

PRIORITY JOBS IN THE BAY REGION

Community College Programs Addressing Workforce Needs and Analyzing Student and Employee Demographics



CENTER OF EXCELLENCE
FOR LABOR MARKET RESEARCH
BAY AREA



POWERED BY



California
Community
Colleges

Table of Contents

Introduction	3
Methodology	4
Priority Jobs in the Bay Region	6
Priority Programs in the Bay Region	8
Equity Gaps in Priority Jobs and Programs	9
Equity Gaps in Priority Jobs	9
Priority Jobs Underrepresented by Females	10
Priority Jobs Underrepresented by Males	12
Priority Jobs Overrepresented by Ages 55+ (Retiring Workforce)	13
Priority Jobs Underrepresented by Diversity	13
Equity Gaps in Priority Programs.....	16
Priority Programs Underrepresented by Females.....	18
Priority Programs Underrepresented by Males	19
Priority Programs Underrepresented by Ages 20 to 24.....	20
Priority Programs Underrepresented by Diversity.....	20
Findings and Recommendations	23
Appendix A: Data Tables	27
Appendix B: Definitions	48

Introduction

In 2023, there were over 4.8 million jobs in the Bay Region,¹ with 38% classified as middle-skill occupations. The Bay Region Center of Excellence for Labor Market Research (COE) defines middle-skill occupations as those typically requiring more than a high school diploma, but less than a bachelor's degree—except in cases where a bachelor's degree is required, but more than one-third of the workforce has less than a bachelor's degree. When evaluating educational requirements for middle-skill occupations, 27% of individuals aged 25 and older in the Bay Region did not have the educational attainment required to fill these occupations in 2023 (i.e., held only a high school diploma or less).²

The 28 California Community Colleges in the Bay Region play a vital role in preparing workers for middle skill occupations. Identifying high-demand and high-wage middle-skill occupations allows these colleges to focus on critical programs that train for these “priority jobs.” The Bay Region COE defines priority jobs as meeting the following criteria: (1) they are middle-skill occupations; (2) they have at least 350 average annual job openings in the Bay Region between 2023 to 2028³; (3) their entry-level hourly earnings are at or above the median living wage of \$26 per hour for a single adult⁴; and (4) they typically require fewer than five years of work experience at entry. Based on 867 occupations in the Standard Occupational Classification⁵ (SOC) system, the Bay Region COE identified the top 50 priority jobs that met these criteria and showed the highest demand (i.e., average annual job openings).

By focusing on training programs aligned with promising employment opportunities, community colleges can direct efforts toward educational programs that address regional workforce needs. For this report, community college programs that train for priority jobs are referred to as priority programs. The Bay Region COE identified 48 Taxonomy of Programs (TOP) codes for community college programs that align with priority jobs. In line with Vision 2030 for California Community Colleges,⁶ which aims to expand access and achieve equitable outcomes for all students, this report also evaluates equity within priority jobs and programs. Addressing equity gaps is crucial to understanding the underrepresentation of minoritized groups in educational programs and their ability to access jobs that support economic mobility.

¹ The 12 counties in the Bay Region include: Alameda County, Contra Costa County, Marin County, Monterey County, Napa County, San Benito County, San Francisco County, San Mateo County, Santa Clara County, Santa Cruz County, Solano County, and Sonoma County. Lightcast 2024.3, QCEW Employees, Non-QCEW Employees, and Self-Employed.

² Educational attainment of high school diploma or less for the Bay Region. Educational Attainment Overview. Lightcast 2024.3, QCEW Employees, Non-QCEW Employees, and Self-Employed.

³ Annual openings represent new job additions to the workforce and include new jobs and replacement jobs that result from retirements and separations.

⁴ The living wage is the hourly rate that an individual in a household must earn to support themselves and/or their family, working full-time, or 2,080 hours per year. The living wage was calculated using the average median wage for the 12 counties in the Bay Region. For living wages by county, see Appendix B: Definitions. The Self-Sufficiency (SS) Standard for California (2024) Center for Women's Welfare, University of Washington. <http://www.selfsufficiencystandard.org/california>.

⁵ The Standard Occupational Classification (SOC) system is a framework used by federal agencies to classify workers into occupational categories for the purpose of collecting, analyzing, and disseminating data. [bls.gov/soc](https://www.bls.gov/soc)

⁶ “Vision 2030: A Roadmap for California Community Colleges,” California Community Colleges Chancellor's Office, September 2023, accessed October 1, 2024, <https://www.cccco.edu/About-Us/Vision-2030>.

Study Purpose

The purpose of this report is to analyze labor market information and postsecondary education data to:

1. Identify priority jobs and programs in the Bay Region; and
2. Evaluate equity gaps within priority jobs and priority programs based on gender, age, and race and ethnicity.

Methodology

The Bay Region COE used a combination of data sources for this report. For priority jobs, the Bay Region COE identified the top 50 priority jobs⁷ that met the criteria and showed the highest demand (i.e., average annual job openings) from the 867 occupations in the Standard Occupational Classification⁸ (SOC) system. Lightcast, a company that collects, analyzes, and summarizes data on the labor market, was used to obtain labor market information on priority jobs in the 12-county Bay Region⁹ between 2023 to 2028, including average annual job openings, entry-level and median wages, and demographics. Please note that all numbers have been rounded to the nearest tenth, and wages to the nearest dollar. To calculate benchmarks for demographics of the overall labor market, the Bay Region COE calculated the representation of gender, age, and race and ethnicity across all jobs in the Bay Region. To evaluate equity gaps within priority jobs, the demographics within each job were compared to the benchmarks of the overall demographics across all jobs. A z-test was conducted to determine the statistical significance for differences between proportions ($p < .05$). It is important to note that statistical significance may vary for identical percentages due to differences in sample sizes. An equity gap for priority jobs was identified when the difference was statistically significant, and when the difference between the benchmark and the demographic group was 10% or more.

⁷ Priority jobs are defined as: middle-skill jobs; occupations that have at least 350 annual openings between 2023 to 2028; occupations that pay entry-level wages at or above the median living wage of \$26 per hour for a single adult; occupations that typically require fewer than five years of work experience at entry.

⁸ The Standard Occupational Classification (SOC) system is used by federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating or disseminating data. The report will use these titles to match those defined by this system. [bls.gov/soc](https://www.bls.gov/soc)

⁹ The 12 counties in the Bay Region include: Alameda County, Contra Costa County, Marin County, Monterey County, Napa County, San Benito County, San Francisco County, San Mateo County, Santa Clara County, Santa Cruz County, Solano County, and Sonoma County.

