

COMPUTER INFORMATION SYSTEMS

The Computer Information Systems (CIS) department provides training for those persons who plan to work within a technical, computer-centered environment. Because of the widespread use of computers in our society, employment opportunities are found in a multitude of different environments such as general business, communications industries, manufacturing, environmental engineering, education, medical technology, and banking and finance as well as computer information science. The program is specifically designed to provide the student with practical training which would be valuable and useful in the computer programming workplace.

Career Opportunities

Computer Operator, Computer Operations Management, Computer Training Specialist, Data Administrator, Data Control Clerk, Data Entry Operator, Documentation Clerk, Education Specialist, Electronic Graphics Artist, Information Center Specialist, Management Technical Assistant, Microcomputer Technical Support, Multimedia Specialist, Network Administrator, Network Specialist, Network Support Specialist, Production Control Clerk, Programmer, Programmer/Analyst, Programming Librarian, Quality Control Specialist, Systems Analyst, Technical Research Assistant, Technical Support Specialist, Technical Writer, User Support Specialist, Web Master, Web Page Development

Faculty

Thomas, Shane

Tonning, Paul

Transfer

- California State University, San Bernardino: Computer Science, Computer Systems, and Computer Engineering majors
- University of California, Riverside: Computer Science and Computer Engineering majors

Note: Typically, majors in Computer Science require the following courses taken prior to transfer: CHEM 201 General Chemistry, CIS 201 Programming Concepts and Methods I, CIS 202 Programming Concepts and Methods II; ECON 102 Principles of Economics: Micro; MATH 226 Analytic Geometry and Calculus I, MATH 227 Analytic Geometry and Calculus II, MATH 228 Analytic Geometry and Calculus III, MATH 231 Linear Algebra; PHYS 201 Engineering Physics I-Mechanics, PHYS 202 Engineering Physics II - Fluids, Sound, and Thermodynamics, PHYS 203 Engineering Physics III Electricity And Magnetism, and PHYS 204 Engineering Physics IV-Optics and Modern Physics. An alternative to the CIS transfer major that appeals to many students is Administration, with an emphasis in CIS. See Business Administration.

For the most up-to-date information on these programs and others, visit assist.org (<http://www.assist.org>). Please stop by the Transfer Center in Building 23 or make an appointment with a counselor if you have questions.

Computer Information Systems, AS

State Control Number: 07547

Program Code: CIS.AS

Approved for Federal Financial Aid: Yes

The Computer Information Systems major requires 18 units from any of the certificates or from any Computer Information Systems coursework. CIS 138 Work EXP Edu Computer Info Systems Information Systems may be used as elective credit, but may not be used to fulfill major requirements.

To earn this degree, complete the major coursework with "C" grades or better and all of the following graduation requirements: 60 minimum degree-applicable units (including a maximum 4 units of activity); 2.0 minimum overall GPA; 12 degree-applicable units through VVC; Information Competency; Global Citizenship; Kinesiology, and the VVC General Education pattern (<https://catalog.vvc.edu/degrees-certificates/vvcge/#vvcge>). Courses may count in one area only, either in the major or in a general education category. Courses counted in one AA/AS major may not be used in another AA/AS major.

Code	Title	Units
Required Courses		
Complete 18 units from the Computer Information Systems (CIS) discipline.		18.0
Select courses numbered 50-199, except 138.		
Total Units		18

Computer Science, AS-T

State Control Number: 41476

Program Code: CIST.IGETC.AS

Approved for Federal Financial Aid: Yes

Students successfully completing an Associate in Computer Science for Transfer degree will be prepared to transfer into the CSU system to continue toward a B.S. in Computer Science or a similar major. The transfer degree is designed in accordance with the statewide Transfer Model Curriculum to ensure a smooth transition to the junior level of the designated major at a CSU. There are 8 required courses for the transfer degree including two consecutive high level programming courses that introduce students in software development, one low level programming course that teaches students about computer (hardware) architecture and organization, one computer math course that focuses on discrete structures, two consecutive math courses on single variable calculus, and two consecutive physics courses in calculus-based physics.

To earn this degree complete the major coursework listed here with "C" grades or better and the following graduation requirements: 60 CSU transferable units; the IGETC (https://www.vvc.edu/sites/default/files/2023-09/2023-2024_IGETC_09_22_2023.pdf) pattern; and a 2.0 minimum overall CSU GPA. Courses used in the major may also be counted in the general education areas. Courses used for this major may also be used to earn other degrees at VVC.

