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

Fill In Form

Cloud Computing Certificate
Proposed Program Title

FALL 2017
Projected Program Start Date

Santa Monica College
College

Santa Monica Community College District
District

Contact Information

Dr. Patricia Ramos
Voting Member

Dean, Workforce & Economic Development
Title

310-434-3311
Phone Number

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Email

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

0702.00   Recommended Taxonomy of Program (TOP) Code

              Units for Major-Degree

              Total Units for Degree

15   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)**

The Cloud Computing Certificate provides the student with the industry standard skills to understand and develop applications for the cloud. Students will learn a range of topics that cover the technical principals of the hardware and software requirements to run systems in the cloud, including storage, database management and software systems while maintaining secure access. The certificate requires 15 units. A minimum grade of C is required in each course taken.

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2. Provide a brief rationale for the program.

Cloud technology is on the rise in demand both by the general public and industries of all market sectors. Cloud computing is now a core competency that the computer software industry seeks. Cloud computing is a type of computing that relies on sharing computing resources rather than having local servers or personal devices to handle applications.

This is the first level of programming planned for cloud computing. Currciulum and offering a entry-level certificate was recommended by the Computer Science advisory board. SMC CS staff have received professional development training by the largest provider of cloud computing resources and industry tools in this space, Amazon Web Services (AWS). The curriculum SMC has developmed is informed by the top industry leader in cloud computing and is a direct result of our partnership with Amazon Web Services (AWS) through a CCPT grant (LA HI-TECH). AWS has informed and encouraged SMC's computer science department to create this certificate as one part of a fully developed comprehensive pathway in cloud computing. SMC's CS advisory board has supported and encouraged the creation of this certificate to cover technologies used not only by AWS but also by other omputer software providers as well. This certificate will offer CS students the skills needed to enter the job market, which no other community college, CSU or UC currently offers.

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)

In Los Angeles County, occupations that are related to cloud computing are expected to increase by 9 percent between 2015 and 2020. There are projected to be more than 2,000 annual openings for the cluster of occupations listed below over each of the next five years. These jobs have median hourly earnings of $45.72 per hour, and the typical entry-level education requirement is a bachelors degree due to traditional hiring practices. However, industy giants AWS and SAP have encouraged SMC to develp a post-secoary certifucate due to scarcity of talent supply with cloud competencies.

Demand: Cloud Computing Occupations (by 2015 jobs)

SOC	Description	2015 Jobs	2020 Jobs	2015 - 2020 change	2015 - 2020 % change	Annual openings	Median hourly earnings
15-1121	Computer Systems Analysts	13,570	14,663	1,093	8%	403	$43.98
15-1133	Software Developers, Systems Software	11,314	11,538	224	2%	209	$55.43
15-1142	Network and Computer Systems Administrators	10,728	11,159	431	4%	238	$39.56
15-1141	Database Administrators	2,690	2,850	160	6%	96	$46.83
	Total/Average	38,301	40,209	1,908	5%	945	$46.32

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Supply: Education

After identifying occupations relevant to cloud computing, student completions were in community college programs training students were identified for these occupations. Currently, there are thirteen community college programs in Los Angeles County that prepare students for the field of cloud computing. Table 2 displays the breakdown of awards for the related community college programs.

Computer Information Systems 070200 Student Awards

TOP	Program	College	CC Headcount	CC Certificate	CC Associate	Total Awards
070200	Computer Systems Analysts	13	6,222	47	22	69

Sources: EMSI Employment Data – 2017.1;

Cloud Computing Occupations (March 2017). Los Angles/Orange County Center of Excellence for Labor Market Research

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@rsccd.edu)**

College	Program	Who You Contacted	Outcome of Contact
Cerritos College	Business CIS	Nick Real	No Oopposition
Citrus College	System Administration Cert	Jim Lancaster	No Oopposition
Coastline Community College	Systems Administration Cert	Nancy Jones	No Oopposition
East Los Angeles College	Office Systems Specialist	Christopher Whiteside	No Oopposition
El Caminio College	Systems Administration Cert	Virginia Rapp	No Oopposition
Irvine Valley College	Systems Administration Cert	Corine Doughty	No Oopposition
Los Angeles City College	Computer Operator Cert	Alex Davis	No Oopposition
Orange Coast College	CIS	Lisa Knuppel	No Oopposition
Rio Hondo College	Systems Administration	Bruce Nobel	No Oopposition

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)**

Required Courses (12 Units total)		Units
CS 79A	Introduction to Cloud Computing	3
CS 79B	Database Essentials in the Cloud	3
CS 79C	Compute Engines in the Cloud	3
CS 79D	Security in the Cloud	3

One of the following (3 Units total):		
CS 55	Java Programming	3
CS 82	ASP .NET Programming in C#	3
CS 83R	Server-Side Ruby Web Programming	3
CS 87A	Python Programming	3
	Total Units	**15**