
Citrus College

Computer Science and Information Systems

Program Review

2006 – 2007

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Prepared for:
Citrus Community College District

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CSIS

Program Review Committee Members

Richard A. Flores	Faculty
Jim Mustain	Faculty
Robert Solis	Faculty
Ying Zhuang	Faculty
Tom Gerfen	Faculty
Stephen L. Lindsey	Dean and chair
Irene Malmgren	Vice President of Instruction
Jeremy Clark	Academic Senate representative
Patrick Borja	Curriculum Committee representative
Michelle Plug	Articulation Officer
Lucinda Over	Dean of Counseling
John Thompson	Dean of Library
Linda Welz	Tech Support and research

CSIS Faculty

Full-Time Faculty

Richard A. Flores
Jim Mustain
Robert Solis
Ying Zhuang

Adjunct Faculty

Oscar Alvarez Jr.
Carl Bartolf
Cecil Brower
Frederick Byaleero
Fred Creamer
Tom Gerfen
William McCusker
Sue Munsey
Greg Riffle
Randy Smith

Degree offered

Associate in Science – Natural Science

Certificate offered

Information Technology

Department awards offered

Computer Programming
Software Applications
Web Development

Advisory Committee

Ilene Smith-Bezjian

Vic Bezjian

Miriam Burgos

Linda DeLong

Jacquelyn Dickens

Linda Esquivol

Linda Ledford

Sam Okuda

Judy Schaffer

Mark Sokol

Dean, School of Business and Management

Azusa Pacific University

Executive Director of the International Center

Azusa Pacific University

Proctor and Gamble

Kaiser Federal Bank

Decorative Specialties

Foothill Federal Credit Union

Parke Guptill & Co.

NP Property Management

Foothill Federal Credit Union

Decorative Specialties

Sequence of courses

CSIS 105 · Introduction to Windows and Personal Computers

CSIS 107 · Fundamentals of Information Technology

CSIS 111 · Introduction to Programming Concepts and Design

CSIS 115 · Client/Server Technologies: Unix/Linux Operating Systems I

CSIS 116 · Client/Server Technologies: Unix/Linux Operating Systems II

CSIS 119 · Introduction to Web Programming

CSIS 130 · Microcomputer Applications I

CSIS 140 · Java Programming

CSIS 141 · Java Script

CSIS 150 · Web Dreamweaver I

CSIS 151 · Web Dreamweaver II

CSIS 160 · Web Design Using Front Page

CSIS 162 · Electronic Spreadsheets

CSIS 166 · Introduction to PowerPoint

CSIS 167 · Introduction to MS Publisher

CSIS 168 · Using Web Page Software

CSIS 170 · Visual Basic Programming

CSIS 175 · Introduction to Access

CSIS 176 · Programming in Microsoft Access and Visual Basic Applications

CSIS 180 · Business Drawings and Diagrams

CSIS 181 · Introduction to Microsoft Project Management

CSIS 185 · Web Application Development Using Scripts
 CSIS 190 · Introduction to Flash Game Programming
 CSIS 199 · Data Processing Project I
 CSIS 201 · Introduction to Electronic Commerce for Business
 CSIS 215 · Introduction to Microsoft Outlook Binder
 CSIS 225 · Object Oriented Programming with C++
 CSIS 230 · Microcomputer Applications II
 CSIS 239 · Telecommunications Concepts
 CSIS 238 · Systems Analysis and Design
 CSIS 240 · Advanced Java Programming
 CSIS 250 · Data Processing Seminar
 CSIS 290 · Data Processing Workshop (A-Z)
 CSIS 291 · Data Processing Workshop (A-Z)
 CSIS 292 · Data Processing Workshop (A-Z)
 CSIS 299 · Data Processing Project II
 CSIS 698A · Cooperative Education
 CSIS 698B · Cooperative Education
 CSIS 698C · Cooperative Education
 CSIS 698D · Cooperative Education
 CSIS 699A · Cooperative Education
 CSIS 699B · Cooperative Education
 CSIS 699C · Cooperative Education
 CSIS 699D · Cooperative Education

Student Learning Outcome timeline

The CSIS faculty members intend to have all course outlines updated with SLOs prior to the end of the 2007/2008 academic year. The chart below show the status of each course and the projected year of completion of course outline revision.

