

Moreno Valley College

**TOP Code 070710: Computer Programming**

Regional Labor Market Information and Analysis

August 2022

## **I. Introduction, Definitions, and Data Sources**

This report summarizes program completion and employment data to analyze the regional labor market for TOP Code 070710: Computer Programming. It draws from the California Community Colleges Chancellor's Office (CCCCO) Curriculum Inventory, Datamart, and Perkins Core Indicator Reports; the U.S. Bureau of Labor Statistics; the Centers of Excellence for Labor Market Research (COE); the CA Employment Development Department; and O\*NET OnLine.

### **Definitions:**

#### ***Labor Market Supply and Demand***

##### **TOP Code**

The California Community Colleges Taxonomy of Programs (TOP) Code is a numeric system used by the state to collect and report information on programs and courses with similar outcomes across colleges. This report refers to TOP Code Manual 6<sup>th</sup> Edition (2013).

*Source: California Community Colleges Curriculum and Instruction Unit*

##### **SOC Code**

The Standard Occupational Classification (SOC) system is used by federal agencies to classify workers into occupational categories to collect, calculate, or disseminate data. All workers are classified into one of 867 detailed occupations according to their occupational definition. Detailed occupations with similar job duties, and in certain instances skills, education, and/or training, are grouped together. The SOC Code system provides a uniform framework to classify positions based on the work performed regardless of the employer or industry.

*Source: U.S. Bureau of Labor Statistics, CA Employment Development Department*

##### **Occupational Employment Projections**

Occupational employment projections estimate changes in occupational employment over time as a result of industry growth, technological changes, and other factors. Projection data are estimates and assume the continuation of historical trends, while acknowledging that a variety of events can occur during the projection period that can impact employment levels.

*Source: CA Employment Development Department*

##### Short-term projections:

Short-term (2-year) projections are based on quarterly average employment levels by industry for base and target quarters. Averages may reflect seasonality in some occupations.

*Source: CA Employment Development Department*

##### Long-term projections:

Long-term (10-year) projections are based on annual average employment levels by industry for base and target years. When using long-term projections data, it is important to note the annual average employment levels for seasonal occupations in agriculture, construction, retail sales, or recreation may vary significantly from seasonal peak periods.

*Source: CA Employment Development Department*

**Total Job Openings**

Total job openings represents the sum of growth (new jobs) and replacement needs. It is the sum of exits (projected number of workers leaving an occupation and exiting the labor force entirely), transfers (projected number of workers permanently leaving an occupation and transferring to a different occupation), and numeric change (projected number of job gains or losses in an occupation for the projection period).

*Source: CA Employment Development Department*

**Median Annual Wage**

Median wage estimates are the mid-point of the wage distribution. 50% of workers in an occupation earn wages below and 50% earn wages above the median wage.

*Source: CA Employment Development Department*

***Student Progress Measures*****Perkins Core Indicator 2: Completions**

This indicator measures student attainment of an industry-recognized credential, a certificate, or a degree. It is the percentage of leaver and completer concentrators who: 1) receive a degree, certificate, or equivalent; or 2) complete a transfer program and are classified as Transfer Ready.

*Source: CCCCCO Perkins Core Indicator Reports*

**Perkins Core Indicator 3: Persistence**

This indicator measures student retention in postsecondary education or transfer to a baccalaureate degree program. It is the percentage of student concentrators who: 1) persisted in education at the community college level, or 2) transferred to a four-year institution. It excludes Life-Long-Learners and those who left with a certificate or degree and did not transfer.

*Source: CCCCCO Perkins Core Indicator Reports*

**Perkins Core Indicator 4: Employment**

This indicator measures student placement in military service, apprenticeship programs, or placement or retention in employment, including placement in high skill, high wage, or high demand occupations or professions. It is the percentage of Career Technical Education (CTE) program leavers and completers who did not transfer to a two or four-year institution and who, during one of the four quarters following the cohort year, were in an apprenticeship program, Unemployment Insurance covered employment, the federal government, or the military.

