Moreno Valley College

TOP Code 070710: Computer Programming

Regional Labor Market Information and Analysis

August 2024

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 6th 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 1: Postsecondary Retention & Placement
This indicator measures the percentage of CTE concentrators who, during the second quarter after program completion, remain enrolled in postsecondary education, are in advanced training, military service, a service program that receives assistance under title I of the National and Community Service Act of 1990, volunteers under the Peace Corps Act, or placed or retained in employment.
Source: California Community Colleges, CCCCO.edu

Perkins Core Indicator 2: Earned Postsecondary Credential
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: California Community Colleges, CCCCO.edu

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: California Community Colleges, CCCCO.edu

Data Sources:

<u>TOP-SOC Codes</u>
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 and O*Net Online were used to match TOP Codes to SOC Codes. Additional SOC Codes using Classification of Instructional Programs (CIP) codes may be found at https://nces.ed.gov/ipeds/cipcode/post3.aspx?y=56

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.

II. Degrees and Certificates

At Moreno Valley College, the following active credit CTE programs are coded as TOP Code 070710 – Computer Programming:

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

Source: The Chancellor's Office Curriculum Inventory System

MVC Student Achievement

Credit Program Awards (2022-2023) - TOP Code 070710

Total MVC Credit Program Awards	5
Associate of Science (A.S.) degree	2
Certificate requiring 16 to < 30 semester units	3

Source: CCCCO Datamart

Perkins Core Indicators (Cohort Year 2021-2022) - TOP Code 070710

Outcome	MVC	Statewide	Performance Goal
Core 1: Postsecondary Retention & Placement	100%	97.5%	92.0%
Core 2: Earned Postsecondary Credential	<10	75.6%	89.6%
Core 4: Employment	<10	68.1%	73.3%

Source: CCCCO Perkins Core Indicator Reports

III. Projected Job Outlook

Using the TOP-CIP-SOC crosswalk provided by the COE and O*Net Online the following SOC Codes were examined to complete the job outlook for TOP Code 070710:

- 15-1251
- 15-1252
- 15-1253
- 15-1254

Short-Term Projections:

The table below shows short-term (2023-2025) 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
15-1251	Computer Programmers	2,390	$120,604
15-1252	Software Developers	35,810	$168,660*
15-1253	Software Quality Assurance Analysts and Testers	4,940	$129,701
15-1254	Web Developers	1,580	$103,449

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

*Annual wage for this category is not available from the EDD. The wage reported is from O*Net Online.

Long-Term Projections:

The table below shows Inland Empire long-term (2020-2030) 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	Typical Education Needed for Entry	% 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
15-1251	Computer Programmers	Bachelor's degree	13.1%	7.6%	50.6%	400	$69,711
15-1252	Software Developers	Bachelor's degree	7.0%	4.1%	51.4%	Data not available	$136,349
15-1253	Software Quality Assurance Analysts and Testers	Bachelor's degree	13.4%	8.2%	50.1%	Data not available	$108,488
15-1254	Web Developers	Bachelor's degree	14.8%	8.2%	56.3%	Data not available	$80,159

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

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)	400*
Job Openings: Non-Transfer (SOC Codes requiring an Associate's degree or less)	n/a
Total Job Openings	400*

Sources: CA Employment Development Department, COE Crosswalk
*Based on available projections data

It is projected that between 2020 and 2030 there will be 400 Inland Empire job openings for the SOC Code 15-1251: Computer Programmers. EDD projection data is not available for the other SOC Codes associated with TOP Code 070710. According to the Bureau of Labor Statistics, a bachelor's degree is typically required for entry into all of the occupations associated with this TOP Code. The estimated percentage of workers in these occupations with a bachelor's degree is between 50% and 56%. The MIT Living Wage Calculator estimates the annual living wage is $53,601 for a single person with no children in the Riverside-San Bernardino-Ontario metropolitan region. With median wages ranging from $69,711 to $136,349, all of the occupations linked to TOP Code 070710 exceed the living wage for the region.

IV. Regional Completers

The table below shows the number of degrees and credit certificates awarded in TOP Code 070710 in 2022-2023 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 2022-2023: Chaffey College, Copper Mountain College, Moreno Valley College, Mt. San Jacinto College, Norco College, Riverside City College, San Bernardino Valley College, and Victor Valley College.

Inland Empire Community College Credit Program Awards 2022-2023 - TOP Code 070710

Total Credit Program Awards	**105**
Associate Degrees	**26**
Associate of Science (A.S.) degree	26
Credit Certificates	**79**
Certificate requiring 30 to < 60 semester units	8
Certificate requiring 16 to < 30 semester units	38
Certificate requiring 8 to < 16 semester units	21
Certificate requiring 6 to < 18 semester units	12

Source: CCCCO 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 2020 and 2030 is 400 (based on available data). Dividing that number by 10 produces an annual estimate of 40 openings. With 105 program completers for the year 2022-2023, there is an estimated net labor demand of -65. It is important to note, however, that the openings are only available for SOC Code 15-1251: Computer Programmers.

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

Total Estimated Annual Job Openings (Transfer and non-transfer pathways)	40*
Program Completers (20-21)	105
Net Annual Labor Demand	**-65***

*Based on available projected job openings data.

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
15-1251: Computer Programmers	070600: Computer Science (transfer) 070700: Computer Software Development 070710: Computer Programming
15-1252: Software Developers, Systems Software 15-1253: Software Quality Assurance Analysts and Testers	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
15-1254: 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, O*Net Online*