CSET 2100 Small Computer Systems (4 semester credit hours) IT Required

Current Catalog Description:

This course covers the various parts of a Personal Computer and how the hardware and software perform together. Content covers CPU development, various busses, memory devices, connections to peripheral devices, operating systems and additional topics concerned with the PC.

Textbooks:

Upgrading and Repairing PC's, Scott Mueller, Que, 16th ed.

Related Program Outcomes:

IT Program Outcomes are (a, b, i, and j)

Course Objectives:

After successful completion of this course, students will be able to:

- build a personal computer from an assortment of parts
- load various operating systems such as DOS, FreeBSD and Windows.
- understand the purpose and function of an operating system.
- plan the layout of a personal computer.
- identify the various components of a personal computer.
- understand throughput and bottleneck issues with respect to a personal computer.

Major Topics Covered in the Course

Topic	Lecture Hours	Lab Hours
Development of the PC	1.5	
PC Components, features and system design	3	1
Microprocessor types and specifications of various processors	3	2
Motherboard and bus design	3	2
BIOS development and upgrading	3	2
Memory types and installation	3	2
SATA, ATA/IDE, SCSI interfaces	3	2
Various disk storage types	3	1
Video and audio hardware	1.5	2
I/O interfaces	3	2
Local Area Network connectivity	1.5	2
Internet connectivity	1.5	1
Power supply design and case sizes	3	1
Systematic building and upgrading techniques	3	
Diagnosis of various PC problems including file data recovery	3	2
Operating system installation and configuration	3	4
Basic operating system troubleshooting and problem diagnosis.	3	4
Totals	45	30

Laboratory Projects:

Students disassemble and reassemble a workstation while examining various system components. Students install a selection of operating systems based on either Windows or Linux distributions. Basic system configuration and operating system configuration is required.

Oral and Written Communications

An introduction to lab report writing is a course module. Students are expected to be able to inventory and report on system characteristics.

Social and Ethical Issues

None

Theoretical Content

None

Problem Analysis

Laboratory sessions include disassembly and reassembly of a desktop workstation. Basic component troubleshooting is introduced as part of the laboratory exercise.

Solution Design

None

Course Coordinator:

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	Student Outcomes: **IT Program**	Course Outcomes	Assessment Methods
a	an ability to select and apply knowledge of computing and mathematics appropriate to the discipline. Specifically, an ability to use and apply current technical concepts and practices in the core information technologies. [IT-j]	Students will be able to assemble a personal computer using the most current available PC hardware and technology.	Graded Laboratory exercises
b	an ability to analyze a problem, and identify and define the computing requirements appropriate to its solution.	Students will be able to analyze and solve hardware and software problems associated with personal computer	Graded Laboratory exercises Graded Exam questions
c	an ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs. And, an ability to identify and analyze user needs and take them into account in the selection, creation, evaluation and administration of computer-based systems. [IT-k]		
d	an ability to function effectively as a member or leader on technical teams to accomplish a common goal.		
e	an understanding of professional, ethical, legal, security and social issues and responsibilities including a respect for diversity.		
f	an ability to communicate effectively with a range of audiences using a range of modalities including written, oral and graphical.		
g	an ability to analyze the local and global impact of computing on individuals, organizations, and society.		
h	recognition and understanding of the need for and an ability to engage in self-directed continuing professional development.		
i	an ability to select and apply current techniques, skills, and tools necessary for computing practice. And an ability to effectively integrate IT-based solutions into the user environment. [IT-l]	Students will be able to analyze and solve hardware and software problems associated with personal computer using laboratory facilities	Graded Laboratory exercises Graded Exam questions
j	an understanding of best practices and their application. [IT-m]	Students will be able to identify and select components appropriate for implementing workstation computing systems.	Graded Exam questions
k	an ability to assist in the creation of an effective project plan. [IT-n]		