The California Community Colleges assign TOP codes to their academic programs,¹⁰ which is a system of codes used to categorize and compare programs across the community college system. A TOP-SOC crosswalk created by the COE aligned occupations with TOP codes, and the Bay Region COE identified 48 priority programs that train for priority jobs based on this crosswalk. Data Mart was used to obtain student enrollment and demographic data for “Full-Time Equivalent Students (FTES)” associated with these TOP codes across the 28 Bay Region community colleges. These community colleges include: College of Alameda, Berkeley City College, Cabrillo College, Cañada College, Chabot College, City College of San Francisco, Contra Costa College, De Anza College, Diablo Valley College, Evergreen Valley College, Foothill College, Gavilan College, Hartnell College, Laney College, Las Positas College, Los Medanos College, College of Marin, Merritt College, Mission College, Monterey Peninsula College, Napa Valley College, Ohlone College, San Jose City College, College of San Mateo, Santa Rosa Junior College, Skyline College, Solano College, and West Valley College. The California Community Colleges Curriculum Inventory (COCI) was used to verify whether priority programs were active as of October 2024.¹¹

The overall demographics across all Bay Region community colleges were used as benchmarks for comparison. To evaluate equity within each academic program, the demographics within each program were compared to the benchmarks of the overall demographics. A z-test was conducted to determine the statistical significance for differences between proportions ($p < .05$). It is important to note that statistical significance may vary for identical percentages due to differences in sample sizes. An equity gap for priority programs was identified when the difference was statistically significant, and when the difference between the benchmark and the demographic group was 10% or more. Key definitions used in the report are provided in the Appendix B: Definitions.

¹⁰ See Appendix B: Definitions.

¹¹ Data about active programs was pulled from Chancellor’s Office Curriculum Inventory (COCI) 2.0. Only active programs listed were included as part of this report, but please note that the status of these programs may change. <https://coci2.ccctechcenter.org/programs>.

Priority Jobs in the Bay Region

Table 1 lists the 50 SOC codes and occupational titles for occupations that met the criteria for a priority job. In other words, these priority jobs are defined as middle-skill occupations; have at least 350 average annual job openings in the Bay Region between 2023 to 2028¹²; entry-level pay is at or above the median living wage of \$26 per hour for a single adult¹³; and typically require fewer than five years of work experience at entry.

Table 1. SOC Codes and Occupational Titles for Priority Jobs in the Bay Region

SOC Code and Occupational Title		SOC Code and Occupational Title	
11-3012	Administrative Services Managers	17-3011	Architectural and Civil Drafters
11-3013	Facilities Managers	17-3023	Electrical and Electronic Engineering Technologists and Technicians
11-9021	Construction Managers	19-4099	Life, Physical, and Social Science Technicians, All Other
11-9199	Managers, All Other	19-5011	Occupational Health and Safety Specialists
13-1028	Buyers and Purchasing Agents	23-2011	Paralegals and Legal Assistants
13-1051	Cost Estimators	29-1141	Registered Nurses
13-1071	Human Resources Specialists	29-1292	Dental Hygienists
13-1081	Logisticians	29-2018	Clinical Laboratory Technologists and Technicians
13-1151	Training and Development Specialists	29-2034	Radiologic Technologists and Technicians
13-2072	Loan Officers	29-2061	Licensed Practical and Licensed Vocational Nurses
15-1212	Information Security Analysts	29-2099	Health Technologists and Technicians, All Other
15-1231	Computer Network Support Specialists	33-2011	Firefighters
15-1232	Computer User Support Specialists	33-3012	Correctional Officers and Jailers
15-1244	Network and Computer Systems Administrators	33-3051	Police and Sheriff's Patrol Officers
15-1254	Web Developers	41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel
15-1255	Web and Digital Interface Designers	41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products

¹² See Appendix B: Definitions.

¹³ The living wage was calculated using the average median wage for the 12 counties in the Bay Region. The Self-Sufficiency (SS) Standard for California (2024) Center for Women's Welfare, University of Washington. <http://www.selfsufficiencystandard.org/california>.

SOC Code and Occupational Title		SOC Code and Occupational Title	
15-1299	Computer Occupations, All Other	41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products
41-9021	Real Estate Brokers	47-2152	Plumbers, Pipefitters, and Steamfitters
43-1011	First-Line Supervisors of Office and Administrative Support Workers	49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers
43-3051	Payroll and Timekeeping Clerks	49-2022	Telecommunications Equipment Installers and Repairers, Except Line Installers
43-4061	Eligibility Interviewers, Government Programs	49-3031	Bus and Truck Mechanics and Diesel Engine Specialists
43-6011	Executive Secretaries and Executive Administrative Assistants	49-3042	Mobile Heavy Equipment Mechanics, Except Engines
43-6012	Legal Secretaries and Administrative Assistants	49-9041	Industrial Machinery Mechanics
47-2073	Operating Engineers and Other Construction Equipment Operators	51-1011	First-Line Supervisors of Production and Operating Workers
47-2111	Electricians	53-2031	Flight Attendants

In terms of labor market demand, these priority jobs are projected to have 62,720 average annual job openings between 2023 and 2028 in the Bay Region, which represents 10% of all projected average annual job openings (Exhibit 1). Appendix A: Table 18 includes more detailed labor market information, such as projected average annual job openings, entry-level and median wages, and typical entry-level education for these occupations. Appendix A: Table 19 offers additional information about sector classification, 2023 and 2028 jobs, and projected job change between 2023 and 2028.

Exhibit 1. Projected Average Annual Job Openings in the Bay Region (2023-2028)

598,510

**Projected Average Annual Job Openings
for All Jobs in the Bay Region (2023-2028)**

62,720

**Projected Average Annual Job Openings
for Priority Jobs in the Bay Region (2023-2028)**

Source: Lightcast 2024.3; QCEW, Non-QCEW, Self-Employed.

Priority Programs in the Bay Region

Priority programs are TOP codes related to at least one SOC code in the priority jobs list (Table 2). In other words, these are the programs students are required to complete to qualify for priority jobs. There are 48 TOP codes or priority programs offered across the Bay Region's 28 community colleges.

Table 2. TOP Codes and Program Titles for Priority Programs in the Bay Region

TOP Code and Program Title		TOP Code and Program Title	
0430.00	Biotechnology and Biomedical Technology	0934.40	Electrical Systems and Power Transmission
0501.00	Business and Commerce, General	0945.00	Industrial Systems Technology and Maintenance
0502.00	Accounting	0947.00	Diesel Technology
0504.00	Banking and Finance	0947.20	Heavy Equipment Maintenance
0505.00	Business Administration	0947.30	Heavy Equipment Operation
0506.00	Business Management	0952.20	Electrical
0506.30	Management Development and Supervision	0952.30	Plumbing, Pipefitting and Steamfitting
0509.20	Purchasing	0953.00	Drafting Technology
0509.40	Sales and Salesmanship	0955.00	Laboratory Science Technology
0510.00	Logistics and Materials Transportation	0956.70	Industrial and Occupational Safety and Health
0511.00	Real Estate	0957.00	Civil and Construction Management Technology
0514.00	Office Technology/Office Computer Applications	1212.00	Electro-Neurodiagnostic Technology
0514.10	Legal Office Technology	1225.00	Radiologic Technology
0514.40	Office Management	1230.10	Registered Nursing
0614.30	Website Design and Development	1230.20	Licensed Vocational Nursing
0701.00	Information Technology, General	1240.20	Dental Hygienist
0702.00	Computer Information Systems	1402.00	Paralegal
0708.00	Computer Infrastructure and Support	2101.00	Community Services, General
0708.10	Computer Networking	2105.00	Administration of Justice
0708.20	Computer Support	2105.10	Corrections
0860.00	Educational Technology	2105.50	Police Academy
0924.00	Engineering Technology, General	2133.00	Fire Technology
0934.00	Electronics and Electric Technology	2133.50	Fire Academy
0934.30	Telecommunications Technology	3020.40	Flight Attendant

Equity Gaps in Priority Jobs and Programs

Equity Gaps in Priority Jobs

In 2023, there were 4,818,495 jobs in the Bay Region. Table 3 presents the demographic breakdown of jobs by gender, age, and race/ethnicity. An important objective of this report was to determine whether the demographic representation within priority jobs aligned with the demographics across all jobs in the Bay Region.

