

COMPUTER SUPPORT TECHNICIAN

A+ NETWORK+ SECURITY+ MCP

This certification consists of **four modules**: A+, Network+, Security+, and MCP. Successful completion of this program will provide the student an entry-level credential as a Computer Support Technician. **This series aligns to DoD 8570 (IAT Level II).**
Note: The following modules are not necessarily in the chronological order.

A+

The A+ Certification: Essentials module provides students with the basic knowledge of 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).

WINDOWS XP (MCP)

Windows XP Microsoft Certified Program is designed for individuals who require the skills to successfully implement, administer, and troubleshoot information systems that incorporate Microsoft Windows XP Professional.

NETWORK+

Network+ certification is a valuable credential to help launch or enhance a networking career. This program validates the ability to describe the features and functions of networking components and to install, configure and troubleshoot basic networking hardware, protocols and services.

SECURITY+

The Security+ certification provides IT Technicians with the knowledge and skills necessary to demonstrate a broad knowledge of security concerns and perform day-to-day security functions. Students will learn about IT industry-wide security topics, including communication security, infrastructure security, cryptography, access control, authentication, external attack, and security preventive measures.

COURSE OUTLINE

A+ MODULE

Introduction to Personal Computers -- Identify the Fundamental Principles of using the Personal Computers

1. External Components of PC
2. Internal Components of PC
3. Elements in computer operation

CHAPTER 1: SOFT SKILLS

These skills comprise a set of capabilities that are important to the organizations that employ technical professionals.

1. Troubleshooting Process and Best Practices
2. Human Component Communication and Professionalism

CHAPTER 2: SAFETY AND TOOLS

Students will learn how to protect themselves when working around today's high-voltage electrical environments and how the proper tools can be the difference when handling complex pc issue.

1. Troubleshooting Process and Best Practices
2. Human Component Communication and Professionalism
3. Preventing Electrostatic Discharge
4. The A+ Tool Bag
5. Preventive Maintenance
6. Software Tools
7. Managing Safety Hazards
8. Techniques and Best Practices

Required Textbooks:

CompTIA A+ 2006

In Depth

Jean Andrews

ISBN:

13:978-1-59863-351-1

MCP: 70-270 Installing, Configuring, and Administering Microsoft Windows XP 2nd Edition

Microsoft Official

Academic Course

ISBN: 978-0-470-06880-9

CompTIA Network+

Todd Lammle

ISBN: 978-0-470-42747-7

CompTIA Security+ Second Edition

Mike Meyers

ISBN: 978-0-07-160125-2

CHAPTER 3: MOTHERBOARDS

The motherboard is the heart of any personal computer. Students will learn how a motherboard works, how to instantly identify the major components of a motherboard, and how to solve motherboard problems when they occur.

1. Motherboard Overview
2. Bus Architectures
3. Expansion Slots
4. Motherboard I/O and Drive Connections
5. Motherboard Form Factors
6. Installing and Troubleshooting Motherboards

CHAPTER 4: PROCESSOR AND CPUS

The CPU is the center of the personal computer universe. This chapter will help students understand CPU functionalities.

1. Introduction to CPUs
2. CPU Technologies / Sockets
3. History of CPUs
4. Selecting, Installing, and Troubleshooting CPUs

CHAPTER 5: MEMORY:

Memory technology is a mix of form factors, speed ratings, and installation challenges. In this chapter, students will learn exactly how to identify, upgrade, and troubleshoot memory in today's modern personal computers.

1. Overview of Memory
2. Identifying Memory Types
3. Installing and Upgrading Memory
4. Troubleshooting Memory Problems

CHAPTER 6: BIOS AND CMOS

This chapter explains how the BIOS handles the most basic operations of a personal computer and how the CMOS stores all of the important configuration information.

1. BIOS and CMOS Overview
2. CMOS Settings
3. BIOS Troubleshooting and Upgrading

CHAPTER 7: PERSONAL COMPUTER POWER SUPPLY AND CONNECTORS

This chapter covers how to understand, specify, and troubleshoot power problems in any environment. Students will learn the diverse set of ports, connectors, and cables and will be able to recognize the most common ports and connectors and the use and support of each port.

1. Computer Power Overview
2. Installing and Troubleshooting Computer Power
3. Common Computer Ports
4. Computer Cable Types
5. Connectors and Adapters

CHAPTER 8: ADAPTER CARDS AND COOLING SYSTEMS

Students will get an overview of adapter card technology and will learn how to install and troubleshoot a typical adapter card configuration. This chapter will also provide a comprehensive overview of PC cooling and how to easily install and monitor the health of PC cooling systems.

1. Adapter Card Overview
2. Installing and Troubleshooting Adapter Cards
3. Cooling System Overview
4. Cooling Systems Installation and Troubleshooting

CHAPTER 9: INPUT, OUTPUT, AND SYSTEM RESOURCES

Students will learn the most basic operations of personal computers which involve data input, system resources allocation, and results output.

1. Input Devices
2. Installing, Configuring, and Upgrading Video
3. Installing, Configuring, and Upgrading Audio
4. Working with Multimedia Devices

5. System Resources: I/O, IRQ, and DMA

CHAPTER 10: PRINTERS AND SCANNERS

The management of printers and scanners can be a challenging technical hurdle for even the most seasoned computing professional. In this chapter, students will acquire basic knowledge on printers and scanner technologies and will learn the process of selecting, installing, and supporting a printer and scanner.

