COMPUTER INFORMATION SYSTEMS
(CIS)

Computer Information Systems, and why you should study CIS. Computer Information Systems enhances computer literacy. Computer literacy is having knowledge and understanding of computers and their uses. It involves three levels of proficiency (**T-O-P**).

- The First level involves Terminology – ability to read, write, and understand "geek" language.
- The Second level involves Operations – ability to use computers to get work done e.g., word processing, spreadsheets, presentations, and database management.
- The Third level involves Programming – ability to code instructions for computers to operate on desktops, networks, and on the Web.

Computers are everywhere and impact many of our daily activities. Our lives are dependent on information from a computer. Computer skills are a necessity in today's technological world.

The CIS program at College of Alameda prepares you for entry-level business opportunities requiring the use of computer applications, such as word processing, spreadsheet, database management, and geographical information systems (GIS) programs. Our CIS program prepares you for transfer to a university. Advanced students take programming courses, help desk and networking courses, and web publishing courses.

We offer beginning and advanced office application courses. We are the only Peralta college to offer help desk (desktop support technician) courses and networking courses. Our web publishing courses, offered as hybrid (with some face to face meetings) as well as online, lead to a certificate of proficiency upon successful completion of the courses. We also offer other online CIS courses which can fit your busy schedule.

The Computer Information Systems (CIS) program prepares students for entry level business positions requiring the use of computer applications, and will qualify students in the use of word processing, spreadsheet and database management applications. More advanced students may enroll in telecommunications and computer networking courses. In some instances, students with work experience in the above mentioned areas may challenge courses based on that experience. Students seeking advanced placement must meet with an instructor to verify knowledge and skills.

Computer Information Systems Program Learning Outcomes:

- Develop an understanding of the problems and issues confronting individuals and society in general in the use of computers
- Analyze problems and design solutions using the program life cycle concept, HIPO charts, and program logic flowcharts
- Use and write simple Visual Basic code
- Create presentation-quality charts of several types

Students satisfactorily completing the following required courses will be eligible for the **AA degree** and the **Certificate of Achievement in Computer Information Systems**. Confer with a counselor concerning the specific pattern of requirements for this program and refer to the Degrees and Programs section of the Catalog for information on the Associate in Arts degree.

Degree Major/Certificate Requirements:

Dept/No.	Title	Units
CIS 1	Introduction to Computer Information Systems (4)	
	or	
CIS 5	Introduction to Computer Science (5)	4-5
CIS 40	Database Management	4
CIS 42	Spreadsheet Applications	4
BUS 238A	Word Processing I (3)	
	or	
CIS 238A	Word Processing I (3)	3
Select a minimum of 9-10 units from the following:		
BUS 238B	Word Processing II (3)	
	or	
CIS 238B	Word Processing II (3)	
CIS 23	C# Programming (4)	
CIS 25	Object-Oriented Programming Using C++ (4)	
CIS 36A	Java Programming Language I (4)	
CIS 36B	Java Programming Language II (4)	
CIS 39A	UNIX/LINUX Operating System (4)	
CIS 97A	Oracle SQL and PL/SQL (4)	
CIS 209	Introduction to Windows (1)	
CIS 234A	World Wide Web Publishing I (2)	
CIS 234B	World Wide Web Publishing II (2)	
CIS 234D	Web Authoring (2)	
CIS 234E	Creating an E-Commerce Web Site (2)	
CIS 239	Help Desk Tools and Techniques (2)	9-10
	Total Required Units:	**24-26**

CERTIFICATE OF PROFICIENCY (CP)

Students satisfactorily completing the required courses in the following certificate options will be eligible for the **Certificate of Proficiency**. Confer with a counselor or the division dean concerning the specific pattern of requirements for these programs.

DESKTOP SUPPORT TECHNICIAN

Certificate of Proficiency Requirements:

Dept/No.	Title	Units
CIS 1	Introduction to Computer Information Systems	4
CIS 201	Introduction to Computer Hardware	4
CIS 226A	Desktop Support Technician I	3
CIS 226B	Desktop Support Technician II	3
CIS 239	Help Desk Tools and Techniques	2
	Total Required Units:	**16**

WEB PUBLISHING

Certificate of Proficiency Requirements:

Dept/No.	Title	Units
CIS 233	Introduction to the Internet	2
CIS 234A	World Wide Web Publishing I	2
CIS 234B	World Wide Web Publishing II	2
CIS 234D	Web Authoring	2
CIS 234E	Creating an E-Commerce Web Site	2
	Total Required Units:	**10**

CIS 1
Introduction to Computer Information Systems

4 units, 3 hours lecture, 3 hours laboratory (GR)
Acceptable for credit: CSU, UC
General nature of computer hardware, software and systems: Hands-on applications include introduction to word processing, spreadsheet, database management and presentation software, and a brief introduction to web browsing and e-mail. 0702.00
AA/AS area 4c; CSU area E