Table 3. Demographic Breakdown of Overall Labor Market in the Bay Region (2023)

	Jobs in the Bay Region (2023)	
	Number of Jobs	% of Jobs
Total	4,818,495	100%
Gender		
Male	2,485,224	52%
Female	2,333,271	48%
Race/Ethnicity		
White	1,863,247	39%
Hispanic or Latino	1,319,648	27%
Asian	1,162,770	24%
Black or African American	286,796	6%
Two or More Races	147,235	3%
Native Hawaiian or Other Pacific Islander	25,138	1%
American Indian or Alaska Native	13,661	<1%
<i>Diversity¹⁴</i>	<i>2,955,248</i>	<i>61%</i>
Age		
Under 18	78,601	2%
19 to 21	155,865	3%
22 to 24	208,945	4%
25 to 34	1,036,945	22%
35 to 44	1,119,074	23%
45 to 54	1,006,290	21%
55 to 64	810,272	17%
Over 65	402,502	8%

Source: Lightcast 2024.4, QCEW Employees, Non-QCEW Employees, and Self-Employed. May not be equal to the total or 100% due to rounding

¹⁴ Lightcast created a diversity category that includes: American Indian or Alaska Native, Asian, Black or African American, Hispanic or Latino, Native Hawaiian or Pacific Islander, and two or more races.

The Bay Area COE compared the percentages in Table 3 with the representation of these demographics within each priority job. Table 4 summarizes the number of jobs with an underrepresentation or overrepresentation of a demographic group. Out of 50 occupations, results showed that there was an underrepresentation¹⁵ of females in 29 occupations, males in 15 occupations, and a lack of diversity¹⁶ in 18 occupations. This suggests that within these jobs, there is a significant underrepresentation of these demographic groups compared to their representation across all jobs in the Bay Region. To identify occupations with a retiring workforce, the analysis focused on the overrepresentation of workers ages 55 and older, revealing that six occupations had a significant overrepresentation of this age group.

Table 4. Equity Gaps in Priority Jobs by Demographics

Demographic Group	# of Jobs with Significant Underrepresentation	# Jobs with Significant Overrepresentation
Females	29 Occupations	
Males	15 Occupations	
Age (55+)		6 Occupations
Race/Ethnicity (Diversity)	18 Occupations	

Priority Jobs Underrepresented by Females

Female workers made up 48% of the workforce and equity analyses showed that they were underrepresented in 29 occupations (Table 5). The occupations with the lowest representation of females were concentrated in the Advanced Transportation & Logistics sector—such as “Mobile Heavy Equipment Mechanics, Except Engines” and “Bus and Truck Mechanics and Diesel Engine Specialists”—and the Energy, Construction & Utilities sector, including “Plumbers, Pipefitters, and Steamfitters” and “Electricians.”

Table 5. Priority Jobs Underrepresented by Females

SOC	SOC Description	% Female
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	1%
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	2%
47-2152	Plumbers, Pipefitters, and Steamfitters	2%
47-2111	Electricians	3%

¹⁵ An equity gap was identified when the difference was statistically significant and when the equity gap between the benchmark and the demographic group was 10% or more. Statistical significance was determined using a z-test at $p < .05$.

¹⁶ Diversity was calculated using Lightcast’s category, which includes: American Indian or Alaska Native, Asian, Black or African American, Hispanic or Latino, Native Hawaiian or Pacific Islander, and two or more races.

SOC	SOC Description	% Female
47-2073	Operating Engineers and Other Construction Equipment Operators	4%
49-9041	Industrial Machinery Mechanics	4%
33-2011	Firefighters	6%
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	7%
49-2022	Telecommunications Equipment Installers and Repairers, Except Line Installers	10%
11-9021	Construction Managers	10%
17-3023	Electrical and Electronic Engineering Technologists and Technicians	18%
33-3051	Police and Sheriff's Patrol Officers	18%
15-1212	Information Security Analysts	20%
13-1051	Cost Estimators	20%
15-1244	Network and Computer Systems Administrators	20%
51-1011	First-Line Supervisors of Production and Operating Workers	25%
17-3011	Architectural and Civil Drafters	28%
15-1231	Computer Network Support Specialists	28%
15-1232	Computer User Support Specialists	28%
15-1299	Computer Occupations, All Other	29%
11-3013	Facilities Managers	31%
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	31%
33-3012	Correctional Officers and Jailers	33%
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	33%
15-1254	Web Developers	35%
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	36%
11-9199	Managers, All Other	37%
13-1081	Logisticians	38%
15-1255	Web and Digital Interface Designers	38%

Source: Lightcast 2024.4, QCEW Employees, Non-QCEW Employees, and Self-Employed.

Priority Jobs Underrepresented by Males

Male workers made up 52% of the workforce and equity analyses showed they were underrepresented in 15 occupations (Table 6). The occupations with the lowest representation of males were primarily in the Business & Entrepreneurship sector—such as “Legal Secretaries and Administrative Assistants,” “Executive Secretaries and Executive Administrative Assistants,” and “Payroll and Timekeeping Clerks”—and the Health sector, including “Dental Hygienists” and “Registered Nurses.”

Table 6. Priority Jobs Underrepresented by Males

SOC	SOC Description	% Male
43-6012	Legal Secretaries and Administrative Assistants	3%
43-6011	Executive Secretaries and Executive Administrative Assistants	4%
29-1292	Dental Hygienists	6%
43-3051	Payroll and Timekeeping Clerks	11%
29-1141	Registered Nurses	13%
29-2061	Licensed Practical and Licensed Vocational Nurses	13%
23-2011	Paralegals and Legal Assistants	14%
43-4061	Eligibility Interviewers, Government Programs	18%
13-1071	Human Resources Specialists	26%
53-2031	Flight Attendants	29%
43-1011	First-Line Supervisors of Office and Administrative Support Workers	31%
29-2018	Clinical Laboratory Technologists and Technicians	32%
29-2034	Radiologic Technologists and Technicians	36%
29-2099	Health Technologists and Technicians, All Other	40%
13-1151	Training and Development Specialists	41%

Source: Lightcast 2024.4, QCEW Employees, Non-QCEW Employees, and Self-Employed.

Priority Jobs Overrepresented by Ages 55+ (Retiring Workforce)

Workers ages 55 and older, or those nearing retirement age, made up 25% of the workforce and equity analyses showed they were overrepresented in six occupations (Table 7). The occupations with the highest representation of this age group were in the Business & Entrepreneurship sector—such as “Real Estate Brokers,” “Legal Secretaries and Administrative Assistants,” and “Cost Estimators.”

Table 7. Priority Jobs Overrepresented by Ages 55+

SOC	SOC Description	% Age 55+
41-9021	Real Estate Brokers	45%
43-6012	Legal Secretaries and Administrative Assistants	43%
13-1051	Cost Estimators	40%
53-2031	Flight Attendants	39%
11-3013	Facilities Managers	37%
17-3023	Electrical and Electronic Engineering Technologists and Technicians	35%

Source: Lightcast 2024.4, QCEW Employees, Non-QCEW Employees, and Self-Employed.

