

COURSE SYLLABUS:



A+ COMPREHENSIVE



Course Details:

Course Code: IT-2012

Course Title: A+ Comprehensive

Course Hours: 96 (6 Weeks)

Course Prerequisites: None

Method of Delivery: Online

Type of Instruction:

This course is delivered via Remote Mentored Learning (RML). Students view video-based instruction and access course materials from anywhere with a high-speed internet connection and have access to a team of Student Success Specialists, Advisors, and Coordinators who provide ongoing support throughout the course. This course is designed to be completed within a prescribed amount of time, with responsibilities for each course thoroughly outlined to pace the program effectively. Students learn through a variety of media, including video lecture, animations, simulations, games and activities, and more. Students are engaged in skill-building labs and real-world exercises designed to translate what is learned into critical skill-building and preparation for entering a new career. This multi-sensory learning method allows the student to control their learning schedule, the content covered, and the pace of the training while receiving personalized support, guidance, and motivation from a dedicated Student Success team.

Method of Evaluation and Grading:

This MedCerts course is considered PASS/FAIL. At the end of each chapter (lesson), students must pass a mandatory review quiz to proceed to the next chapter, with a final exam at the end of the course. Quiz and final exam grades are available immediately after completion of the quiz/exam. Each may be re-taken until a satisfactory score is achieved. This is to ensure that the student is more easily able to identify difficult/challenging areas where improvement may be needed, re-focus efforts on these areas, and then re-assess for mastery of content. To receive a PASS grade for the course, students must view all video chapters as assigned, access all required activities within the Learning Management System (LMS), and pass each chapter review quiz and the final exam with a minimum score of 80%.

Offline Supplements, Instruction & Review:

This course includes additional learning materials provided as a supplement the core training components. While students are not required to read/review or submit completed activities or assignments that are provided within these supplements, MedCerts strongly encourages students to utilize these additional resources as they will allow for a more comprehensive learning experience and will increase the likelihood of subject matter retention, and better prepare students for certification success.

Instructional Content, Text, and Training Materials:

A+ Comprehensive (TotalSEM)

Recorded Video-Based Lecture/Instruction

Operating System and Application Training Demonstrations (TotalSEM)

Online Lab/Simulation

Interactive Graphical Windows Exercises (TotalSEM)

Online Lab/Simulation

Interactive Command-Line Windows Exercises (TotalSEM)

Online Lab/Simulation

Interactive Configuration and Identification Exercises (TotalSEM)

Online Lab/Simulation

CompTIA A+ Certification All-in-One Exam Guide, Ninth Edition (Mike Myers) MedCerts

9th Edition Textbook – Exams 220-901 & 220-902

220-901 A+ Exam 1 Certification Study Package (Kaplan IT Training)

220-902 A+ Exam 2 Certification Study Package (Kaplan IT Training)

Course Objectives:

- Understand the fundamentals of computer technology, networking, and IT security
- Understand operating system (OS) functionality and troubleshooting methodology
- Identify hardware, peripheral, networking, and security components
- Know how to perform proper computer safety procedures and best practices
- Install, configure, upgrade and maintain PC workstations, the Windows OS, and SOHO networks

Course Description:

A+ Comprehensive is a complete and thorough review of all A+ learning objectives. In this module, students receive a blended learning approach that combines Security, Networking, Operating Systems, IT Operations, Troubleshooting, and Technical Support into one singular course. Students gain the necessary competencies of an entry-level IT professional. This course provides training focused on the fundamentals of computer technology, networking and security, as well as the communication skills and professionalism now required of all entry-level IT professionals. This course focusses on scenarios in which trouble-shooting and tools must be utilized to resolve problems. Students gain critical hands-on experience through a comprehensive series of

Performance Based Exam Prep Simulations. These simulations are a mixture of Operating System and Application Training Demonstrations, Interactive Graphic Windows Exercises, Interactive Command-Line Windows Exercises, and Interactive Configuration and Identification Exercises. The simulations are blended into the training, to provide reinforcement of topics, as well as to provide the critical “hands-on” learning experience necessary to gain competency.

Course Outline:

WEEK 1

Course Intro

Introduction

Chapter 1: The Path of the PC Tech

What is the CompTIA A+?

How to Pass the A+ Exams

Chapter 2: Operational Procedures

Professionalism

Communication

Three Threat to Your PC

Physical Safety

Equipment Safety

Troubleshooting Theory

Chapter 3: The Visible Computer

How Computers Work

Primary PC Components

External Connections

Inside the PC

Touring Windows Vista

Touring Windows 7 Part 1

Touring Windows 7 Part 2

Touring Windows 7 Part 3

Touring Windows 8

Touring Windows 10

Touring OS X

Touring Ubuntu Linux

Chapter 4: Microprocessors

What is a CPU?

CPU Speeds and Cores

CPU Caches

32-bit vs. 64-bit processing

CPU Extensions

CPU Sockets

Installing a CPU

Cooling Your PC

Liquid Cooling

Chapter 5: RAM

RAM: Sticks and Speeds

RAM Capacity

Other Types of RAM

Installing RAM

Troubleshooting RAM

Virtual Memory

WEEK 2

Chapter 6: BIOS

What is the BIOS?