*Source: CCCCCO Perkins Core Indicator Reports*

**Data Sources:****TOP-SOC Codes**

Moreno Valley College active credit CTE program TOP Codes were obtained from the Chancellor's Office Curriculum Inventory System. The COE TOP-CIP-SOC crosswalk was used to match TOP Codes to SOC Codes.

### Total Job Openings and Median Annual Wage

Total job openings and median annual wage projection data were obtained from the CA Employment Development Department.

### Educational Attainment and Requirements

Educational attainment and requirement data were obtained from the U.S. Bureau of Labor Statistics and the COE TOP-CIP-SOC Crosswalk.

## II. Degrees and Certificates

At Moreno Valley College, the following active credit CTE programs are coded as TOP Code 070710 - Software Applications:

Program Title	Program Award
Computer Programming	A.S. Degree
Computer Programming	Certificate of Achievement requiring 16 to less than 30 semester units or 24 to less than 45 quarter units
Python Programming	Certificate of Achievement requiring 8 to less than 16 semester units or 12 to less than 24 quarter units

Source: The Chancellor's Office Curriculum Inventory System

## MVC Student Achievement

### Credit Program Awards (2020-2021) - TOP Code 070710

<b>Total MVC Credit Program Awards</b>	<b>4</b>
Associate of Science (A.S.) degree	2
Certificate requiring 16 to < 30 semester units	2

Source: CCCC Datamart

### Perkins Core Indicators (2020-2021) - TOP Code 070710

Outcome	MVC	Statewide	Performance Goal
Completions	86.7%	95.8%	84.6%
Persistence	88.9%	92.8%	87.4%
Employment	<10	62.9%	73.2%

Source: CCCC Perkins Core Indicator Reports

### III. Projected Job Outlook

Based on the TOP-CIP-SOC crosswalk provided by the COE, the following SOC Codes were examined to complete the job outlook for TOP Code 070710:

- 15-1131
- 15-1132
- 15-1133
- 15-1134

#### Short-Term Projections:

The table below shows short-term (2020-2022) occupational employment projections for the state of California in the occupations linked to TOP Code 070710. Note, short-term projections are not available below the state level.

#### California Short-Term Job Outlook by SOC Code

SOC Code	Description	Total Job Openings	Median Annual Wage
15-1131	Computer Programmers	8,050	Data not available
15-1132	Software Developers, Applications	42,730	Data not available
15-1133	Software Developers, Systems Software	21,500	Data not available
15-1134	Web Developers	6,880	Data not available

Source: CA Employment Development Department, O\*NET OnLine

#### Long-Term Projections:

The table below shows Inland Empire long-term (2018-2028) projected job openings and median wages, educational requirements, and educational attainment of individuals within these occupations.

#### Inland Empire Long-Term Job Outlook by SOC Code

SOC Code	Description	Education	% of Individuals with Some College, No Degree	% of Individuals with an Associate's Degree	% of Individuals with a Bachelor's Degree	Inland Empire Total Job Openings	Median Annual Wage
15-1131 (updated to 15-1251)	Computer Programmers	Requires a Bachelor's or Higher	12.2%	8.0%	50.2%	436	\$90,608

15-1132 (updated to 15-1252 & 15-1253)	Software Developers, Applications	Requires a Bachelor's or Higher	Data not available	Data not available	Data not available	2,889	Data not available
15-1133 (updated to 15-1252 & 15-1253)	Software Developers, Systems Software	Requires a Bachelor's or Higher	Data not available	Data not available	Data not available	688	Data not available
15-1134 (updated to 15-1254)	Web Developers	Requires an Associate Degree	Data not available	Data not available	Data not available	774	\$52,993

Sources: CA Employment Development Department, COE Crosswalk, Bureau of Labor Statistics, O\*NET OnLine

Note, SOC Codes were updated in 2018. According to O\*Net Online, all of the SOC Codes corresponding to TOP Code 070710 have been replaced. However, CA Employment Development Department projection data and the COE Crosswalk use 2010 SOC Codes. Therefore, job openings, wages, and educational requirements are reported for previous SOC Codes. While the Bureau of Labor Statistics reports educational attainment on updated SOC Codes, it is only available for SOC Code 15-1251 which has replaced SOC Code 15-1131.