Course	SLOs completed	2006-2007	2007-2008	2008-2009
CSIS 105			X	
CSIS 107	X			
CSIS 111	X			
CSIS 115	X			
CSIS 116	X			
CSIS 119		X		
CSIS 130	X			
CSIS 140	X			
CSIS 141		X		
CSIS 150	X			
CSIS 151	X			
CSIS 160			X	
CSIS 162	X			
CSIS 166			X	
CSIS 167			X	
CSIS 168			X	
CSIS 170		X		
CSIS 175		X		

CSIS 176		X		
CSIS 180			X	
CSIS 181			X	
CSIS 185				X
CSIS 190	X			
CSIS 201				X
CSIS 215				X
CSIS 225				X
CSIS 230		X		
CSIS 238				X
CSIS 239				X
CSIS 240				X
Courses that will be dropped from CSIS curriculum:				
CSIS 199	X			
CSIS 250	X			
CSIS 290	X			
CSIS 291	X			
CSIS 292	X			
CSIS 299	X			
CSIS 698A – 699B	X			

Any new courses developed in the CSIS program will include student learning outcomes. The department will work with the Curriculum Committee to insure that course outlines are developed in accordance with the standards developed by the committee.

The CSIS program has adopted the Institutional General Education Competencies of Citrus College. The General Education Competencies (as set forth in the Academic Senate minutes dated August 25th 2004) are as follows:

Institutional General Education Competencies- Part of Institutional Mission

General education competencies serve as a common set of core curricular components identified and defined by faculty. Student learning outcomes are behaviors based on these competencies.

Any student transferring, completing a degree or certificates from Citrus College, must demonstrate effectively assessed awareness, understanding, knowledge, skills, and abilities in the selected competencies.

1. **Communication (personal expression and information acquisition)**
Examples

Reading analytically and critically	Speaking articulately
Writing with clarity and fluency	Listening actively

2. **Computation**
Examples

Technology	Computer proficiency
Math proficiency	Decision analysis
Analyzing and using numerical data	(Synthesis and evaluation)
Application of mathematical concepts and reasoning	

3. **Creative, Critical, and Analytical Thinking**
Examples

Curiosity	Research
Analysis	Learning Strategies
Synthesis	Problem Solving
Evaluation	Decision making
Creativity	Aesthetic awareness

4. **Community, Critical, and Analytical Thinking**
Examples

Respect for others beings	Citizenship
Cultural awareness	Interpersonal skills
Ethics	Lifelong learning
Community service	Self esteem
Integrity	Empathy

5. **Technology/information competency**
Examples
 Basic computing and word processing

6. **Discipline/subject Area Specific Content Material**

Program Description

The CSIS program includes microcomputer applications, programming languages, and computer support of business organizations. The program offers state-of-the-art training in the use of business application software and hardware to prepare students for professional careers, transfer study, and/or personal use. Students receive individual hands-on training in laboratory facilities. Faculty works with business and industry to ensure relevant training.

Program Goals and Outcomes

The primary goal of the CSIS program is to train students to become proficient in the areas of microcomputer applications, programming, hardware competence, and use of business software applications. It is the department's goal to create a vocational program that helps students further advance their skills in order to be competitive in the technology industry. It is also the department's goal to continue its rigorous academic program to help ensure student success as they transfer to four-year institutions. Other goals of the program include:

- Provide computer and programming skills for students attending the college.
- Provide courses for transfer and vocational educational students.
- Provide courses to upgrade skills for currently employed students.
- Provide transfer credit to four-year colleges and universities.
- Provide classes to support other departments and curriculum on campus.

Students who take courses in the CSIS program will acquire skills, knowledge and necessary abilities to compete successfully within the technology industry. Upon completion of significant course work, students will demonstrate an awareness, understanding and skill level in the following educational competencies:

Technology/Information: Students will demonstrate comprehension of essential hardware, software and computer system terminology. Students will be familiar with, and able to use prompts, commands, menus, and dialog boxes to interact with computers. They will be able to organize computer-based documents into files and folders using one or more operating systems. Finally, they will have at least basic familiarity with various Windows-based applications, including word processing, spreadsheets, presentation graphics and databases.