Priority Jobs Underrepresented by Diversity

Workers from diverse racial and ethnic backgrounds accounted for 61% of the workforce and equity analyses showed that they were underrepresented in 18 occupations (Table 8). The occupations with the lowest representation of these workers were primarily in the Business and Entrepreneurship sector, including “Cost Estimators,” “Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products,” “Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products,” “Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel,” and “Real Estate Brokers.”

Table 8. Priority Jobs Underrepresented by Diversity

SOC	SOC Description	% Diversity
13-1051	Cost Estimators	38%
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	41%
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	43%
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	43%
11-9021	Construction Managers	44%

SOC	SOC Description	% Diversity
41-9021	Real Estate Brokers	44%
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	45%
11-3013	Facilities Managers	46%
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	46%
47-2073	Operating Engineers and Other Construction Equipment Operators	48%
43-6011	Executive Secretaries and Executive Administrative Assistants	49%
43-6012	Legal Secretaries and Administrative Assistants	49%
33-2011	Firefighters	50%
11-3012	Administrative Services Managers	50%
17-3011	Architectural and Civil Drafters	50%
13-1151	Training and Development Specialists	50%
11-9199	Managers, All Other	51%
13-1028	Buyers and Purchasing Agents	51%

Source: Lightcast 2024.4, QCEW Employees, Non-QCEW Employees, and Self-Employed.

Across all jobs in the Bay Region, 39% identified as White, 27% as Hispanic or Latino, 24% as Asian, 6% as Black or African American, 1% as Native Hawaiian or Other Pacific Islander, and less than 1% as American Indian or Alaska Native. Table 9 shows the top five occupations with the lowest representation within each race or ethnic group. Appendix A: Table 21 through Table 26 summarize all percentages by demographic group.

Table 9. Priority Jobs Underrepresented by Race/Ethnicity

SOC	SOC Description	%
White		%
43-4061	Eligibility Interviewers, Government Programs	20%
29-2099	Health Technologists and Technicians, All Other	25%
29-2018	Clinical Laboratory Technologists and Technicians	29%
29-2061	Licensed Practical and Licensed Vocational Nurses	31%
33-3012	Correctional Officers and Jailers	34%
Hispanic or Latino		%
15-1254	Web Developers	11%
15-1255	Web and Digital Interface Designers	12%

SOC	SOC Description	%
15-1212	Information Security Analysts	12%
53-2031	Flight Attendants	13%
15-1299	Computer Occupations, All Other	13%
Asian		%
47-2073	Operating Engineers and Other Construction Equipment Operators	2%
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	5%
33-3012	Correctional Officers and Jailers	5%
47-2152	Plumbers, Pipefitters, and Steamfitters	5%
33-2011	Firefighters	6%
Black or African American		%
13-1051	Cost Estimators	1%
11-9021	Construction Managers	3%
29-1292	Dental Hygienists	3%
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	3%
17-3011	Architectural and Civil Drafters	3%
Native Hawaiian or Other Pacific Islander		%
15-1255	Web and Digital Interface Designers	0.2%
15-1254	Web Developers	0.2%
11-9021	Construction Managers	0.2%
13-1051	Cost Estimators	0.3%
11-9199	Managers, All Other	0.3%
American Indian or Alaska Native		%
41-9021	Real Estate Brokers	0.1%
13-1081	Logisticians	0.1%
53-2031	Flight Attendants	0.1%
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	0.1%
15-1255	Web and Digital Interface Designers	0.2%

Source: Lightcast 2024.4, QCEW Employees, Non-QCEW Employees, and Self-Employed.

Equity Gaps in Priority Programs

A key objective of this report was to identify equity gaps within priority programs using demographic percentages for gender, age, and race/ethnicity of full-time equivalent student (FTES) enrollments as benchmarks for overall enrollments across the 28 community colleges in the Bay Region (Table 10). The colleges include Alameda, Berkeley City, Cabrillo, Cañada, Chabot, Contra Costa, De Anza, Diablo Valley, Evergreen Valley, Foothill, Gavilan, Hartnell, Laney, Las Positas, Los Medanos, Marin, Merritt, Mission, Monterey, Napa, Ohlone, San Francisco, San Jose City, San Mateo, Santa Rosa, Skyline, Solano, and West Valley. FTES is a metric in education that represents the workload of full-time students, including part-time enrollments. It is calculated by dividing total student credit hours by the credit hours defined as “full-time.” In California Community Colleges, one FTES equals 525 hours of instruction (15 hours per week × 35 weeks) and can be generated by a single full-time student or multiple part-time students.

Table 10 highlights 11 TOP codes that did not report any FTES enrollments or active programs as of October 2024,¹⁷ or reported fewer than 10 FTES enrolled in the program.¹⁸ These findings suggest there may be a greater number of projected average annual job openings compared to degrees conferred by educational institutions. This information can assist community colleges in identifying where the development of new programs may be needed to create opportunities for these priority jobs, some of which show equity gaps. Please note that this is not a supply gap analysis as it is focused on enrollments and not degrees awarded.¹⁹

Table 10. Priority Programs with Fewer than 10 FTES Enrolled (PY 2022-23)

TOP	Program Title	Total FTES Enrollment
0509.20	Purchasing	0
2101.00	Community Services, General	0
0947.30	Heavy Equipment Operation	0
1212.00	Electro-Neurodiagnostic Technology	0
3020.40	Flight Attendant	0
0934.30	Telecommunications Technology	1
0514.40	Office Management	2
0510.00	Logistics and Materials Transportation	3
0514.10	Legal Office Technology	3
0955.00	Laboratory Science Technology	6
0956.70	Industrial and Occupational Safety and Health	8

Source: Full-Time Equivalent Students Enrollment, Data Mart (PY 2022-23)

¹⁷ Active or approved program data was pulled from Chancellor’s Office Curriculum Inventory (COCI) 2.0. As of October 2024, there were no active or approved programs for five programs (Table 11). Please note that the status of these programs may change. <https://coci2.ccctechcenter.org/programs>.

¹⁸ Enrollments for the 28 community colleges in the Bay Region for Program Year 2022-23, California Community Colleges Chancellor’s Office Management Information Systems (MIS) Data Mart. <https://datamart.cccc.edu>.

¹⁹ Community colleges proposing new programs or modifying existing programs should refer to the Program Recommendation Process.

There were 205,265 FTES enrolled in Bay Region community colleges during the program year 2022-23 (Table 11). Fifty-one percent identified as female and 46% as male. For race/ethnicity, 38% identified as Hispanic or Latino, 21% as White, 19% as Asian, and 6% as Black or African American. More than half of students were under 24 years old (66%), with 36% ages 19 or younger and 30% ages 20 to 24.