CIS 4
Introduction to Geographical Information Systems

4 units, 3 hours lecture, 3 hours lab (GR)
Acceptable for credit: CSU
Recommended Preparation: CIS 1, CIS 5, CIS 40
Introduction to Geographic Information Systems [GIS]: Fundamental concepts, cartographic principles, hardware and software requirements; Charts, graphs, and full map layouts; Data structures and sources; Spatial databases and analysis. 0702.00

CIS 5
Introduction to Computer Science

5 units, 4 hours lecture, 3 hours laboratory (GR)
Acceptable for credit: CSU, UC
Introduction to computer science: Architecture of digital computers, design of algorithms for solving various problems, and basic skills in computer programming. 0706.00
AA/AS area 4c

CIS 6
Introduction to Computer Programming

5 units, 4 hours lecture, 3 hours laboratory (GR or P/NP)
Recommended preparation: CIS 5
Acceptable for credit: CSU, UC
Introduction to computer programming: Algorithm design, flow charting, and debugging; elements of good programming style. Course may be instructed in any programming language. 0707.10
AA/AS area 4c

CIS 23
C# Programming

4 units, 3 hours lecture, 3 hours laboratory (GR)
Acceptable for credit: CSU, UC
C# programming: Basic unified modeling language (UML) notation in object-oriented software design and development using the C# programming language in a .Net environment; focus on the program structure, syntax, constructs and keywords of the C# programming language, concepts of intermediate languages (ILs), the common language runtime (CLR), and .Net standard data types. 0707.10
AA/AS area 4c

CIS 25
Object-Oriented Programming Using C++

4 units, 3 hours lecture, 3 hours laboratory (GR)
Recommended preparation: CIS 6 or 10 or 26
Acceptable for credit: CSU, UC
Object-oriented methods of software development using C++: Design and implementation of objects, class construction and destruction, encapsulation, inheritance, and polymorphism. 0707.10
AA/AS area 4c

For all program degree and certificate updates, please visit:
http://alameda.peralta.edu

CIS 40
Database Management
4 units, 3 hours lecture, 3 hours laboratory (GR or P/NP)
Recommended preparation: CIS 1 or 5
Acceptable for credit: CSU
Design, implementation, and maintenance of databases: Analysis of user requirements; building tables, queries, forms, reports, and other topics. 0702.10
AA/AS area 4c

CIS 42
Spreadsheet Applications
4 units, 3 hours lecture, 3 hours laboratory (GR or P/NP)
Recommended preparation: CIS 1 or 5 or 200
Not open for credit to students who have completed or are currently enrolled in CIS 42A and/or 42B.
Eligible for credit by examination.
Acceptable for credit: CSU
Principles of electronic spreadsheets using features available with current popular spreadsheet software: Worksheet creation, formatting and charting; entering data and formulas; functions; editing and printing; web queries; basic database functions of sorting and querying; creating web pages; logical functions; lookup tables; Pivot Tables, Pivot Charts, and trendlines; graphic design for financial statements; creating templates; using macros. 0702.10
AA/AS area 4c

CIS 48AA-FZ
Selected Topics in Computer Information Systems
.5-9 units, 0-9 hours lecture, 0-27 hours laboratory (GR or P/NP)
Acceptable for credit: CSU
See section on Selected Topics. 0702.00

CIS 49
Independent Study in Computer Information Systems
.5-5 units, .5-5 hours lecture (GR)
Acceptable for credit: CSU
See section on Independent Study. 0702.00

CIS 70
Introduction to Tableau Analytics
2 units, 1.5 hours lecture, 1.5 hours laboratory (GR)
Acceptable for credit: CSU
Introduction to Tableau desktop software application used for Big Data Analytics and Business Intelligence: various operations such as filters, calculations, creating sets, charting data, and creating visuals; usage of software to help businesses gain insight into trends in order to make informed decisions. 0702.10

CIS 97A
Oracle SQL and PL/SQL
4 units, 3 hours lecture, 3 hours laboratory (GR or P/NP)
Prerequisite: CIS 1
Acceptable for credit: CSU
Introduction to the design and development of multi-user relational database systems: Oracle SQL and fundamentals of PL/SQL programming. 0707.20
AA/AS area 4c

CIS 201
Introduction to Computer Hardware
4 units, 3 hours lecture, 3 hours lab (GR or P/NP)
Introduction to computer hardware: Maintaining and servicing computer equipment, fundamental concepts and architecture, major computer subsystems and peripheral devices, common computer problems, troubleshooting techniques, repair procedures and preventive maintenance; traditional, current and emerging computer technologies. 0708.20

CIS 205
Computer Literacy
1 unit, 14 term hours lecture, 14 term hours laboratory (GR or P/NP)
Also offered as Bus 219. Not open for credit to students who have completed or are currently enrolled in Business 219.
Introduction to computers and information technology for people with no background in nor knowledge of computers. 0701.00
AA/AS area 4c

CIS 209
Introduction to Windows
1 unit, .75 hours lecture, .75 hours laboratory (GR or P/NP)
Recommended preparation: CIS 205
Introduction to graphical user interfaces using Microsoft Windows. 0702.00
AA/AS area 4c

