



CIS 1120

Division: Career and Technical Education

Department: Computer Information Systems

Course: CIS 1120

Title: PC Hardware and Software

Catalog Description:

This course discusses the history, role, and structure of computer architecture and operating systems needed by computers. This class is designed to explore physical and functional characteristics of computer devices and components and trends in computer architecture with emphasis and detailed information on configuring a microcomputer, troubleshooting problems that occur, interrupts, device and memory management, virtual memory and paging, file management, and performance analysis. Lab exercises include assembling a computer and troubleshooting problems. The course prepares students for the A+ certification exam.

General Education Requirements: N/A

Semesters Offered: TBA

Credit/Time Requirement: Credit: 3; Lecture: 3; Lab: 1

Clock/Hour Requirements: 60

Offered for Non-Credit: No

Prerequisites: None

Corequisites: None

Justification:

This course is required by the program advisory committee and is a prerequisite for other CIS classes. This course helps prepare students for job readiness at graduation and/or transfer to a four-year college. This course is similar to UVSC course CSIS 1120.

Student Learning Outcomes:

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

- understand the basic components of hardware and how they function
- understand concepts and hardware used in the architecture of PCs, including: CPUs, RAM, secondary storage, peripheral devices
- have a basic understanding of primary structural and functional aspects of operating systems
- explain the complex interactions between operating system software and computer hardware.

Content:

Course objectives will be accomplished by providing students with learning experiences in the following subject areas:

- computer architecture history
- computer system
 - interconnection structures
 - memory (internal and external)
 - input/output
 - operating system overview
- central processing unit
 - computer arithmetic
 - instruction sets
 - characteristics and functions
 - addressing modes and formats
 - CPU structure and function
- control unit
- parallel organization
- reduced instruction set computers
- con-currency in programs and operating systems
- long-term and short-term scheduling
- memory management
- resource management and blocked queues
- input and output operations and interrupts
- files and information storage
- spooling
- operating systems kernels
- structure and flow in layered operating systems
- security and systems performance
- preventative maintenance
- DOS/Microsoft Windows installing, configuring, upgrading and usage.

General Education Outcomes:

1) Read effectively, constructively, and critically.

Students will be required to read from the assigned text, reference manuals, and industry journals to retrieve, analyze, and synthesize information into design, repair, and troubleshooting situations.

4) Retrieve, evaluate, interpret, and deliver information through a variety of traditional and electronic media.

Students will research technical issues through the internet, industry journals, and reference manuals.

5) Apply a cultural and historical awareness to a variety of phenomena.

Students will be aware of the changing nature of the computer field and how it impacts use of dated software

with newer and older hardware. An awareness of the history and development of computers is a must for professional preparation.

Key Performance Indicators:

In class:

- Student grades will be based on a combination of lab exercises (5-25%), quizzes (5-25%), tests (10-50%), and a final exam or project (20-50%).

Following class:

- Post evaluation will be measured by student success in subsequent classes where students are expected to be familiar with the general workings of operating systems at the microcomputer, minicomputer, and mainframe levels.

Representative Text and/or Supplies:

- Mark Minasi, *The Complete PC Upgrade and Maintenance Guide*, current edition, Sybex.
- Supplementary materials: PC Systems Servicing and PC Systems Troubleshooting workbooks.
- An A+ toolkit.

Optimum Class Size: 15

Maximum Class Size: 20

Signatures:

I hereby submit this course syllabus:

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I hereby find this course consistent with the goals and resources of the Computer Information Systems Department:

Michael P. Medley, MBA, Assistant Professor, Chair

I hereby find this course consistent with the goals and resources of the Career and Technical Education Division:

Michael P. Medley, MBA, Assistant Professor, Dean

I have discussed the need for library resources related to this class with the person submitting the syllabus:

Lynn Anderson, MLIS, Technical Services Librarian (Main Campus)

Michelle Olsen, MLS, Campus Librarian (Richfield Campus)