

A+ Certification - Hardware

(CPMT-2045)

Syllabus

Course: CPMT-2045- PC Hardware Technical Certification 80 hours

Course Description:

A+ Certification is a CompTIA-sponsored testing program that certifies the competency of entry-level (6 months experience) computer service technicians. Major computer hardware and software vendors, distributors, resellers and publications back the program. A+ certification signifies that the certified individual possesses the knowledge and skills essential for a successful entry-level (6 months experience) computer service technician, as defined by experts from companies across the industry. The A+ Training course at Austin Community College is a 128-hour (Two Part) program including lecture, labs, and exam preparation. The course will prepare you for the hardware portion of the A+ Core exam and the elective exams, plus give you valuable hands-on experience with PC technology.

Prerequisite: A desire to learn.

Course Objectives:

At the conclusion of this course, students will have mastery of the following subjects:

1. Installation, Configuration and Upgrading

Knowledge and skills to identify, install, configure, and upgrade microcomputer modules and peripherals, following established basic procedures for system assembly and disassembly of field replaceable modules.

2. Diagnosing and Troubleshooting

Diagnosing and troubleshooting common module problems and system malfunctions. This includes knowledge of the symptoms relating to common problems.

3. Preventive Maintenance

Safety and preventive maintenance including the potential hazards to personnel and equipment when working with lasers, high voltage equipment, ESD, and items that require special disposal procedures that comply with environmental guidelines. knowledge of preventive maintenance products, procedures, environmental hazards, and precautions when working on microcomputer systems.

4. Motherboard/Processors/Memory

Specific terminology, facts, ways and means of dealing with classifications, categories and principles of motherboards, processors, and memory in microcomputer systems.

5. Printers

Basic types of printers, basic concepts, and printer components, how they work, how they print onto a page, paper path, care and service techniques, and common problems.

6. Basic Networking

Basic network concepts and terminology, ability to determine whether a computer is networked, knowledge of procedures for swapping and configuring network interface cards, and knowledge of the ramifications of repairs when a computer is networked. The scope of this topic is specific to hardware issues on the desktop and connecting it to a network.

7. Networks

Network capabilities of Windows and how to connect to networks on the client side, including what the Internet is about, its capabilities, basic concepts relating to Internet access and generic procedures for system setup. The scope of this topic is only what is needed on the desktop side to connect to a network.

Rationale:

Basic PC maintenance is a core skill for many workforce positions.

Evaluation:

Those who participate in class discussions, complete class labs and miss no more than three class meetings will be awarded 8.0 continuing education units. Ultimate evaluation of the student will be their successfully passing the CompTIA A+ examination.

Books required: (Only available at Rio Grande book store)

Michael Meyers, A+ Certification All-in-One Exam Guide, 6th Edition (2006) Osborne McGraw-Hill; ISBN: 0-07-226311-3; Mike Meyers, A+ Guide to Managing and Troubleshooting PCs Lab Manual, 2nd Edition (2007), McGraw-Hill; ISBN: 0-07-226362-8

Basic PC Toolkit (Recommended Only) PC Wrist strap required

Proposed Schedule

Lesson 1, Class introduction, administration, Introduction to CompTIA Chapter 1- The Visible PC	
Lesson 2, Chapter 1 - The Visible PC (Cont.)	Labs 1.1, 1.2, 1.3
Lesson 3, Chapter 2 - Microprocessors	
Lesson 4, Chapter 2 – Microprocessors (Cont.)	Labs 2.1, 2.2, 2.3
Lesson 5, Chapter 3 – RAM	
Lesson 6, Chapter 3 – RAM (Cont.)	Labs 3.1, 3.2
Lesson 7, Chapter 4 – Motherboards and BIOS	
Lesson 8, Chapter 4 – M/B and BIOS (Cont.)	Labs 4.1, 4.2, 4.3
Lesson 9, Chapter 5 – Expansion Bus	
Lesson 10, Chapter 5 – Expansion Bus (Cont.)	Labs 5.1, 5.2, 5.3
Lesson 11, Chapter 6 – Power Supplies	Labs 6.1, 6.2
Lesson 12, Chapter 7/8 – Floppy/Hard Drives	Labs 7.1, 7.2,
Lesson 13, Chapter 8 – Hard Drives (Cont.)	Labs 8.1, 8.2, 8.3, 8.4
Lesson 14, Chapter 13 – SCSI	Labs 13.1, 13.2, 13.3
Lesson 16, Chapter 14/15 – CD Media/Sound	Labs 14.1, 14.2, 15.1, 15.2
Lesson 17, Chapter 16 – Video	Labs 16.1, 16.2, 16.3
Lesson 18, Chapter 17 – Modems	Labs 17.1, 17.2, 17.3

Lesson 19, Chapter 18 – Portable PCs

Lab 18.1

Lesson 20, Field Trip to a Major Computer Store - (Assemble in the classroom)

Lesson 21, Chapter 19 – Printers

Labs 19.1, 19.2, 19.3

Lesson 22, Hardware Labs - Troubleshoot Hardware problems

Lesson 23, Chapter 20 – Networks

Labs 20.1, 20.2, 20.3

Review (Time Permitting)