

**College of San Mateo**  
**Official Course Outline**

1. **COURSE ID:** CIS 110    **TITLE:** Introduction to Computer and Information Science    **C-ID:** ITIS 120  
**Units:** 3.0 units    **Hours/Semester:** 48.0-54.0 Lecture hours; 96.0-108.0 Homework hours; 144.0-162.0 Total Student Learning hours  
**Method of Grading:** Grade Option (Letter Grade or Pass/No Pass)

2. **COURSE DESIGNATION:**

**Degree Credit**

**Transfer credit:** CSU; UC

**AA/AS Degree Requirements:**

CSM - COMPETENCY REQUIREMENTS: C3 Information Competency

CSM - GENERAL EDUCATION REQUIREMENTS: E2b. Communication and Analytical Thinking

CSM - GENERAL EDUCATION REQUIREMENTS: E5d. Career Exploration and Self-Development

3. **COURSE DESCRIPTIONS:**

**Catalog Description:**

Introduction to computers and information science. Includes computer terminology, computer hardware and software, networks, common operating systems, data representation, telecommunications, Internet access and security issues, computer ethics, and beginning computer programming concepts, and an introduction to research processes and methods through online tools and sources. Topics are motivated by current issues and events. Discussions include examination of such issues as privacy, intellectual property, and cloud computing.

4. **STUDENT LEARNING OUTCOME(S) (SLO'S):**

Upon successful completion of this course, a student will meet the following outcomes:

1. Articulate a general understanding of computers and digital basics
2. Differentiate between basic concepts of computer hardware and software
3. Demonstrate use of the operating system to effectively organize and maintain computer files
4. Select equipment and processes for building a wired or wireless network
5. Demonstrate effective use of the Internet and World Wide Web
6. Recognize, create, and manipulate digital media
7. Demonstrate ability to use and evaluate Internet tools for research

5. **SPECIFIC INSTRUCTIONAL OBJECTIVES:**

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

1. Explain how data is represented in the computer
2. List, describe and know the functionality of all hardware components in a computer system
3. List, describe, and know the differences between categories of computer software
4. Understand how software is licensed and know the ethical and legal consequences of using unlicensed software
5. Understand file management, and file backup systems
6. Understand the technology and software that supports the Internet and Local Area Networks
7. Know the differences between digital media: video, bitmaps, vector graphics, and photo images

6. **COURSE CONTENT:**

**Lecture Content:**

(A) Articulate a general understanding of computers and digital basics

1. Computers and Digital Basics

- A. All things Digital
- B. Digital Devices
- C. Digital Data Representation
- D. Digital Processing

(B) Differentiate between basic concepts of computer hardware and software

1. Computer Hardware and Software

- A. Hardware and Software Basics
- B. Microprocessor and Memory
- C. Storage Devices

- D. Input and Output Devices
- E. Hardware Security
- F. Popular Applications
- G. Buying Software
- H. Popular Applications
- I. Buying Software
- J. Installing Software and Upgrades
- K. Security Software

(C) Demonstrate use of the operating system to effectively organize and maintain computer files

1. Operating Systems and File Management

- A. Operating System Basics
- B. Contemporary Operating Systems
- C. Files Basics and File Management
- D. Backup Security

(D) Select equipment and processes for building a wired or wireless network

1. Computer Networking

- A. Network Building Blocks
- B. Wired Networks
- C. Wireless Networks
- D. Using LANs
- E. Security Through Encryption

(E) Demonstrate effective use of the Internet and World Wide Web

1. The Internet and the World Wide Web

- A. Internet Technology
- B. Fixed Internet Access
- C. Portable and Mobile Internet Access
- D. Internet Services
- E. Internet Security

(F) Recognize, create, and manipulate digital media

1. Digital Media

- A. Digital Sound
- B. Bitmap Graphics
- C. Vector Graphics
- D. Digital Video
- E. Digital Rights Management

(G) Demonstrate ability to use and evaluate Internet tools for research

1. Internet Research

- A. Understanding Internet Search Tools
- B. Creating an Internet Research Strategy
- C. Identifying the Right Keywords
- D. Analyzing Search Results
- E. Citing Online Resources
- F. Understanding Boolean Operators
- G. Searching with Filters
- H. Using Metasearch Engines
- I. Understanding Subject Guides
- J. Understanding Evaluative Criteria
- K. Evaluating a Web Page

## 7. REPRESENTATIVE METHODS OF INSTRUCTION:

Typical methods of instruction may include:

- A. Lecture
- B. Activity
- C. Field Trips
- D. Other (Specify): The course includes the following instructional methods as appropriate: - Lectures, and computer demonstrations; - Group activities in the computer laboratory or online; - Student participation in in-class projects or via e-activities; - Occasional videos; - When possible - guest lectures, field trips (local museums, CSM multimedia lab), and participation in on-campus activities when appropriate

## 8. REPRESENTATIVE ASSIGNMENTS

Representative assignments in this course may include, but are not limited to the following:

**Writing Assignments:**

Assignments

1. Orientation - Orient student to class.
2. Where Does All the e-Waste Go? - Students learn of the problems with e-waste.
3. QR Code Apps - Students design a QR reader.
4. Fact Finding - Fact or fiction on the web.
5. Software - installing and uninstalling software safely and efficiently.
6. Cyberterrorist or Pranksters? - After readings, culminates to an online discussion.
7. Tracking Packets - Underbelly of the web and the Dark Net.
8. Paper - Paper on a current computer science topic. This paper is 4-5 pages and requires primary and secondary sources.

**Reading Assignments:**

Readings: Each chapter is approximately 75 pages with several interactive videos.

- Read UNIT 1 and complete UNIT 1 Training  
Digital Content
- Read UNIT 2 and complete UNIT 2 Training  
Digital Devices
- Read UNIT 3 and complete UNIT 3 Training  
Networks
- Read UNIT 4 and complete UNIT 4 Training  
The Web
- Read UNIT 5 and complete UNIT 5 Training  
Social Media
- Read UNIT 6 and complete UNIT 6 Training  
Software
- Read UNIT 7 and complete UNIT 7 Training  
Digital Security
- Read UNIT 8 and complete UNIT 8 Training  
The ICT Industry
- OTHER TOPICS given time: Information Systems, Databases, and additional Programming

**Other Outside Assignments:**

There are several possible extra credits in the course.

Films: viewing of "Imitation Game" and/or "Pirates of Silicon Valley" followed by report.

Museum: visiting local technical museums and write a report.

**9. REPRESENTATIVE METHODS OF EVALUATION**

Representative methods of evaluation may include:

- A. Exams/Tests
- B. Group Projects
- C. Lab Activities
- D. Projects
- E. - Cyber activities provided by the text including but not limited to: Quick Check Questions, Practice Tests, Summary Sessions, and "Screen Tours" - Weekly or bi-weekly computer lab assignments - 2-3 one-hour midterms and/or weekly quizzes - Final project or exam - Projects, which may include: development of an HTML web site, a simple program, an "ePoster" presentation, and / or a research paper.

**10. REPRESENTATIVE TEXT(S):**

Possible textbooks include:

- A. Dale, Nell and John Lewis. *Computer Science Illuminated*, 7th ed. ed. Jones & Bartlett Learning, 2019
- B. Parsons, J. and Oja, D.. *New Perspectives Computer Concepts Comprehensive*, 21st ed. Cengage, 2023

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**Course Originator:** Kamran Eftekhari