**Long-Term Inland Empire Projected Job Openings by Transfer/Non-Transfer Pathways - TOP Code 070710**

Transfer/Non-Transfer	Job Openings
Job Openings: Transfer (SOC Codes requiring a Bachelor’s degree or higher)	4,013
Job Openings: Non-Transfer (SOC Codes requiring an Associate’s degree or less)	774
Total Job Openings	4,787

Sources: CA Employment Development Department, COE Crosswalk

It is projected that between 2018-2028 there will be 4,787 Inland Empire job openings for the SOC Codes associated with TOP Code 070710. According to the COE, the occupational category “Web Developers” typically requires an Associate’s degree. There are projected to be 774 openings in this category. The other occupations associated with TOP Code 070710 typically require a Bachelor’s degree or higher. There are 4,013 projected job openings in these occupations. Wage data is available for SOC Codes 15-1131 and 15-1134. Using the Insight Center Family Needs Calculator, their median wages of \$90,608 and \$52,993 exceed the self-sufficiency standard for the annual wage of a single adult in Riverside (\$29,421) and San Bernardino (\$28,602) counties.

#### IV. Regional Completers

The table below shows the number of degrees and credit certificates awarded in TOP Code 070710 in 2020-2021 at Inland Empire community colleges. Included in this analysis are: Barstow Community College, Chaffey College, College of the Desert, Copper Mountain College, Crafton Hills College, Moreno Valley College, Mt. San Jacinto College, Norco College, Palo Verde College, Riverside City College, San Bernardino Valley College, and Victor Valley College.

The following community colleges had credit program awards in TOP Code 070710 in 2020-2021: Chaffey College, Copper Mountain College, Moreno Valley College, Mt. San Jacinto College, Norco College, Riverside City College, and San Bernardino Valley College.

#### Inland Empire Community College Credit Program Awards 2020-2021 - TOP Code 070710

<b>Total Credit Program Awards</b>	<b>78</b>
<b>Associate Degrees</b>	<b>16</b>
Associate of Science (A.S.) degree	16
<b>Credit Certificates</b>	<b>62</b>
Certificate requiring 30 to < 60 semester units	9
Certificate requiring 16 to < 30 semester units	24
Certificate requiring 8 to < 16 semester units	22
Certificate requiring 6 to < 18 semester units	7

Source: CCCCCO Datamart

#### V. Net Labor Demand

To estimate net annual labor demand, we consider the estimated number of job openings, minus the annual number of program completers. The estimated total annual job openings in the table below is calculated by dividing the total for the 10-year projection period by 10. The projected Inland Empire job openings for the SOC Codes corresponding to TOP Code 070710 between 2018 and 2028 is 4,787. Dividing that number by 10 produces an annual estimate of 479 openings. With 78 program completers for the year 2020-2021, there is an estimated net labor demand of 401.

**Net Annual Labor Demand - Inland Empire Community Colleges - TOP Code 070710**

Total Estimated Annual Job Openings (Transfer and non-transfer pathways)	479
Program Completers (20-21)	78
<b>Net Annual Labor Demand</b>	<b>401</b>

In evaluating net labor demand, it is important to note that the SOC Codes matching TOP Code 070710 are also linked to other TOP Codes. The table below shows all of the TOP Codes matching the SOC Codes in this report.

SOC Code	TOP Code
15-1131: Computer Programmers	070600: Computer Science (transfer) 070700: Computer Software Development 070710: Computer Programming
15-1132: Software Developers, Applications	070600: Computer Science (transfer) 070700: Computer Software Development 070710: Computer Programming
15-1133: Software Developers, Systems Software	070600: Computer Science (transfer) 070700: Computer Software Development 070710: Computer Programming
15-1134: Web Developers	061430: Website Design and Development 070600: Computer Science (transfer) 070700: Computer Software Development 070710: Computer Programming 070900: World Wide Web Administration 070910: E-Commerce (technology emphasis)

Source: COE Crosswalk