13 CompTIA A+ 220-901: Wireless Networking
- 1.14 CompTIA A+ 220-901: Internet Connections
- 1.15 CompTIA A+ 220-901: Mobile Computing
- 1.16 CompTIA A+ 220-901: Printers
- 1.17 CompTIA A+ 220-901: Portable Computer Hardware
- 1.18 CompTIA A+ 220-901: Printer Maintenance
- 1.19 CompTIA A+ 220-901: Miscellaneous Tools and Connectors
- 1.20 CompTIA A+ 220-901: Troubleshooting Printers
- 1.21 CompTIA A+ 220-901: Troubleshooting Peripheral and Mobile Devices

### **Topic 2: Operating System Fundamentals Exam 220-902**

- 2.1 CompTIA A+ 220-902: Windows Overview and Installation
- 2.2 CompTIA A+ 220-902: Windows Interaction and Personalization
- 2.3 CompTIA A+ 220-902: Windows Utilities and Management
- 2.4 CompTIA A+ 220-902: Windows Applications and Features
- 2.5 CompTIA A+ 220-902: Adding Hardware to Windows and Storage Options
- 2.6 CompTIA A+ 220-902: Networking with the Windows Operating System
- 2.7 CompTIA A+ 220-902: Monitoring the Windows OS and an Introduction to Other Oss

- 2.8 CompTIA A+ 220-902: Mac OSX Features and an Introduction to Linux
- 2.9 CompTIA A+ 220-902: Shell and Terminal Commands for Linux or Mac OSX
- 2.10 CompTIA A+ 220-902: Introduction to Mobile Operating Systems
- 2.11 CompTIA A+ 220-902: Introduction to Virtualization and Basic Security Concepts
- 2.12 CompTIA A+ 220-902: Windows Security Features and Management
- 2.13 CompTIA A+ 220-902: Common Troubleshooting and Security Practices
- 2.14 CompTIA A+ 220-902: A Practical Approach to Troubleshooting
- 2.15 CompTIA A+ 220-902: Safety
- 2.16 CompTIA A+ 220-902: Various Features and Requirements of Microsoft OS