Communication: Through various group projects and class presentations, students will increase their verbal communication skills. They will improve in their ability to summarize ideas and distill main concepts as they participate in classroom lectures and activities.

Computation: Students, particularly those who complete programming courses, will work extensively with arithmetic computations and operations related to program structure, recursive functions, data manipulation, binary trees, polymorphisms, problem analysis and algorithm design.

Critical and analytical thinking: Students, particularly those who complete programming courses, will improve their skills in critical and analytical thinking as they work in areas including problem analysis and algorithm design, operands and arguments, stack abstract data manipulation, heap manipulating, linked lists, binary trees, polymorphisms, and the effective use of contemporary compilers to design, debug, execute and deploy programs.

MISSION

Commendations:

- a) The program provides the opportunity for basic computer literacy for all students attending the college.
- b) The transfer program meets the needs of students who intend to transfer to a four-year college or university.
- c) By scheduling evening classes, the program provides opportunities for retraining and upgrading of currently employed persons.
- d) CSIS attracts students from culturally diverse groups.

Recommendations

- a) The program's long-range plan should be updated periodically, incorporating the materials contained in the program review.
- b) Program descriptions in the catalog and brochure should be updated and consistent.
- c) The program should offer new courses to address the current changes in technology (XML, Wi-Fi, gaming, interactive communications, etc.).
- d) Program descriptions should clearly describe certificate, transfer, and major requirements.
- e) Course descriptions should be updated on a regular basis.
- f) The faculty should coordinate class schedules to ensure that students can complete the program and certificates in a reasonable time span.
- g) The faculty should review course outlines for sensitivity to cultural diversity.
- h) The department should encourage non-CSIS faculty to give students assignments in the CSIS lab.
- i) The department should utilize marketing and recruiting techniques to increase the number of students enrolled in the CSIS program.
- j) The department should continue to receive input and recommendations from the CSIS Advisory Committee.

QUALITY

Commendations:

- a) Faculty meets the minimum qualifications for the computer science and information systems discipline.
- b) The CSIS faculty stresses critical thinking skills as an integral part of the curriculum.

- c) The CSIS faculty holds regular meetings with an advisory committee to review and make recommendations regarding the college program.
- d) The advisory committee has commended the CSIS program for incorporating new technologies in the curriculum.
- e) CSIS grade distribution is within department averages.

Recommendations

- a) All courses should be reviewed and renumbered as needed to be more consistent with their proper sequence and level of difficulty.
- b) All syllabi should include: student learning outcomes, methods of instruction, methods of evaluation, clear grading standards, attendance and makeup policy, drop date, office hours, and standard District DSPS statement.
- c) All courses should be edited and revised to address current needs and issues. An average of five or six courses should be edited per semester.
- d) Write courses based on institutional core competencies.
- e) Change department course objectives to student learning outcomes (SLO's).
- f) The advisory committee should include industry representatives who have implemented new computer technologies.

NEED

Commendations:

- a) Many four-year colleges and employers require computer competency as an entry requirement.
- b) This program has an excellent potential for drawing international students.
- c) Core courses (107, 130) meet transfer requirements and are required by several programs outside of the department.
- d) The program generates additional FTES as a result of student participation in the computer labs. These labs are open fifteen hours per day during the week and on Saturdays.

Recommendations:

- a) The department should explore additional program offerings that include new technologies as they evolve.
- b) The department should explore the possibility of offering short-term classes on specific areas of technology and/or software on Saturdays.
- c) The department should consider offering more courses either through distance education or through an integrated approach.
- d) The department should review offering courses utilizing other operating systems such as Linux/UNIX and Mac OS.
- e) The department should explore the possibility of offering “linked” courses with other departments (e.g. CSIS and Math).
- f) All CSIS courses should have a credit/no credit option.
- g) The department should have its own server for general student use in all courses.

