

PROGRAM APPROVAL APPLICATION
NEW or SUBSTANTIAL CHANGE or LOCALLY APPROVED
(This application may not exceed 3 pages)

Fill In Form

Gaming and Applications Development Proposed Program Title	Fall 2017 Projected Program Start Date
Citrus College	Citrus District

Contact Information

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Goal(s) of Program (Check all that apply):

Career Technical Education (CTE) Transfer Other

Type of Program (Check all that apply):

Certificate of Achievement 12-17 (or 17-27 quarter) units Certificate of Achievement 18+ semester (or 27+ quarter) units
 Associate of Science Degree Associate of Arts Degree

Reason for Approval Request (Check One):

New Program Substantial Change Locally Approved

Program Information

0707.10 Recommended [Taxonomy of Program \(TOP\) Code](#)
 Units for Major-Degree
 Total Units for Degree
 25 Required Units-Certificate

Written Form

1. Insert the description of the program as it will appear in the catalog. (See PCAH pp. 142 and 170)

This certificate of achievement in Gaming and Applications Development is designed to develop students' skills in computer programming and software development. The certificate equips students with the current methods of computer programming used to solve problems in both the private and public sector. Some of the programming languages demonstrated include C, C++, C#, Assembly language, Java, Visual Basic and Python. This certificate prepares the student for the following job titles: Entry Level Computer Programmer, Applications Programmer and Entry Level Game Programmer.

2. Provide a brief rationale for the program.

Citrus College has a strong computer science program grounded in project and problem based learning with a primary purpose of students transferring to a four-year university or when successful, entering the workplace (we continue to work to undo the academic inflation for computer programmers and software/application developers). This program has the expressed purpose of moving students into the workplace from the community college. Paid and unpaid work experience (WE) will eventually be added to this program as a requirement once the WE program is recalibrated (spring 2018).

Upon completion of this certificate, students will be able to do the following:

1. Demonstrate a solid understanding of data structures, computer architecture, software design, algorithms, programming languages, and object oriented programming.
2. Analyze a problem, identify and define the computing requirements appropriate to its solution.
3. Utilize appropriate software development tools and concepts.

3. Summarize the Labor Market Information (LMI) and employment outlook (including citation for the source of the data) for students exiting the program. (See PCAH pp. 85-88, 136, 147, 148, 165, 168, and 176)

SOC	Description	2017 Jobs	2022 Jobs	2017 - 2022 Change	2017 - 2022 % Change	Pct. 10 Hourly Earnings	Avg. Hourly Earnings	Annual Openings
15-1131	Computer Programmers	11,782	11,412	(370)	(3%)	\$23.12	\$43.59	285
15-1132	Software Developers, Applications	26,933	28,944	2,011	7%	\$32.23	\$52.76	806
15-1133	Software Developers, Systems Software	18,364	18,781	417	2%	\$32.19	\$56.46	349
		57,079	59,137	2,058	4%	\$30.27	\$52.01	1,441

Per the Centers of Excellence program awards data, the LA/OC region supplies an average of 177 total program completers in TOP 0707.10 (computer programming). The projected annual openings across three program related SOC codes is relatively fair at 1,441, the LA/OC region currently appears to be providing just 12% of the needed workforce.

4. List similar programs at other colleges in the Los Angeles and Orange County Region which may be adversely impacted. (There is space for 10 listings, if you need more, please contact laocrc@rscdd.edu)

All CRLC members in the LA/OC region were sent the program catalog description, list of required courses, and program level student learning outcomes. Citrus College received “support” responses from Irvine Valley College and Mt. San Antonio College. There were no responses from Districts/Colleges with concerns about the program as of 5/6/2017.

5. List all courses required for program completion, including core requirements, restricted electives and prerequisites. (There is space for 20 listings, if you need more, please contact laocrc@rsccd.edu).
 (See PCAH pp. 143 and 171)

Students must complete the following core courses:		Units
Students with minimal computer programming experience or knowledge are encouraged to take CS 111 prior to enrolling in the core computer science courses.		
CS225	Object Oriented Programming	3
CS232	Programming Concepts and Methodology II	3
CS242	Computer Architecture and Organization	3
CS252	Discrete Structures	3
Students must complete three (3) of the following electives:		Units
CS157	iOS Programming I	3
CS177	Unity Game Programming I	3
CS257	iOS Game Programming I	3
CS277	Unity Game Programming II	3
Plus complete the following math course (or higher):		Units
MATH170	College Algebra	4
Total Units		25