Code	Title	Units
Required Courses		
CIS 201	Programming Concepts and Methods I	4.0
CIS 202	Programming Concepts and Methods II	4.0
CIS 208	Computer Architecture and Organization	3.0
CIS 264	Discrete Structures	3.0
MATH 226 & MATH 227	Analytic Geometry and Calculus I and Analytic Geometry and Calculus II	8.0
PHYS 201	Engineering Physics I-Mechanics	4.0

Code	Title	Units
PHYS 202	Engineering Physics II - Fluids, Sound, and Thermodynamics	4.0-5.0
or BIOL 201	Biology of Cells	
or CHEM 201	General Chemistry	
Total Units		30-31

MySQL Database Developer Certificate of Achievement

State Control Number: 37849
Program Code: MYSQLDD.CERT
Approved for Federal Financial Aid: No

The MySQL Database Developer Certificate is a high quality certification process that will provide evidence that a qualifying individual has skill in developing production relational MySQL database applications. By being certified, clients, customer, and employers are ensured that the database developer is competent and professional.

Code	Title	Units
Required Courses		
Complete all of the following with a C or better		
CIS 280	Fundamentals of Database Management Systems	3.0
CIS 282	Structured Query Language	4.0
CIS 91A	MySQL Admin A	2.0
CIS 91B	MySQL Admin B	2.0
Total Units		11

Network Specialist Certificate of Achievement

State Control Number: 37434
Program Code: NETSPC.CERT
Approved for Federal Financial Aid: Yes

This certificate program prepares the student to begin a career in the computer networking field. Scope includes administering a variety of popular network platforms including Linux and Microsoft systems.

Code	Title	Units
Required Courses		
CIS 50	Computer Ethics	2.0
CIS 150	Fundamentals of Networking	3.0
CIS 190	Introduction to the Unix Operating System	4.0
CIS 240A		
CIS 261	Unix System Administration	4.0
Total Units		13

Programming I Certificate of Achievement

State Control Number: 10796
Program Code: PROG1.CERT
Approved for Federal Financial Aid: Yes

This certificate trains the student to become a programmer with some of the most popular programming languages such as C++, Java, Javascript, and Python

Code	Title	Units
Required Courses		
CIS 104	Object Oriented Analysis and Design	3.0
CIS 201	Programming Concepts and Methods I	4.0
CIS 202	Programming Concepts and Methods II	4.0
CIS 264	Discrete Structures	3.0
Complete one course from the following:		
CIS 221	Programming Concepts & Methodology I Using Python	4.0
CIS 205	Javascript	
CIS 206	Programming Java	
Total Units		18

Unix Administrator Certificate of Achievement

State Control Number: 37565
Program Code: UNIXADMIN.CERT
Approved for Federal Financial Aid: No

The UNIX Administrator Certificate is a high quality certification process that will provide evidence that a qualifying individual has skill in designing, implementing and maintaining UNIX and Linux based networks. By being certified, clients, customers, and employers are ensured that the UNIX administrator is well equipped to handle the day-to-day operations associated with a UNIX based network as well as the unforeseen problems that tend to arise in any network.

Code	Title	Units
Required Courses		
Complete all of the following with a C or better		
CIS 50	Computer Ethics	2.0
CIS 190	Introduction to the Unix Operating System	4.0
CIS 221	Programming Concepts & Methodology I Using Python	4.0
CIS 261	Unix System Administration	4.0
Total Units		14

Web Authoring Certificate of Achievement

State Control Number: 37442
Program Code: WEB.CERT
Approved for Federal Financial Aid: No

This certificate provides the student solid training in developing web pages.

Code	Title	Units
Required Courses		
CIS 50	Computer Ethics	2.0
CIS 136	Introduction to the Internet	2.0
CIS 137	Introduction to HTML	3.0

Code	Title	Units
CIS 205	Javascript	4.0
Total Units		11

Computer Information Systems Courses

CIS 50 Computer Ethics (2.0 Units)

Computer Ethics is an introduction to the theories and issues of ethical behavior as applied to our rapidly changing, information-oriented, computer-driven society. Various ethical theories are introduced and numerous case histories are presented. Recommended Preparation: Know how to use a personal computer: functions of mouse buttons and control of mouse movement (right click, left click, single click, double click, drag-and-drop, etc.), create, open and save files, install and run applications. Type about 30 WPM to keep up with class assignments. Lecture Hours: 36.0
Transfer: Not transferable

CIS 91A MySQL Admin A (2.0 Units)

This course is designed to provide students with an introduction to the MySQL relational database management system. Students will learn how to design, install, configure and secure MySQL databases. The student should have prior experience with the fundamentals of databases. Lecture Hours: 27.0; Lab Hours: 27.0
Transfer: Not transferable

CIS 91B MySQL Admin B (2.0 Units)

This second course in MySQL database administration is designed to provide students with an advanced approach to current database administration issues in enterprise level databases. Topics include: Transactions, Multiple Servers, Replication, Locking and Administration Interfaces. Lecture Hours: 27.0; Lab Hours: 27.0
Transfer: Not transferable