Table 11. Enrollment by Demographics for Bay Region Community Colleges (PY 2022-23)

	Program Year (PY) 2022-23	
	Total FTES Enrolled	% FTES Enrolled
Total	205,265	100%
Gender²⁰		
Female	104,962	51%
Male	93,825	46%
Non-Binary	1,182	1%
Unknown	5,295	3%
Race/Ethnicity		
Hispanic or Latino	77,863	38%
White	43,562	21%
Asian	39,431	19%
Multi-Ethnicity	12,749	6%
Black or African American	11,917	6%
Filipino	9,158	4%
Unknown	8,812	4%
Pacific Islander	1,353	1%
American Indian or Alaska Native	418	<1%
<i>Diversity²¹</i>	<i>161,703</i>	<i>79%</i>
Age		
19 or less	73,708	36%
20 to 24	61,798	30%
25 to 29	22,166	11%
30 to 34	14,443	7%
35 to 39	10,275	5%
40 to 49	11,717	6%
Over 50	11,144	5%
Unknown	14	<1%

Source: Full-Time Equivalent Students Enrollment, Data Mart (PY 2022-23). May not be equal to the total or 100% due to rounding

²⁰ Due to limited student enrollment numbers by non-binary and unknown, comparisons were only conducted for male and female categories.

²¹ Diversity category included: Hispanic or Latino, Asian, Multi-Ethnicity, Black or African American, Filipino, Unknown, Pacific Islander, and American Indian or Alaska Native.

The Bay Area COE compared the demographic percentages in Table 11 with the representation of demographics within each priority program. Table 12 summarizes the priority programs with an underrepresentation of each demographic group. Out of 48 priority programs, results showed an underrepresentation²² of females in 18 programs, males in six programs, students ages 20 to 24 in nine programs, and lack of diversity²³ in six programs.

Table 12. Equity Gaps in Priority Programs by Demographics

Demographic Group	# of Programs with Significant Underrepresentation
Females	18 Programs
Males	6 Programs
Ages 20 to 24	9 Programs
Race/Ethnicity (Diversity)	6 Programs

Priority Programs Underrepresented by Females

Across all community college enrollments in Bay Region community colleges, females represented 51% of students enrolled and were underrepresented in 18 priority programs (Table 13). Programs with the lowest representation of females were in the Energy, Construction & Utilities sector, such as Plumbing, Pipefitting, and Steamfitting (TOP 0952.30) and Electrical (TOP 0952.20), as well as in the Advanced Transportation & Logistics sector, including Diesel Technology (TOP 0947.00).

Table 13. Priority Programs Underrepresented by Females (PY 2022-23)

TOP	Program Title	Total FTES Enrolled	% Female
0952.30	Plumbing, Pipefitting and Steamfitting	564	3%
0947.00	Diesel Technology	136	5%
0952.20	Electrical	467	7%
0945.00	Industrial Systems Technology and Maintenance	76	10%
0947.20	Heavy Equipment Maintenance	18	10%
0934.40	Electrical Systems and Power Transmission	143	10%
2133.50	Fire Academy	463	11%
0934.00	Electronics and Electric Technology	403	11%
2133.00	Fire Technology	1,234	11%

²² An equity gap was identified when the difference was statistically significant and when the equity gap between the benchmark and the demographic group was 10% or more. Statistical significance was determined using a z-test at $p < .05$.

²³ Diversity was calculated using Lightcast's category, which includes: American Indian or Alaska Native, Asian, Black or African American, Hispanic or Latino, Native Hawaiian or Pacific Islander, and two or more races.

TOP	Program Title	Total FTES Enrolled	% Female
0924.00	Engineering Technology, General (requires Trigonometry)	37	19%
2105.50	Police Academy	2,400	20%
0957.00	Civil and Construction Management Technology	279	20%
0953.00	Drafting Technology	272	23%
0708.00	Computer Infrastructure and Support	354	23%
0708.10	Computer Networking	607	23%
0708.20	Computer Support	76	26%
0701.00	Information Technology, General	1,246	39%
2105.10	Corrections	86	39%

Source: Full-Time Equivalent Students Enrollment, Data Mart (PY 2022-23)

Priority Programs Underrepresented by Males

Across all enrollments in Bay Region community colleges, males represented 46% of students enrolled and were underrepresented in six priority programs (Table 14). Programs with the lowest representation of males were in the Health sector, including Dental Hygienist (TOP 1240.20), Licensed Vocational Nursing (TOP 1230.20), and Registered Nursing (TOP 1230.10).

Table 14. Priority Programs Underrepresented by Males (PY 2022-23)

TOP	Program Title	Total FTES Enrolled	% Male
1240.20	Dental Hygienist	362	13%
1230.20	Licensed Vocational Nursing	482	16%
1230.10	Registered Nursing	2,187	21%
1402.00	Paralegal	415	23%
1225.00	Radiologic Technology	673	33%
0514.00	Office Technology/Office Computer Applications	754	36%

Source: Full-Time Equivalent Students Enrollment, Data Mart (PY 2022-23)

Priority Programs Underrepresented by Ages 20 to 24

Across all enrollments in Bay Region community colleges, students who were 20 to 24 years old represented 30% of students enrolled and were underrepresented in nine priority programs (Table 15). Programs with the lowest representation of this age group were in the Education & Human Development sector, specifically Educational Technology (TOP 0860.00); the Health sector, Radiologic Technology (TOP 1225.00); and the Business & Entrepreneurship sector, including Management Development and Supervision (TOP 0506.30) and Real Estate (TOP 0511.00).

Table 15. Priority Programs Underrepresented by Ages 20 to 24 (PY 2022-23)

TOP	Program Title	Total FTES Enrolled	% 20 to 24
0860.00	Educational Technology	158	10%
1225.00	Radiologic Technology	673	15%
0506.30	Management Development and Supervision	128	15%
0430.00	Biotechnology and Biomedical Technology	495	16%
0952.30	Plumbing, Pipefitting and Steamfitting	564	19%
0511.00	Real Estate	780	19%
1230.10	Registered Nursing	2,187	20%
1402.00	Paralegal	415	20%
0952.20	Electrical	467	20%

Source: Full-Time Equivalent Students Enrollment, Data Mart (PY 2022-23)

Priority Programs Underrepresented by Diversity

Across all enrollments in Bay Region community colleges, 79% of students are from diverse racial and ethnic backgrounds and these students were underrepresentation in six priority programs (Table 16). Programs with the lowest representation of racial/ethnic diversity were in various sectors, including Advanced Transportation & Logistics, such as Heavy Equipment Maintenance (TOP 0947.20), and Public Safety, including Fire Technology (TOP 2133.00), Fire Academy (TOP 2133.50), and Police Academy (TOP 2105.50).

Table 16. Priority Programs Underrepresented by Diversity (PY 2022-23)

TOP	Program Title	Total FTES Enrolled	% Diversity
0947.20	Heavy Equipment Maintenance	18	58%
2133.00	Fire Technology	1,234	58%

TOP	Program Title	Total FTES Enrolled	% Diversity
2133.50	Fire Academy	463	62%
0860.00	Educational Technology	158	64%
0952.30	Plumbing, Pipefitting and Steamfitting	564	67%
0952.20	Electrical	467	68%

Source: Full-Time Equivalent Students Enrollment, Data Mart (PY 2022-23)

Across all community college enrollments in the Bay Region, 38% identified as Hispanic or Latino, 21% as White, 19% as Asian, 6% as Black or African American, 4% as Filipino, 1% as Pacific Islander, and less than 1% as American Indian or Alaska Native. Table 17 below shows the top five occupations with the lowest representation of each race/ethnic group. Appendix A: Table 29 through Appendix A: Table 35 summarize all percentages by demographic group.

