

COURSE OUTLINE

CMSY-105

Personal Computer Systems Repair I

3 Semester Hours

HOWARD COMMUNITY COLLEGE

Description

Upon completion of this course, the student will have a basic technical understanding of the function and operation of the major elements of personal computer systems, and how to localize and correct common hardware problems. Students will have hands-on experience using 386, 486 and pentium based systems. The course will focus on broad concepts and diagnostic tools which allow the student to rapidly determine the condition of a PC system and how best to rectify a fault. Special emphasis will be placed on how systems are configured, modified, and expanded to meet new requirements. Different software tools like CheckitPro, Norton Utilities and DOS utilities will be used to diagnose the problems. This course, along with CMSY-106, prepares students for the hardware level of A+ certification offered by the Computer Industry Association. The material is preparatory for the follow-on course, CMSY-106, Personal Computer Systems Repair II. (2 hours lecture, 3 hours lab)

Overall Course Objectives

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

1. Identify the safety hazards involved in working with electronic equipment.
2. Compare processor (CPU) characteristics and differentiate each processor by its characteristics.
3. Identify different types of buses (PC bus, ISA, MCI, EISA, VESA, and PCI).
4. Determine which parts in a given microcomputer system are most likely to fail.
5. Utilize preventive maintenance procedures, identify and correct environmental problems that relate to computer systems and know how to correct them.
6. Use documentation, software diagnostics, tools and parts to make repairs to microcomputer equipment following industry standard practices and safety procedures.
7. Modify AUTOEXEC.BAT and CONFIG.SYS files as necessary when installing hardware.
8. Identify, install and troubleshoot RAM and ROM.
9. Install, troubleshoot, replace and repair floppy drives, hard drives, keyboards, monitors, and power supplies.
10. Use utility packages to recover corrupted or lost data from the hard and floppy drives.

Major Topics

- I. Identify Different PCs
 - A. Different Processor Characteristics
 - B. Types of Buses
 - C. Safety Procedures and Proper Use of Tools

- II. Memory Organization
 - A. ROM Configuration
 - B. RAM Configuration

- III. Use of Diagnostic Software
 - A. CMOS BIOS Setup
 - B. Test System Board Components and Memory with a Diagnostic Software

- IV. Floppy Drive/Hard Drive
 - A. Configuring and Installing Drives
 - B. Maintenance
 - C. Testing and Troubleshooting
 - D. Data Recovery
 - E. Virus Testing
 - F. Data Compression

- V. Input Devices
 - A. Types of Input Devices, Maintenance and Troubleshooting
 - B. Display and Display Adaptor Types, Maintenance and Troubleshooting

Course Requirements

Grading/Exams: Grading procedures will be determined by the individual faculty member but will be calculated on the basis of tests, lab reports, project and final exam. This course includes a comprehensive final exam.

Writing: Each week, students are expected to write a laboratory report after performing that week's assigned experiments.

Other Course Information

This course is a course in the Computer Support Technology letter of recognition program.