Cabrillo College

CS1 Course Outline

3 units
3 hours Lecture
3 hours Laboratory

CS1 Introduction to Computers and Computer Technology

Surveys the fields of study within computer science and computer technology with a focus on computer literacy in the 21st century. Topics covered include: hardware, software, development systems, the Internet, and networks, including PC and Macintosh. Students interested in a hands-on lab course to coincide with this class may enroll in CS 1L.

Requisites

Prerequisites:

Co-requisites:

Recommended Preparation: Eligibility for ENGL 100 and READ 100.

Core Cabrillo Competencies

Learning Outcomes

Objectives

After successfully completing this course students will be able to:
1. Identify and explain the basic functioning of a computer system in terms of its hardware, software and fundamental operations.
2. Explain the fundamentals of computers and computer nomenclature, particularly with respect to the personal computer industry.
3. Evaluate and explain changes in the computer technology, analyzing recent articles and other sources.
4. Critically assess the advantages and disadvantages of computer technology and to identify issues and concerns related to usage.
5. Describe and evaluate various areas of processing including bits processed, parallel processing, pipelining, cache, multiprocessing, and coprocessing.
6. Explain the fundamentals of development systems.
7. Explain and evaluate different types of operating system software.
8. Explain and analyze different types of networks and the hardware and software used in these networks.
9. Describe the components of the Internet, trace its evolution and analyze the Internet's impact on the societies of today and tomorrow.
10. Discuss and explain areas of security, ethical issues, and legal issues as they relate to computer technology.
11. Ability to further research and investigate other areas of computer technology or expand on those areas discussed in CS 1.

Content

1. The fundamentals of computers including basic nomenclature, the evolution and trends of computers, and the use of binary numbers
2. The basics and fundamental operations of the computer processor including the CPU,

RAM, and ROM
3. Busses and ports including different bus types and bus performance
4. The components of the CPU including the number of bits processed, the data bus, the address bus, coprocessors, multiprocessing, virtual memory, speed, cache, and pipelining
5. Different permanent storage devices and how information is stored and managed on those devices
6. Variety of input and output devices
7. The concepts and functions of various operating system software
8. The different generations of software development languages and the process of developing computer software, including a look at computer languages
9. The concepts and fundamentals of computer communications including modems, parallel communications, serial communications, and remote communications
10. The functions, configurations, and usage of local area networks, multiprocessing operating systems and the intranets
11. The history, fundamentals and usage of the Internet and the issues and concerns of the Internet
12. Computer security, crime, viruses and other issues
13. The use of computer systems and the Internet to research information regarding computer technology
14. Computer programming languages and scripting languages, specifically javascript and html.

Assignments

1. Complete weekly quizzes
2. Small group discussions

1. Read current articles regarding computer technology and give an informative analysis of those articles.
2. Research and analyze different types of personal computer systems depending upon a needs assessment.
3. Research and analyze different types of software depending upon a needs assessment.
4. Model the fundamental operation of a computer system with respect to the computer hardware, operating system software, and application software.
5. Analyze and troubleshoot computer system performance issues as they relate to the computer hardware, software, networking, and the Internet.
6. Complete introductory programming/scripting assignments requiring computer access.

Students are expected to spend 6 hours in class and 3 hours outside of class.

Evaluation Substantial writing requirements are not appropriate for this course. Alternately, students are assessed through demonstrations of problem solving ability.
written homework
reading reports
homework problems
quizzes
exams
class performances
multiple choice
true/false
matching items

completion

Grading Letter Grade or CR/NC

Representative Texts Synder, Lawrence *Fluency with Information Technology - Skills, Concepts and Capabilities* , Pearson Education, July 2003, 2nd, ISBN:0-201-75491-6

Cringley, Robert *Accidental Empires,* Harper Business, 2000, 1st, ISBN:088-730855-4

History Approved 09/22/2004 by Claire Biancalanna, VP of Instruction
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