Table 17. Top Priority Programs Underrepresented by Race/Ethnicity (PY 2022-23)

SOC	SOC Description	Total FTES Enrolled	%
White			
1230.20	Licensed Vocational Nursing	482	9%
2105.10	Corrections	86	10%
0947.00	Diesel Technology	136	10%
0701.00	Information Technology, General	1,246	15%
0702.00	Computer Information Systems	680	17%
Hispanic or Latino			
0860.00	Educational Technology	158	21%
0430.00	Biotechnology and Biomedical Technology	495	27%
0708.10	Computer Networking	607	29%
0702.00	Computer Information Systems	680	31%
0708.00	Computer Infrastructure and Support	354	31%
Asian			
2105.10	Corrections	86	3%
2133.50	Fire Academy	463	4%
0947.00	Diesel Technology	136	4%
0952.30	Plumbing, Pipefitting and Steamfitting	564	5%

SOC	SOC Description	Total FTES Enrolled	%
0957.00	Civil and Construction Management Technology	279	5%
Filipino			
0947.00	Diesel Technology	136	0%
0957.00	Civil and Construction Management Technology	279	1%
0952.30	Plumbing, Pipefitting and Steamfitting	564	2%
2133.00	Fire Technology	1,234	2%
2105.00	Administration of Justice	1,887	2%
Black or African American			
1240.20	Dental Hygienist	362	1%
0947.00	Diesel Technology	136	2%
2133.00	Fire Technology	1,234	4%
0502.00	Accounting	4,077	5%
1230.10	Registered Nursing	2,187	5%
Pacific Islander			
1230.10	Registered Nursing	2,187	<1%
0701.00	Information Technology, General	1,246	<1%
1225.00	Radiologic Technology	673	<1%
0430.00	Biotechnology and Biomedical Technology	495	<1%
1240.20	Dental Hygienist	362	0%
American Indian or Alaska Native			
1225.00	Radiologic Technology	673	0%
0430.00	Biotechnology and Biomedical Technology	495	<1%
1230.20	Licensed Vocational Nursing	482	0%
1240.20	Dental Hygienist	362	<1%
0614.30	Website Design and Development	320	<1%

Source: Full-Time Equivalent Students Enrollment, Data Mart (PY 2022-23)

Findings and Recommendations

The purpose of this report was to identify priority jobs and programs, and to evaluate equity gaps by analyzing demographic data from the labor market and postsecondary education in the Bay Region. This section highlights key findings from these analyses and provides recommendations for the community colleges.

Bay Region Community Colleges should work with employers to diversify employment in priority jobs and increase underrepresented groups' interest in these positions.

Analyses showed equity gaps of at least one demographic group for all priority jobs (Appendix A: Table 20). Among females, equity gaps were observed in 29 occupations across a variety of different sectors, with the most notable gaps in the Advanced Transportation & Logistics sector and included the following occupations: “Mobile Heavy Equipment Mechanics, Except Engines,” “Bus and Truck Mechanics and Diesel Engine Specialists” and “First-Line Supervisors of Mechanics, Installers, and Repairers.” According to a report by the United States Department of Transportation, this gender inequity limits much needed talent in the sector, and there is a need to improve strategies to recruit and retain women in transportation, connect them with mentors, and informing female students about career possibilities.²⁴ Despite strides in increasing the representation of females in this sector through some companies setting gender equality targets, it is important to create an environment of inclusion, reduce barriers for women, increase leadership opportunities, and flexible working policies.²⁵ Results also showed that females were significantly underrepresented in numerous occupations in the ICT / Digital Media sector, including “Information Security Analysts, “Network and Computer Systems Administrators,” and “Computer Network Support Specialists.”

To address these disparities, the National Center for Women & Information Technology (NCWIT) supports students' education in computing by addressing factors such as unconscious bias, stereotype threat, and retention challenges.²⁶ Additionally, the *BayICT Partnership*²⁷ aims to strengthen industry and community colleges in ICT by supporting students through work-based learning, connecting faculty with industry experts, and providing employers with a talent pipeline. The *BayICT Partnership* has promoted various efforts in the Bay Region, including the NETLAB+ that was funded by the Strong Workforce Program to establish a shared ICT lab facility for Bay Area community college students who needed hands-on experience in ICT.²⁸ Overall, these insights can help employers and community colleges identify where to focus their efforts in addressing gender disparities that are most evident.

²⁴ <https://highways.dot.gov/public-roads/marchapril-2010/women-transportation>.

²⁵ Reynolds, Samantha. "Women in Supply Chain Leadership: Barriers and Opportunities." June 2024. doi: 10.20944/preprints202406.0499.v1

²⁶ <https://ncwit.org/>.

²⁷ BayICT Partnership, <https://bacc.net/bayict/about/#mission>.

²⁸ NETLAB+, <https://netlab.bayict.cabrillo.edu/>

Results also showed that males were significantly underrepresented in 15 occupations, with most occupations in administrative roles in the Business & Entrepreneurship sector, including “Legal Secretaries and Administrative Assistants,” “Executive Secretaries and Executive Administrative Assistants,” and “Payroll and Timekeeping Clerks.” These roles offer significant benefits for men, such as opportunities to build professional networks, develop a mix of technical and interpersonal skills, and engage in cross-industry collaboration, all of which can be used to help attract them to these roles.²⁹ Males were also underrepresented in various roles in the Health sector, such as “Dental Hygienists,” “Registered Nurses,” and “Licensed Practical and Licensed Vocational Nurses.” While more men are entering healthcare and nursing, boosting representation and recruitment can help challenge beliefs that these are female-dominant roles.³⁰ Community colleges and employers can use these findings to shape strategies aimed at attracting and recruiting them into these professions.

This report also highlights six priority jobs with significant overrepresentation of workers nearing retirement age (i.e., defined as those over 55 years old). Understanding the workforce composition in these occupations is critical for developing strategies to fill these positions in the near future. The sector facing a significant number of occupations with a large retiring workforce were in the Business & Entrepreneurship sector, including “Real Estate Brokers,” “Legal Secretaries and Administrative Assistants,” and “Cost Estimators.” In line with these findings, a recent article highlighted that workers in the real estate industry have among the highest median ages, with many in leadership roles already over the age of 65.³¹ Addressing and preparing for this is crucial, as many experts may leave the industry without the opportunity for new talent to extract valuable knowledge about their industry. Continued efforts across the region will be key in preparing for workforce demand in the future and training a skilled workforce to fill these roles.

This report assessed race/ethnicity across jobs to evaluate the underrepresentation of diversity, and results showed underrepresentation across 18 occupations. Numerous occupations were in the Business & Entrepreneurship sector, and occupations with the greatest underrepresentation included “Cost Estimators,” “Sales Representatives,” “Wholesale and Manufacturing, Technical and Scientific Products,” “Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products,” “Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel,” and “Real Estate Brokers.” According to the U.S. Department of Commerce, investing in minority-owned firms and Minority Business Enterprises (MBEs) is critical, and “By 2044, the Nation’s prosperity will rely even more on minorities, the fastest growing segment of the population.”³² Community colleges can play a crucial

²⁹ “The Rise of the Male Personal Assistant (PA),” Institute of Executive Assistants and Administrators, May 2017, accessed October 1, 2024, <https://executive-assistants.org/the-rise-of-the-male-pa/>.

³⁰ “Male Nurses in Healthcare: Breaking Stereotypes and Expanding Horizons,” Relias, July 2024, accessed October 1, 2024, <https://www.nurse.com/blog/growing-presence-male-nurses-healthcare-nsp>.

