CTS 120
HARDWARE/SOFTWARE SUPPORT

COURSE DESCRIPTION:

Prerequisites: None
Corequisites: None

This course covers the basic hardware of a personal computer, including installation, operations and interactions with software. Topics include component identification, memory-system, peripheral installation and configuration, preventive maintenance, hardware diagnostics/repair, installation and optimization of system software, commercial programs, system configuration, and device-drivers. Upon completion, students should be able to select appropriate computer equipment and software, upgrade/maintain existing equipment and software, and troubleshoot/repair non-functioning personal computers. Course Hours Per Week: Class, 2. Lab, 3. Semester Hours Credit, 3.

LEARNING OUTCOMES:

Upon successful completion of this course, the student will be able to:

a. Identify, install, configure, and upgrade microcomputer modules and peripherals. Include the ability to identify and configure IRQs, DMAs, I/O address, and set jumpers.
b. Diagnose and Troubleshoot common module problems and system malfunctions.
c. Be knowledgeable of safety and preventive maintenance procedures.
d. Identify specific terminology, facts, ways and means of dealing with classifications, categories and principles of motherboards, processors, and memory in microcomputer systems.
e. Be knowledgeable of basic types of printers, basic concepts, printer components, how they work, how they print onto a page, paper path care and service techniques and common problems.
f. Identify portable computers and their unique components and problems.
g. Identify network terminology, ability to determine whether a computer is networked and knowledge of network interface cards.
h. Be able to select appropriate hardware to meet specified needs.
i. Identify appropriate procedures for disaster recovery.
j. Identify acceptable customer relations.

OUTLINE OF INSTRUCTION

I. Overview of system features
   A. Types of systems
   B. Documentation
   C. Standard Components
      1. System boards
      2. Hard disk drives
      3. Floppy disk drives
      4. Memory
      5. Monitors
      6. Keyboards
      7. Mouse and other pointing devices
      8. Power supply
II. The computer system
   A. Interaction between hardware and software
      1. The operating system
      2. Loading software correctly

III. Troubleshooting and repair
   A. Opening the system
      1. Safety precautions
      2. Equipment Protection
   B. Diagnosing and correcting problems
      1. Visual inspection
      2. Software diagnostics
      3. Diagnostics tools
      4. Making repairs
      5. Testing after repairs
      6. Disaster recovery

IV. Selecting a system
   A. Determining needs
   B. Projecting growth
   C. Obtaining current system information
   D. Configuring the system
   E. Warranty information

REQUIRED TEXTBOOKS AND MATERIALS:

To be announced by Instructor.