CIS 101 Computer Literacy (4.0 Units)

This is a survey course which provides an overview of computer technology for multidisciplinary majors. Using laboratory projects supported by the lecture, the student gains "hands-on" familiarity with different operating systems, word processors, spreadsheets, database management systems, programming, networks and the use of the Internet. Recommended preparation: Mouse skills: know difference between, be able to perform, and know when to utilize: left click, right click, single click, double click, and drag and drop motion. Keyboarding skills: nominal typing speeds of about 30 words per minute (WPM). CSU,UC
Lecture Hours: 54.0; Lab Hours: 54.0
Transfer: Transfers to both UC/CSU

CIS 104 Object Oriented Analysis and Design (3.0 Units)

This is a first course in the object-oriented modeling and design, a way of thinking about problems using models organized around real-world concepts. Object-oriented models are useful for understanding and communicating complex system designs. This course is useful for understanding program analysis and design in object-oriented programming language courses. Recommended Preparation: CIS 101
Lecture Hours: 54.0
Transfer: Transfers to CSU only

CIS 136 Introduction to the Internet (2.0 Units)

This course of instruction is designed for the student or savvy business person who wants to acquire the skills needed to effectively interact and utilize the resources of the Internet and including its main component, the World Wide Web (WWW). By completing this course, a student will become well versed in the understanding and use of browsers and viewers, File Transfer Protocol (FTP), news groups, e-mail, and chat/ conversation utilities. They will also be made aware of some of the other concerns relating to using the Internet, such as privacy and security issues. Recommended Prep: Know how to use a personal computer: functions of mouse buttons and control of mouse movement (right click, left click, single click, double click, drag-and-drop, ect.), create, open and save files, install and run applications. Type about 30 WPM to keep up with class assignments. Lecture Hours: 27.0; Lab Hours: 27.0
Transfer: Transfers to CSU only

CIS 137 Introduction to HTML (3.0 Units)

A course designed for the student or business person who wants to acquire the skills needed to create a presence on the WWW in the form of a web page. Subjects covered include HTML, CSS, and web authoring (design, implementation, and maintenance of web pages.) Lecture Hours: 36.0; Lab Hours: 54.0
Transfer: Transfers to CSU only

CIS 138 Work EXP Edu Computer Info Systems Information Systems (1-8 Units)

Work Experience Education is a key element of Victor Valley College's comprehensive approach to career development. Work Experience Education is a 16-, 12-, or 8-week course that enables students to receive college credit for paid or unpaid work opportunities. This course helps students gain valuable on-the-job work experience while providing practical education, best practices in professional development, and academic guidance throughout the course of their work opportunity. The combination of practical experience and curricular development empowers students to be more competitive, efficient and valuable employees upon completion of this program and/or their academic program trajectory. The course is ideal for students who are cross-training at their current worksite for upward mobility or seeking career changes, as well as those looking for entry-level occupational training through work-based learning experiences such as through an internship. Work Experience Education transforms community businesses, industries, and public agencies into expanded educational training laboratories. Credit is awarded on the basis of learning objectives completed and the number of hours the student trains. Students must create/complete new learning objectives each semester they enroll. Students may utilize their present work sites. More details are available in the Work Experience Education Office, (760) 245-4271, ext. 2281. The office, located in the Academic Commons, is open Monday-Thursday, 8:00 a.m.-1:00 p.m., 2:00-6:00 p.m., and by appointment. Please refer to the Work Experience Education section in this catalog for more information. CSU
Transfer: Transfers to CSU only

CIS 150 Fundamentals of Networking (3.0 Units)

Fundamentals of Networking presents a broad overview of the fundamentals of networking computers. This course discusses in some detail the various network topologies, architectures, industrial standard, standards-defining organization, and the practical use of networks. This course is designed to prepare students to take the Network+ certification exam from CompTIA. CSU

Recommended Preparation: CIS 101

Lecture Hours: 36.0; Lab Hours: 54.0

Transfer: Transfers to CSU only

CIS 160 Introduction to Network Security: Security + (3.0 Units)

Presents security topics covering general security concepts, communications security, infrastructure security, basics of cryptography, operational and organizational security. Topics include hacking, viruses, cryptography, detection and prevention on both wired and wireless LANs. CSU

Recommended Preparation: CIS 67

Lecture Hours: 36.0; Lab Hours: 54.0

Transfer: Transfers to CSU only

CIS 190 Introduction to the Unix Operating System (4.0 Units)

This course introduces the Unix and Linux operating systems. Topics include the history of Unix, commands and utilities, file system structure, shells, graphical user interfaces, networking, text editing and shell programming. CSU