³¹ “The US Real Estate Industry Workforce Faces A Retirement Cliff,” Deloitte Center for Financial Services, May 2024, accessed October 1, 2024, <https://www2.deloitte.com/us/en/insights/industry/financial-services/financial-services-industry-predictions/2024/developing-the-next-generation-of-real-estate-leadership.html>.

³² <https://www.mbda.gov/>.

role not only in providing training in business operations and growth, but also in connecting students to regional support systems promoting minority entrepreneurship, including the Renaissance Entrepreneurship Center,³³ the Inclusivity Project,³⁴ and the Oakland Private Industry Council,³⁵ to name a few. By leveraging these resources, community colleges can help bridge diversity gaps and foster a more inclusive entrepreneurial ecosystem in the Bay Region.

Bay Region Community Colleges should develop targeted recruitment and retention strategies for priority programs with significantly underrepresented groups.

The Bay Region COE identified 48 TOP codes for community college programs that train for one or more priority jobs. Out of these TOP codes, 11 did not have an existing program or had a limited number of enrolled students (i.e., fewer than 10 FTES) during the program year 2022-23 (Appendix A: Table 28 lists the community colleges with FTES enrolled for each program). Given that all priority jobs in this report have at least 350 average annual job openings in the Bay Region, this could suggest that these are programs with potential opportunities for program development. Please note that this is not a supply gap analysis as it is focused on enrollments and not degrees awarded (i.e., supply).

This report highlights equity gaps in priority programs across gender, age, and race/ethnicity, and the majority of programs show equity gaps in at least one demographic group (Appendix A: Table 27). Regarding gender, females represent 51% of student enrollments across all community colleges in the Bay Region and these findings show they are underrepresented in 18 priority programs. These findings align with equity gaps observed in priority jobs as well, reflecting the link between training and employment. For example, females represented less than 5% of students enrolled in Plumbing, Pipefitting and Steamfitting (TOP 0952.30), and only 2% of workers in the “Plumbers, Pipefitters, and Steamfitters” occupation. Males, on the other hand, represented 46% of enrolled students and were underrepresented in six priority programs. Similar to priority jobs, the majority of programs in which they were underrepresented were in the Health sector, where they accounted for 13% to 21% of students enrolled in Dental Hygienist (TOP 1240.20), Licensed Vocational Nursing (TOP 1230.20), and Registered Nursing (TOP 1230.10) programs. In terms of age, this report focused on 20- to 24-year-olds as these are adult learners pursuing educational goals, working adults looking to further their careers, or early career individuals seeking to upskill, for example. This age group was underrepresented in nine priority programs across various sectors, but represented less than 16% of students enrolled in Educational Technology (TOP 0860.00), Radiologic Technology (TOP 1225.00), and Management Development and Supervision (TOP 0506.30).

³³ <https://www.rencenter.org/>.

³⁴ <https://www.eastbaysbdc.org/services/regional/initiatives/inclusivity-project/>.

³⁵ <https://www.oaklandpic.org/>.

In terms of diversity, 79% of students enrolled in community colleges are from diverse racial and ethnic backgrounds, and six priority programs were underrepresented by these students. Appendix A: Table 29 through Appendix A: Table 35 also show underrepresentation within each race/ethnic group, which community colleges can use to guide specific targeted efforts to recruit race/ethnic groups that are specifically underrepresented in those programs. Racial and ethnic equity gaps have a profound impact on systemic economic disparities,³⁶ underscoring how the long-term effects of underrepresentation in educational programs can limit access to high-demand jobs with competitive wages. For instance, 58% of students enrolled in Heavy Equipment Maintenance (TOP 0947.20) programs identified as diverse, and only 45% of “Mobile Heavy Equipment Mechanics, Except Engines” workers identified as diverse. Similarly, students who identified as diverse were also underrepresented in Public Safety, comprising 58% of students enrolled in Fire Technology (TOP 2133.00) compared to 79% across students, and 50% of “Firefighters” in the workforce compared to 61% across jobs. These findings illustrate a trajectory of disparity, and addressing them early in educational programs is crucial to ensuring equitable access to career opportunities and reducing long-term economic inequality.

Bay Region Community Colleges use student enrollment data as a starting point to identify equity gaps, but should also consider other student outcomes.

Equity is a key component of the California Community College system's Vision 2030,³⁷ which provides a framework aimed at improving student success and outcomes for individuals from all backgrounds. For instance, one goal is to “increase, with equity, the number of California community college students who earn a living wage.” This report provides essential data to help community colleges focus their efforts on increasing diverse representation in programs that lead to employment opportunities that offer economic stability in the Bay Region.

It is important to note that this data focuses only on one indicator of equity within community colleges—student enrollment. To promote equity effectively, it is essential to expand the focus and understand equity within other student outcomes, as well as listen to the voices and needs of the students most impacted by these gaps when establishing strategic priorities in the Bay Region. Institutions can also foster an equity-minded campus culture by exploring tools and resources that drive this focus and ideas that support equity.³⁸ Beyond addressing specific programmatic inequities, it is important for campuses to create an environment where equity is integrated into all aspects of student experiences. This data provides the community colleges with a starting point for identifying areas in need of change and highlighting recruitment needs, training gaps, or other factors.

³⁶ “Racial Equity Could Produce Widespread Economic Gains,” Federal Reserve Bank of St. Louis, January 12, 2023, accessed November 1, 2024, <https://www.stlouisfed.org/publications/economic-equity-insights/racial-equity-labor-market-outcomes-economic-growth>.

³⁷ “Vision 2030: A Roadmap for California Community Colleges,” California Community Colleges Chancellor's Office, September 2023, accessed October 1, 2024, <https://www.cccco.edu/About-Us/Vision-2030>.

³⁸ <https://www.cue-tools.usc.edu/>.

Appendix A: Data Tables

Table 18. Labor Market Information for Priority Jobs in the Bay Region (2023-2028)

SOC	Description	Avg. Annual Job Openings (2023-2028)	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Typical Entry Level Education	Work Experience Required
11-3012	Administrative Services Managers	810	\$44	\$55	Bachelor's	Less than 5 yrs
11-3013	Facilities Managers	450	\$43	\$59	Bachelor's	Less than 5 yrs
11-9021	Construction Managers	1,210	\$33	\$51	Bachelor's	None
11-9199	Managers, All Other	4,220	\$30	\$66	Bachelor's	Less than 5 yrs
13-1028	Buyers and Purchasing Agents	1,130	\$30	\$39	Bachelor's	None
13-1051	Cost Estimators	620	\$34	\$45	Bachelor's	None
13-1071	Human Resources Specialists	2,770	\$34	\$43	Bachelor's	None
13-1081	Logisticians	910	\$34	\$46	Bachelor's	None
13-1151	Training and Development Specialists	1,200	\$27	\$37	Bachelor's	Less than 5 yrs
13-2072	Loan Officers	420	\$27	\$36	Bachelor's	Less than 5 yrs
15-1212	Information Security Analysts	810	\$54	\$69	Bachelor's	Less than 5 yrs
15-1231	Computer Network Support Specialists	390	\$31	\$38	Associate	None
15-1232	Computer User Support Specialists	1,800	\$27	\$35	Some college	None
15-1244	Network and Computer Systems Administrators	740	\$42	\$55	Bachelor's	None
15-1254	Web Developers	450	\$32	\$53	Bachelor's	None
15-1255	Web and Digital Interface Designers	1,120	\$40	\$65	Bachelor's	None
15-1299	Computer Occupations, All Other	3,080	\$38	\$57	Bachelor's	None
17-3011	Architectural and Civil Drafters	360	\$29	\$36	Associate	None