- h) The department should study the feasibility of adding smart boards in all CSIS classrooms.
- i) Ensure that classroom hardware is state of the art.
- j) Ensure that current versions of software are loaded on all classroom workstations and labs.
- k) All essential program components of existing software such as MS Outlook should be made fully active and demonstrable to students.
- l) As funds become available, the District should increase the number of sections of core courses offered.
- m) Increase the dialogue and cooperation with other departments/divisions (Fine Arts, Electronics, etc.) utilizing computer hardware/software in their courses.
- n) Ease the competition (or perceived competition) in offering similar courses.

FEASIBILITY

Commendations:

- a) The CSIS program incorporates networking technology into all laboratory facilities to maximize computing resources.
- b) The curriculum includes advanced software (e.g. MS Office Professional, Visual Studio, Java).

Recommendations:

- a) Integrate advanced technologies into the CSIS curriculum as they develop.
- b) Provide multimedia and network access for all CSIS classrooms, including Internet access.
- c) CSIS full-time faculty workstations should include the latest technology.
- d) The department should have its own server to accommodate its courses.
- e) The faculty and library staff should coordinate efforts to update the library's CSIS collection.
- f) The library can best serve this program by providing Internet access to online journals and computer science information exchanges.
- g) The department should investigate and establish business partnerships and contract education opportunities to assist in securing and funding up-to-date equipment.

COMPLIANCE

Commendation:

- a) All courses have validated requisites.

Recommendations:

- a) The Office of Instruction should correct the program's TOP codes and disciplines per faculty recommendations.
- b) Ensure that CSIS classes articulate with the California State University system.

- c) Ensure that CSIS classes articulate with surrounding secondary schools and institutions.
- d) Revise the current curriculum to meet changing trends to prepare students for today's technology needs.

CSIS Four-Year Plan

Equipment	Programs	Faculty Needs
2006-2007		
Remodel classroom LB 204 with nova stations for students and new computers. Upgrade all classroom computers to have front USB ports. Upgrade teacher workstations. Begin long range planning for a high tech center and classrooms.	Add new Microsoft Office software and operating system (Longhorn). Offer specialty courses that meet on Saturdays and/or evenings where justified by student demand.	Ensure adequate pool of adjunct faculty to teach additional courses in department. Ensure faculty training/skills in new courses.
2007-2008		
Consider need for P.A. system for classrooms. Obtain Smartboard for classrooms if feasible. Install wireless capabilities in the classrooms if feasible. Add flat panel screens to computer classrooms where feasible.	Increase number of integrated and distance ed programs where justified by student demand. Offer introductory courses to secondary school students to prepare them for more advanced courses in the department.	Ensure faculty training/skills to keep up with new technologies. Replace full-time faculty members who are retiring as needed.
2008-2009		
Remodel classrooms. Replace old hardware with state-of-the-art equipment.	Revise/update courses to address current software updates. Add new courses that address current technologies.	Ensure faculty training/skills to keep up with new technologies.
2009-2010		
Continue discussions and long range planning for a high tech center.	Offer specialty courses that meet on Saturdays and/or evenings where justified by student demand.	Review adjunct faculty pool to insure adequate supply.

Citrus College

Computer Science and Information Systems Program Review (2006-2007)

Key Performance Indicator	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006
<i>Program Access</i>					
Courses offered	87	73	42	48	53
Students	1940	1720	1370	1360	1220
Weekly Student Contact Hours	9030	7530	7310	6760	5180
Full-Time Equivalent Students	280	240	230	210	160
<i>Program Resources</i>					
Credit Reimbursement Rate	2795	2850	2790	2920	
Revenue	840000	720000	667000	650000	563000
Full-Time equivalent Faculty	10.4	8.8	5.4	5.4	5.9
District Program Budget	565000	565000	554000	535000	535000
<i>Program Efficiency</i>					
Productivity = WSCH/FTEF	870	860	1350	1250	880
Average Class Size	22	25	29	29	23
Fill Rate (based on seat max 40)	63%	69%	77%	74%	61%
FTES/FTEF	27	27	42	39	28
Cost per FTES (Budget/FTES)	2020	2250	2280	2370	3100
<i>Program Success</i>					
Course Retention (D or better)	1270	1130	930	970	810
Percent Retention	71%	67%	69%	73%	71%
Course Success (C or better)	1180	1040	860	900	750
Percent Success	66%	62%	63%	68%	65%