

PALOMAR COLLEGE
COURSE OUTLINE OF RECORD FOR
DEGREE CREDIT COURSE

 X Transfer Course X A.A. Degree applicable course
(check all that apply)

COURSE NUMBER AND TITLE: CSIS 108 Hardware and O.S. Fundamentals

UNIT VALUE: 4

MINIMUM NUMBER OF SEMESTER HOURS: 80 hrs

BASIC SKILLS REQUIREMENTS: Appropriate language and computational skills.

ENTRANCE REQUIREMENTS

PREREQUISITE: none

COREQUISITE: none

RECOMMENDED PREPARATION: none

SCOPE OF COURSE: This course provides students with the knowledge and skills necessary to build a foundation in computer hardware and operating systems. It will include P.C. hardware and operating system fundamentals; installation, configuration and upgrading; diagnosing and troubleshooting; preventative maintenance; motherboards, processors, and memory; printers; and basic networking including network operating systems.

SPECIFIC COURSE OBJECTIVES: The successful student will be able to:

Hardware Fundamentals

- I. Explain introductory concepts in microcomputers.
- II. Demonstrate safety in working with computer systems.
- III. Identify system components.
- IV. Identify bus architectures.
- V. Identify ports, connectors, and cables.
- VI. Identify expansion boards.
- VII. Identify and use storage systems.
- VIII. Identify and troubleshoot peripheral devices.
- IX. Understand portable computing.
- X. Understand basic networking.

Operating System Fundamentals

- I. Troubleshoot Windows 9x.
- II. Have a knowledge of the Windows 2000 Family of Products.
- III. Understand the Windows 2000 boot process.
- IV. Understand Windows 2000 system administration basics.
- V. Have a basic understanding of networking with TCP/IP.
- VI. Understand name resolution services.
- VII. Customize a Windows 2000 installation.
- VIII. Manage network printing.
- IX. Manage hard disks and partitions.
- X. Monitor and troubleshoot Windows 2000.

CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE:

Hardware Fundamentals

- I. Introduction to Microcomputers
 - A. A Brief History of Computers
 - B. Numbering Systems
 - C. Microcomputer System Components and their Functions
 - D. Software and Firmware
 - E. Tools of the Trade
- II. Safety
 - A. Basics of Electricity and Electronics
 - B. General Safety Guidelines
 - C. Fire Safety
 - D. Computer Equipment Disposal
- III. System Components
 - A. Power Supplies
 - B. ROM BIOS
 - C. Central Processing Units
 - D. System Boards
 - E. Memory
- IV. Bus Architectures
 - A. What is a Bus?
 - B. The 8-bit Bus
 - C. The ISA Bus
 - D. The EISA Bus
 - E. Micro Channel Architecture Bus
 - F. The PCI Bus
 - G. Plug and Play
 - H. Video Circuitry Buses
- V. Ports, Connectors, and Cables
 - A. Overview of Input/Output Ports
 - B. PS/2 Ports
 - C. Serial Ports
 - D. Parallel Ports
 - E. Universal Serial Bus Ports
 - F. FireWire Ports

- VI. Expansion Boards
 - A. Drive Controllers
 - B. Video Cards
 - C. Sound Cards
 - D. Modem Cards
- VII. Storage Systems
 - A. Fixed Disk Drives
 - B. Removable Media Disk Drives
 - C. Backup Systems
- VIII. Peripheral Devices
 - A. Primary Input Devices
 - B. Primary Output Devices
 - C. Other Input/Output Devices
- IX. Portable Computing
 - A. Components of Portable Systems
 - B. PC Cards
 - C. Power Management
- X. Networking
 - A. Network Concepts
 - B. Introduction to the OSI Model
 - C. Network Connectivity

Operating System Fundamentals

- I. Troubleshooting Windows 9x
 - A. Troubleshooting Strategy
 - B. Troubleshooting Configuration Problems
- II. Introduction to the Windows 2000 Family of Products
 - A. Overview of Windows 2000
 - B. Installing Windows 2000
 - C. Server-based Installations
- III. The Windows 2000 Boot Process
 - A. Examining the Windows 2000 Boot Process
 - B. Troubleshooting the Boot Process
- IV. Windows 2000 System Administration Basics
 - A. System Administration in Windows 2000
 - B. The Windows 2000 Registry
- V. Introduction to Networking with TCP/IP
 - A. The Microsoft TCP/IP Protocol Suite
 - B. IP Addresses and Address Classes
 - C. Network and Host Addresses
 - D. Troubleshooting TCP/IP Addressing
- VI. Name Resolution Services
 - A. Host Name Resolution Methods
 - B. NetBIOS Name Resolution Methods
- VII. Customizing a Windows 2000 Installation
 - A. Installing New Hardware
 - B. Customizing Windows 2000
 - C. Adding and Removing Software and Operating System Updates
 - D. Configuring Internet Explorer for Web Access

- VIII. Managing Network Printing
 - A. An Overview of Windows 2000 Printing
 - B. Administering Printers
 - C. Web-based Printing in Windows 2000
- IX. Managing Hard Disks and Partitions
 - A. Creating and Managing Partitions on Basic Disks
 - B. Dynamic Disks
 - C. Disk Defragmentation and Compression
 - D. Managing Encryption
- X. Monitoring and Troubleshooting Windows 2000
 - A. Working with Event Viewer
 - B. Monitoring Performance
 - C. Optimizing Windows 2000 Performance
 - D. Protecting Against Disaster

REQUIRED READING: Text appropriate for the course, such as the following:
 Brooks, Charles J. A+ Certification: Concepts and Practices (Text and Lab Manual) Package, 3rd edition.
 Prentice Hall, 2002

SUGGESTED READING: None

REQUIRED WRITING: Problem solving exercises and skills in computer operating systems and hardware demonstrated in computer homework and lab assignments. A minimum of one page per homework assignment is required.

OUTSIDE ASSIGNMENTS: Students are expected to spend a minimum of three hours per unit per week in class and on outside assignments, prorated for short-term classes.

INSTRUCTIONAL METHODOLOGY:

Check all that apply:

- lecture
- laboratory
- lecture-laboratory combination
- directed study

DISTANCE LEARNING:

This course may be offered as a distance learning course and meets Title 5 regulations 55370, 55372, 55374, 55376, 55378, and 55380.

Yes No

If yes, check all that apply:

- Television Course (Video one-way, e.g. ITV, video cassette, etc.)
- Online Course (Text one-way, e.g. newspaper, correspondence, electronic file, etc.)
- Two-Way Video Conferencing (Two-way interactive video and audio)
- One-Way Video Conferencing (One-way interactive video and two-way interactive audio)
- Computer Assisted Instruction (A specialized form of mediated instruction relying primarily on student access to information and prepared lessons or teaching materials through a computer terminal, but not under immediate supervision of a qualified instructor.)

GRADING POLICY AND STANDARDS (include methods of determining whether the stated objectives have been met by students): Grades for courses are based upon final examinations, mid-term examinations, other tests, assignments, projects, and participation. Faculty will inform students of their grading policy at the beginning of each semester.

50-60%	Assignments
40-50%	Examinations

IS COURSE REPEATABLE FOR REASON(S) OTHER THAN DEFICIENT GRADE?

Yes ____ No X Number of times course may be taken for credit: ____

If yes, identify specific provision of Title 5 Division 2 section(s), 55761-55763 and 58161 which qualifies course as repeatable:

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SIGNATURES ON FILE