1. Introduction to Printers and Scanners
2. Printing and Scanning: Components, Consumables, and Interfaces
3. Selecting and Installing Printers and Scanners
4. Optimizing Printer and Scanner Performance
5. Troubleshooting Printers and Scanners
6. Printer and Scanner Preventive Maintenance

CHAPTER 11: LAPTOP AND PORTABLE DEVICES

Laptop and portable devices make up a majority of the mobile computing devices. This chapter will give students the basic knowledge on how to diagnose, troubleshoot, optimize, and upgrade laptop and portable devices.

1. Laptop and Portable Technologies
2. Optimizing and Upgrading Laptop and Portable Devices
3. Diagnosing and Troubleshooting Laptops and Portable Devices
4. Laptops and Portable Devices Preventive Maintenance

WINDOWS XP (MCP) MODULE

CHAPTER 1: INSTALLING WINDOWS XP PROFESSIONAL

Students will learn how to prepare for and perform an installation of Windows XP Professional. This chapter also describes how to automate an installation of Windows XP Professional, how to use an image to install Windows XP Professional, and how to use Security Center to monitor system security.

CHAPTER 2: ADDING HARDWARE TO WINDOWS XP PROFESSIONAL CLIENTS

Students will learn the tasks needed to add a new hardware to computer systems, update a driver, or modify hardware configuration, as well as how to disable drivers and uninstall hardware.

CHAPTER 3: RESOLVING BOOT PROCESS ISSUES

This chapter covers the boot process and the tools and techniques that can be used to identify and resolve startup issues.

CHAPTER 4: CONFIGURING THE DESKTOP ENVIRONMENT

This chapter introduces configuration and customization settings for user desktops. In addition, it explains how to use profiles to implement and enforce desktop customization policies, how to use Remote Administration, and how to use Remote Assistance to respond to requests for help.

CHAPTER 5: CONFIGURING INTERNET EXPLORER AND SUPPORTING APPLICATIONS

This chapter illustrates how to configure security and connection settings for Internet Explorer. It also explains how to use the Internet Explorer Administration kit and Group Policy to customize and deploy Internet settings. This will also cover how to use add/remove programs filtering, configure program compatibility settings, and use programs to gather application troubleshooting information.

CHAPTER 6: CONFIGURING WINDOWS XP TO OPERATE IN A MICROSOFT NETWORK

Explains how to create and configure user accounts, how to configure local security, and how to configure Windows Firewall. Also covers how to configure computers running Windows XP Professional to operate in a Windows workgroup or domain.

CHAPTER 7: CONFIGURING WINDOWS XP PROFESSIONAL FOR MOBILE COMPUTING

Explains how to help mobile users work more effectively by controlling the power usage of their computers. The chapter also explains how to make files, folders, and Web pages available offline.

NETWORK+ MODULE

CHAPTER 1: INTRODUCTION TO NETWORKING

Provides an overview of networking technologies and introduces the students to the concepts of topologies, cabling, bandwidth, duplex, addressing and protocols.

CHAPTER 2: NETWORK CABLING

Students will learn the importance of plenum-rated cable, explore the differences between copper and fiber, and examine different network cabling types such as Ethernet CAT6 and 5E, USB, and FireWire. We'll also examine the most common network connector types and discuss some troubleshooting methods that can be used to keep the network cabling working perfectly.

CHAPTER 3: NETWORK TOPOLOGIES

We will discuss the differences in Ethernet, WAN, and Token Ring topologies, and learn about the differences in client/server, peer to peer, and Windows Domain-based technologies. We'll also take a tour through the numerous wired and wireless technologies, including ISDN, DSL, infrared, Bluetooth, and mobile wireless networks.

CHAPTER 4: INSTALLING AND CONFIGURING NETWORKS

This chapter covers how to setup a wired and wireless adapter in Windows XP and how the protocols and network clients are configured.

CHAPTER 5: USING THE NETWORK

Students will learn how to take advantage of network resources and how to use Windows services to help manage the network resources.

CHAPTER 6: TROUBLESHOOTING NETWORK CONNECTIONS

Exhibits commonly used command line utilities such as IPCONFIG, NSLOOKUP, PING, TRACERT, PATHPING, NBTSTAT, and NETSTAT and provide some best practices for troubleshooting network interfaces, protocols, and firewalls.

SECURITY+ MODULE

CHAPTER 1: SECURITY FUNDAMENTALS

This covers some of the basic fundamentals of security such as authentication technologies, file system security, and social engineering.

CHAPTER 2: WIRELESS SECURITY

Discussion on wireless encryption types and aspects of access point security that include MAC filtering, SSID management, IP addressing, and firmware

CHAPTER 3: SECURING DATA

Provides some useful best practices for securing data through such methods as access controls, event logging, encryption, password management, and incident reporting

CHAPTER 4: INSTALLING AND CONFIGURING SECURITY SYSTEMS

Students will learn how to secure the BIOS, use smart cards, audit the system through event logs, and how NTFS can make the system more secure.

CHAPTER 5: TROUBLESHOOTING SECURITY SYSTEMS

Discussion on some troubleshooting techniques for BIOS security, firewall issues, wireless clients, and encryption

CHAPTER 6: SECURITY PREVENTIVE MAINTENANCE

Learn the importance of patching systems and training the user community. Furthermore, students will learn about social engineering and discover ways to address social engineering situations.