

**COURSE OUTLINE**

Revision: Jay Abram - Date: January, 2009

DEPARTMENT:	Technical Education
CURRICULUM:	Computing Technology
COURSE TITLE:	Overview of Computing Hardware, <u>Network Administration</u>
COURSE NUMBER:	CTN 101
TYPE OF COURSE:	Vocational Preparatory
COURSE LENGTH:	1 Quarter
CREDIT HOURS:	5
LECTURE HOURS:	44
LAB HOURS:	22
CLASS SIZE:	18
PREREQUISITES:	CSC 100

**COURSE DESCRIPTION:**

This course is designed to familiarize computer users and owners with the common hardware components of computing systems. It is a technically based course that will provide students with knowledge to make decisions regarding hardware selection, configuration and upgrading considerations for the purposes of software optimization.

**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: Motivated and able to continue learning and adapt to change. Value one's own skills, abilities, ideas and art, and take pride in one's own work.

STUDENT LEARNING OUTCOMES ADDRESSED (Cont'd):

4. Information Literacy: Access and evaluate information from a variety of sources and contexts, including technology. Use information to achieve personal, academic and career goals, as well as to participate in a democratic society.

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. Know, use and explain how and why safety practices are performed, including the prevention of ESD, EMI, and other conditions harmful to computers and users
2. Understand the basic operation of a computer system
3. Identify hardware components of a computing system and discuss their functions using appropriate terminology
4. Be able to select appropriate computer system components.
5. Describe the advantages and limitations of different data storage media.
6. Understand the history and evolution of computers and operating systems.
7. Use the operating system commands and features to search for, copy move, create, and delete files and folders in the computer's storage devices.
8. Understand the advantages and disadvantages of each of the basic network topologies and peer-to-peer vs. client-server network schemes.

TOPICAL OUTLINE:	APPROX. HOURS
I. Safety	3.0
a. Protect the computer	
b. Hazardous material disposal	
c. Workplace safety	
II. Personal Computer Basics	8.0
a. Layout, forms and functions of motherboards	
b. Motherboard components	
c. BIOS and CMOS	
III. Operating System	5.0
a. Role and evolution of Operating Systems	
b. Profiles and folder sharing	
c. Overview of threads, multitasking (pre-emptive cooperative), and timing	
IV. Processing and Memory	3.0
a. CPU and chipset identification and selection	
b. RAM and cache	
V. Data Storage	7.0
a. Storage device types and interfaces	
b. Installation and troubleshooting	
c. Overview of file allocation tables	
VI. Input/Output Devices	7.0
a. Keyboards & mice	
b. Video cards & monitors	
c. Audio devices	
d. printers	
VII. Network Fundamentals	5.0
a. Topologies	
b. Peer to peer vs. client/server networks	
VIII. File and Folder Management	5.0
a. Naming conventions	
b. Copy, move, find, create and delete files & folders	
c. Organize your files	
IX. Brief intro to batch files	9.0
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	Total 55.0

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REVISED BY: Carol Koepke  
DATE: January 2009