Recommended Preparation: CIS 101

Lecture Hours: 54.0; Lab Hours: 54.0

Transfer: Transfers to CSU only

CIS 201 Programming Concepts and Methods I (4.0 Units)

Introduces the discipline of computer science using a high level language utilizing programming and practical hands-on problem solving. C-ID: COMP 122. CSU/UC

Recommended Preparation: CIS 101

Lecture Hours: 54.0; Lab Hours: 54.0

Transfer: Transfers to both UC/CSU

CIS 202 Programming Concepts and Methods II (4.0 Units)

Application of software engineering techniques to the design and development of large programs; data abstraction and structures and associated algorithms. C-ID: COMP 132. CSU/UC

Prerequisite(s): CIS 201, Minimum grade C

Lecture Hours: 54.0; Lab Hours: 54.0

Transfer: Transfers to both UC/CSU

CIS 205 Javascript (4.0 Units)

JavaScript is the front-end programming language for web development. The course covers the fundamentals of the JavaScript language, event driven programming, JavaScript data structures and data interchange formats such as JSON and XML and the fundamentals of the Document Object Model (DOM) - the foundational structure for web programming.

This course includes coverage of current Javascript libraries such as jQuery, React, and Node. Recommended preparation: experience with at least one programming language and HTML+CSS. CSU

Lecture Hours: 54.0; Lab Hours: 54.0

Transfer: Transfers to CSU only

CIS 206 Programming Java (4.0 Units)

This is a course for programming in Java. The course will cover the basics of the Java programming language and object-oriented programming method. Some of the more advanced topics such as applets programming data structure implementation in Java will also be covered. CSU,UC

Lecture Hours: 54.0; Lab Hours: 54.0

Transfer: Transfers to both UC/CSU

CIS 208 Computer Architecture and Organization (3.0 Units)

Designed to train students to understand microcomputer systems low level (hardware) organizations and architecture through assembly language programming. (Formerly CIS 108). C-ID: COMP 142. CSU/UC

Prerequisite(s): CIS 201

Lecture Hours: 36.0; Lab Hours: 54.0

Transfer: Transfers to both UC/CSU

CIS 221 Programming Concepts & Methodology I Using Python (4.0 Units)

First course in a sequence of courses that is compliant with the standards of the Association for Computing Machinery (ACM). C-ID Comp122 Python is a popular programming language that has taken a primary role in many companies including NASA, Google, Industrial Lights and Magic. Python uses an elegant syntax, making the programs easier to write and read, which also makes it an ideal language for beginning programmers. The foundation that students achieve can be applied to digital animation programs and game programming. No prior programming experience is assumed.

Recommended Preparation: MATH 105 and CIS 101

Lecture Hours: 54.0; Lab Hours: 54.0

Transfer: Transfers to CSU only

CIS 261 Unix System Administration (4.0 Units)

Unix system administrators are responsible for the operation of Unix systems—the most common server platform on the Internet. Learn how to setup, manage, and maintain Unix systems. Topics include: the role of the system administrator in an organization; Unix variants; installation; booting and shutting down; backups; managing users.

Prerequisite(s): CIS 190, Minimum grade C

Lecture Hours: 54.0; Lab Hours: 54.0

Transfer: Transfers to CSU only

CIS 264 Discrete Structures (3.0 Units)

This course will cover logic in computer science as a tool to establish truth through various techniques of proof. The goal of this course is for us to learn formal logic as a theoretical foundation and its application to topics in discrete mathematics and computer science. C-ID: COMP 152.

CSU/UC

Prerequisite(s): CIS 201, Minimum grade C

Lecture Hours: 54.0

Transfer: Transfers to both UC/CSU

CIS 280 Fundamentals of Database Management Systems (3.0 Units)

This course provides an in-depth knowledge of several different database management systems (DBMS) and an understanding of the basic relational, network, or hierarchical database structures which they use. Issues of privacy, security, protection, integrity, redundancy, distributed database concepts, data manipulation and query languages are covered.

Lecture Hours: 36.0; Lab Hours: 54.0

Transfer: Transfers to CSU only

CIS 282 Structured Query Language (4.0 Units)

This course covers Structured Query Language using MySQL database management systems. Topics include: concepts of relational databases, DML, DDL, Joins, IF/Case statements, batch operations and locking.

Recommended Preparation: CIS 101 and CIS 280

Lecture Hours: 54.0; Lab Hours: 54.0

Transfer: Transfers to CSU only

Program Learning Outcomes

Program Learning Outcomes (PLOs) are statements of the kind of learning a program hopes a student will achieve. The PLOs describe the knowledge, skills, problem-solving, communication and values that apply to all certificates and/or degrees within that program.

Upon completion of this program, students should be able to:

1. CIS students will attain Technical knowledge and key skills needed to be successful in the IT industry and transfer to university programs.