POST

System Setup

Troubleshooting BIOS

Chapter 7: Motherboards

Form Factors

ATX and ITX

Chipsets

The Expansion Bus

Touring the Motherboard

Installing a Motherboard

Chapter 8: Power Supplies

Electricity Basics

The Power Supply

Niche Power Supplies and Features

Choosing a Power Supply

Power Protection

Troubleshooting Power Supplies

Chapter 9: Hard Drive Technologies

Hard Drives

Solid State Drives

Hard Drive Overview

RAID

Hardware RAID

Setting the Boot Order

Chapter 10: Implementing Hard Drives

Understanding Partitioning

- Basic Partitioning
- Dynamic Disks
- Decimal and Binary Prefixes
- File Systems
- Implementing RAID
- Storage Spaces
- Hard Drive Troubleshooting

WEEK 3

Chapter 11: Essential Peripherals

- CD Media
- DVD Media
- Blu-ray Media
- Universal Serial Bus
- USB
- Configuring USB
- Flash Memory Overview
- Firewire and Other Connections
- Keyboards and Mice
- Other Input Devices
- KVM Switches
- Cameras and Camcorders
- Webcams
- Installing PC Expansion Cards Part 1
- Installing PC Expansion Cards Part 2

Chapter 12: Building a PC

- The Right PC for You
- Media Sources
- Windows Install Options
- Windows Upgrade Paths
- Installing Windows
- Post-Installation Tasks

Chapter 13: Windows Under the Hood

- What is the Registry
- The Boot Process
- Processes
- Dealing with Processes
- Services
- Windows 8 Task Manager

Chapter 14: Users, Groups, and Permissions

- Introduction to Users and Groups

Creating Users in Windows Vista/7
Managing Users in Windows 8/8.1
Sharing Folders and Files

Chapter 15: Maintaining and Optimizing Operating Systems

The Zen of Computer Maintenance
Patch Management
Autostarting Programs in Windows
Meet the MMC
Installing and Uninstalling Programs
Windows System Restore
Windows Backup

WEEK 4

Chapter 16: Working with the Command-Line Interface

Windows Command Line Basics
Working with folders and files
Fancy Copying
Working With Drives
Advanced Windows Command Line
Linux Command Line Basics
Working with Folders and Files in Linux
Linux File Permissions
Miscellaneous Linux Commands

Chapter 17: Troubleshooting Operating Systems

Recovery Console
Windows Recovery Environment
Advanced Startup Options Part 1
Advanced Startup Options Part 2
Boot Problems
Event Viewer and Action Center
Application Troubleshooting
Kernel Panics

Chapter 18: Virtualization

Virtualization Basics
Your First Virtual Machine
Infrastructure as a Service
Platform as a Service
Software as a Service
Cloud Ownership

Chapter 19: Display Technologies

- How Monitors Work
- Plasma and DLP displays
- VGA and DVI
- Other Video Connections
- Graphics Cards
- Projectors
- Using Multiple Monitors
- Troubleshooting Video

Chapter 20: Essentials of Networking

- Introduction to Networking
- Moving Data Over a Network
- Structured Cabling
- Patch Cables
- Fiber Optic and Coaxial Cabling
- Networking Tools

WEEK 5

Chapter 21: Local Area Networking

- Introduction to TCP/IP
- Network IDs and Subnet Mask
- Dynamic IP Addressing
- Special IP addresses
- NAT
- PING and IPconfig
- TCP, UDP, and ICMP
- Port Numbers
- Working with Connections

Chapter 22: Use Net+ CH10 - DNS, Pt 1

- Understanding DNS
- Dealing with DNS
- Windows Naming
- Routers
- Configuring Routers
- Advanced Router Configuration

Chapter 23: Wireless Networking

- Wireless Network Hardware
- Wi-Fi Standards
- Basic WAP Setup
- Wireless Encryption
- Use Net+ CH15 - WPS chapter

Wireless Problem Scenarios
Connecting to a Wi-Fi network
Troubleshoot wireless Connections
Bluetooth

Chapter 24: The Internet

Internet Tiers
Dial-up Connections
Broadband connections
Wireless Internet connections
Internet Applications
Telnet and SSH
HTTP
Internet Options
E-mail
FTP
Remote Desktop Connections
File sharing
Proxy Servers
Troubleshooting Internet Connections

Chapter 25: Portable Computing

Laptop Types
Laptop Expandability
Touring a laptop
Laptop Ports
Proper Laptop Disassembly
Power Management
Troubleshooting Laptops

WEEK 6

Chapter 26: Understanding Mobile Devices

What is a mobile device?
Wired Mobile Connections
Touring Android
Touring iOS
Touring Windows Mobile

Chapter 27: Care and Feeding of Mobile Devices

Cellular Configuration
Wireless Mobile Connections - Part 1
Wireless Mobile Connections - Part 2
Mobile Devices and Email
Synchronization

Securing Android Devices

Securing iOS Devices

Chapter 28: Printers and Multifunction Devices

Printer Technologies

Printer connections

Installing Local Printers

Installing Network Printers

Cloud Printing

Maintaining Impact Printers

Maintaining Inkjet Printers

Maintaining Laser Printers

Troubleshooting Print Jobs

Chapter 29: Securing Computers

Physical Security

Passwords and Authentication

Protecting Against Snoops

Malware

Anti-Malware Applications

Anti-Malware Practices

Hardware Firewalls

Software Firewalls

Data Destruction

Incident Response

Conclusion

Course Recap

Course Final Exam