CIS 223A
Introduction to Word
1 unit, 13.5 term hours lecture, 13.5 term hours laboratory (GR or P/NP)
Introduction to word processing using Microsoft Word: Basic functions such as open, close, save, and print; creating and editing documents, text and print formatting techniques, spell checking, assimilating graphs and tables in documents. 0702.10
AA/AS area 4c

CIS 223B
Introduction to Excel
1 unit, 13.5 term hours lecture, 13.5 term hours laboratory (GR or P/NP)
Introduction to computerized spreadsheets using Microsoft Excel: Basic functions such as open, close, save and print; formulas and functions, creating charts, and formatting commands for setting up worksheets. 0702.10
AA/AS area 4c

CIS 223C
Introduction to Access
1 unit, 13.5 term hours lecture, 13.5 term hours laboratory (GR or P/NP)
Introduction to database management using Microsoft Access: Basic functions such as open, close, save and print; creating, maintaining, organizing, sorting, and presenting data using querying, forms and report functions. 0702.10
AA/AS area 4c

CIS 223D
Introduction to PowerPoint
1 unit, 13.5 term hours lecture, 13.5 term hours laboratory (GR or P/NP)
Introduction to presentation graphics software: Basic concepts such as creating on-screen slides using graphics, tables, charts, and formatted text. 0702.10
AA/AS area 4c

CIS 224
Introduction to the Internet
1 unit, .75 hours lecture, .75 hours laboratory
(GR or P/NP)
Eligible for credit by examination
Introduction to the Internet for access to information resources: Web browsers, web sites, web pages, electronic mail, and skills relevant to participating in an online, hybrid, or web-enhanced course. 0709.00
AA/AS area 4c

CIS 226A
Desktop Support Technician I
3 units, 2 hours lecture, 3 hours lab (GR or P/NP)
Windows Desktop applications: Configuring and troubleshooting, access to resources, hardware devices, desktop and user environments, and network services. 0708.20

CIS 226B
Desktop Support Technician II
3 units, 2 hours lecture, 3 hours laboratory (GR or P/NP)
Recommended preparation: CIS 1
Windows desktop support: Supporting users and troubleshooting applications. 0708.20
AA/AS area 4c

CIS 227
Word Processing for Legal Professionals
3 units, 2 hours lecture, 3 hours laboratory (GR or P/NP)
Recommended preparation: Bus 230DEF (Self-Paced). Students should be able to type 25 words per minute.
Also offered as BUS 227. Not open for credit to students who have completed or are currently enrolled in BUS 227.
Emphasis on the use of Microsoft Office Word Application features to create legal-oriented documents: legal correspondence, legal pleadings, memorandum of points and authorities, table of contents, table of authorities, indexes, and forms. 0706.00
AA/AS area 4c

CIS 234A
World Wide Web Publishing I
2 units, 1.5 hours lecture, 1.5 hours laboratory
(GR or P/NP)
Recommended preparation: CIS 233 and Grart 112
Creating and publishing Web pages over the Internet using the Hypertext Markup Language (HTML). 0709.00
AA/AS area 4c

CIS 234B
World Wide Web Publishing II
2 units, 1.5 hours lecture, 1.5 hours laboratory
(GR or P/NP)
Prerequisite: CIS 233 and 234A
Recommended preparation: Grart 112
Continuation of CIS 234A: Emphasis on advanced HTML and layout techniques, client-side image maps, CGI scripting, introduction to cascading style sheets and dynamic scripting. 0709.00
AA/AS area 4c

CIS 234D
Web Authoring
2 units, 1.5 hours lecture, 1.5 hours laboratory
(GR or P/NP)
Recommended preparation: CIS 234A
Art of web design and the power of web authoring in website content management and functionality: Website templates, customization, layout tables, interactive forms, frames, database interface, wizards, source controls, dynamic layers, instant updates, multimedia content, subsite and website management. 0709.00
AA/AS area 4c

CIS 234E
Creating an E-Commerce Web Site
2 units, 1.5 hours lecture, 1.5 hours laboratory
(GR or P/NP)
Recommended preparation: CIS 234A
Business strategies and programming techniques in the design and development of an electronic commerce web presence: Banner ads, auto responders, product catalogs, shopping carts, cookies, electronic payment systems, online database and website security management. 0709.00
AA/AS area 4c

CIS 239
Help-Desk Tools and Techniques
2 units, 1.5 hours lecture, 1.5 hours laboratory
(GR or P/NP)
Recommended preparation: CIS 1
Help-desk tools and techniques: Troubleshooting problems on computer systems, both networked and stand-alone; customer-service skills for success; use of help-desk software. 0708.20
AA/AS area 4c

CIS 248AA-FZ
Selected Topics in Computer Information Systems
.5-9 units, 0-9 hours lecture, 0-27 hours laboratory
(GR or P/NP)
See section on Selected Topics. 0702.00