

**COURSE OUTLINE**

Revision: Jay Abram – Date: January, 2009

DEPARTMENT: Technical Education  
CURRICULUM: Computing Technology  
COURSE TITLE: PC Hardware I, Network Administration  
COURSE NUMBER: CTN 170  
TYPE OF COURSE: Vocational Preparatory  
COURSE LENGTH: 1 quarter  
CREDIT HOURS: 5  
LECTURE HOURS: 44  
LAB HOURS: 22  
CLASS SIZE: 24  
PREREQUISITES: CTN 101 or equivalent

**COURSE DESCRIPTION:**

This course is the first in the computer hardware repair and service series. This quarter the course focus is on computer hardware primary peripherals, installation of software, and hardware designs for Windows 95, Win98, Win ME and Win 2000 and Windows, XP recognition. You will begin to build safe and wise work habits; be taught some customer interaction techniques; be taught where to find and how to use reference materials; and be given economic guidelines with respect to 'repair or replacement' choices. You will be instructed in basic linear thinking approach methods of troubleshooting. This includes choices, installation, configuration, and economic guidelines with respect to 'repair or replacement' decisions. You will learn the importance and necessity of accurate paper work via Work Orders. Hands-on experience with a wide variety of computers and situations are provided. A reasonable understanding of how things are supposed to work is imperative to discovering what is wrong with a sick computer. The goal is to enable you to be very comfortable in the work environment and in customer relationships while being a knowledgeable computer technician on the way to you're A+ certification

STUDENT LEARNING OUTCOMES ADDRESSED:

1. Technology - Demonstrate problem solving and network design by utilizing critical thinking skills.
2. Human Relations - Use social interactive skills to work in teams effectively
3. Personal Responsibility - Be able to demonstrate time management skills and independent work habits.
4. Personal Responsibility -: Recognize the need to continue to learn computer hardware and software and adapt to industry changes

PROGRAM OUTCOMES ADDRESSED:

- 1a Identify hardware and operating systems components and proper combinations.
- 1b Identify network devices and OSI components and systems.
- 2b Install and properly configure PC hardware devices and operating systems.
- 3a Select, implement appropriate troubleshooting tools and methods for problem solving.
- 4a Use critical thinking for analysis of hardware, OS, or network problems.
- 4b Access information efficiently and accurately to resolve computer problems.
- 4c Work effectively with others to accomplish complex tasks.

GENERAL COURSE OBJECTIVES:

At the end of the course the student will:

1. Discuss common computer terminology
2. Be able to identify computer components and discuss their function
3. Be able to demonstrate basic troubleshooting techniques.
4. Discuss the 'care and feeding' of computers and the cautions to obey.
5. Be able to compare and contrast the different types of semiconductor memories, physical and logical, that exist within a single PC.
6. Predict with reasonable accuracy, the components for a new PC to be purchased that will accept the software generally available 6 months from today.
7. Demonstrate the assembly and operating system loading of an average personal-use PC.
8. Be able to install and set up a modem, communications software, for a customer.
9. Setup a master/slave situation of IDE devices.
10. Be able to use command line interface to get you out of trouble with a down PC

TOPICAL OUTLINE:	APPROX. HOURS
I. Installation of all types of devices	15
a. Hard drives	
i. Master/ slaving of hard drives.	
ii. Third party hard drive formatting options	
b. Setting up IDE CDROM's	
c. Expansion Cards w/ intro to PnP: PCI, AGP; ISA	
i. Controller cards and device conflicts	
II. Introduction to certifications	3
a. A+ Service Technician: Core Hardware ; OS Technologies	
b. MCSA: WIN2K; NET +; A+	
III. Basic concepts of how OS's effect hardware	18
IV. Controller cards and device conflicts	
a. Integrated, non-integrated, PnP, Legacy cards	
V. Modems and NIC's	10
a. Concepts and Standards	
b. Installation, troubleshooting, testing	
c. Communications software	
VI. In-depth study of System Components	20
a. CPU's :	
i. Brands, Types, Generations	
b. Motherboards	
i. Setting Jumpers or Soft setup	
ii. AT, ATX, Proprietary	
iii. Form Factors	
iv. Slots, Buses, RAM	
v. Sockets	
vi. Chipsets	
c. Memory types and upgrades	
i. Physical and logical	
ii. Requirements for motherboards	
iii. Matching right type with motherboards	
iv. Parity vs. non-parity & ECC	
Total	<hr/> 66 Hours

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