SOC	Description	Avg. Annual Job Openings (2023-2028)	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Typical Entry Level Education	Work Experience Required
17-3023	Electrical and Electronic Engineering Technologists and Technicians	590	\$32	\$39	Associate	None
19-4099	Life, Physical, and Social Science Technicians, All Other	570	\$28	\$36	Associate	None
19-5011	Occupational Health and Safety Specialists	380	\$41	\$53	Bachelor's	None
23-2011	Paralegals and Legal Assistants	1,050	\$29	\$36	Associate	None
29-1141	Registered Nurses	6,010	\$65	\$84	Bachelor's	None
29-1292	Dental Hygienists	490	\$61	\$61	Associate	None
29-2018	Clinical Laboratory Technologists and Technicians	680	\$27	\$36	Bachelor's	None
29-2034	Radiologic Technologists and Technicians	360	\$49	\$61	Associate	None
29-2061	Licensed Practical and Licensed Vocational Nurses	1,590	\$35	\$38	Postsecondary	None
29-2099	Health Technologists and Technicians, All Other	510	\$26	\$31	Postsecondary	None
33-2011	Firefighters	620	\$40	\$48	Postsecondary	None
33-3012	Correctional Officers and Jailers	580	\$41	\$46	HS diploma or equivalent	None
33-3051	Police and Sheriff's Patrol Officers	1,470	\$49	\$62	HS diploma or equivalent	None
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	4,660	\$28	\$42	HS diploma or equivalent	None
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	1,380	\$43	\$60	Bachelor's	None
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	2,800	\$28	\$38	HS diploma or equivalent	None
41-9021	Real Estate Brokers	370	\$27	\$44	HS diploma or equivalent	Less than 5 yrs
43-1011	First-Line Supervisors of Office and Administrative Support Workers	3,460	\$29	\$35	HS diploma or equivalent	Less than 5 yrs

SOC	Description	Avg. Annual Job Openings (2023-2028)	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings	Typical Entry Level Education	Work Experience Required
43-3051	Payroll and Timekeeping Clerks	470	\$26	\$32	HS diploma or equivalent	None
43-4061	Eligibility Interviewers, Government Programs	470	\$30	\$35	HS diploma or equivalent	None
43-6011	Executive Secretaries and Executive Administrative Assistants	2,090	\$34	\$42	HS diploma or equivalent	Less than 5 yrs
43-6012	Legal Secretaries and Administrative Assistants	460	\$27	\$31	HS diploma or equivalent	None
47-2073	Operating Engineers and Other Construction Equipment Operators	710	\$31	\$45	HS diploma or equivalent	None
47-2111	Electricians	2,370	\$28	\$41	HS diploma or equivalent	None
47-2152	Plumbers, Pipefitters, and Steamfitters	1,090	\$26	\$35	HS diploma or equivalent	None
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	1,140	\$35	\$46	HS diploma or equivalent	Less than 5 yrs
49-2022	Telecommunications Equipment Installers and Repairers, Except Line Installers	460	\$31	\$36	Postsecondary	None
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	470	\$28	\$37	HS diploma or equivalent	None
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	390	\$31	\$36	HS diploma or equivalent	None
49-9041	Industrial Machinery Mechanics	670	\$29	\$38	HS diploma or equivalent	None
51-1011	First-Line Supervisors of Production and Operating Workers	1,240	\$29	\$38	HS diploma or equivalent	Less than 5 yrs
53-2031	Flight Attendants	630	\$30	\$41	HS diploma or equivalent	Less than 5 yrs

Source: Lightcast 2024.3, QCEW Employees, Non-QCEW Employees, and Self-Employed.

Table 19. Labor Market Information and CCCCC Sector for Priority Jobs in the Bay Region (2023-2028)

SOC	Description	2023 Jobs	2028 Jobs	2023-2028 Change	2023-2028 % Change	CCCCO Sector ³⁹
11-3012	Administrative Services Managers	9,120	9,620	500	5%	Business & Entrepreneurship
11-3013	Facilities Managers	5,020	5,340	320	6%	Business & Entrepreneurship
11-9021	Construction Managers	14,560	15,300	740	5%	Energy, Construction & Utilities
11-9199	Managers, All Other	52,740	54,330	1,590	3%	Business & Entrepreneurship
13-1028	Buyers and Purchasing Agents	12,250	12,280	30	0%	Business & Entrepreneurship
13-1051	Cost Estimators	6,960	7,130	170	2%	Business & Entrepreneurship
13-1071	Human Resources Specialists	29,020	30,620	1,600	6%	Business & Entrepreneurship
13-1081	Logisticians	8,720	9,680	960	11%	Advanced Transportation & Logistics
13-1151	Training and Development Specialists	11,670	12,630	960	8%	Education & Human Development
13-2072	Loan Officers	6,050	5,830	-220	-4%	Business & Entrepreneurship
15-1212	Information Security Analysts	7,590	9,170	1,580	21%	ICT / Digital Media
15-1231	Computer Network Support Specialists	3,950	4,520	570	14%	ICT / Digital Media
15-1232	Computer User Support Specialists	18,700	21,110	2,410	13%	ICT / Digital Media
15-1244	Network and Computer Systems Administrators	9,780	10,630	850	9%	ICT / Digital Media
15-1254	Web Developers	5,060	5,630	570	11%	ICT / Digital Media
15-1255	Web and Digital Interface Designers	11,870	13,100	1,230	10%	ICT / Digital Media
15-1299	Computer Occupations, All Other	40,940	43,260	2,320	6%	ICT / Digital Media

³⁹ California Community Colleges Chancellor's Office (CCCCO), <https://www.cccco.edu/About-Us/Chancellors-Office/Divisions/Workforce-and-Economic-Development/Strong-Workforce-Program/SWP-Archive/Events/K12-SWP-Industry-Sector-Crosswalk>.

SOC	Description	2023 Jobs	2028 Jobs	2023-2028 Change	2023-2028 % Change	CCCCO Sector ³⁹
17-3011	Architectural and Civil Drafters	3,600	3,710	110	3%	Energy, Construction & Utilities
17-3023	Electrical and Electronic Engineering Technologists and Technicians	5,610	5,820	210	4%	Advanced Manufacturing
19-4099	Life, Physical, and Social Science Technicians, All Other	4,060	4,330	270	7%	Life Sciences/Biotech
19-5011	Occupational Health and Safety Specialists	2,840	3,160	320	11%	Advanced Manufacturing
23-2011	Paralegals and Legal Assistants	9,860	10,040	180	2%	Unassigned CTE
29-1141	Registered Nurses	78,540	86,370	7,830	10%	Health
29-1292	Dental Hygienists	6,180	6,580	400	6%	Health
29-2018	Clinical Laboratory Technologists and Technicians	7,500	8,380	880	12%	Health
29-2034	Radiologic Technologists and Technicians	4,250	4,850	600	14%	Health
29-2061	Licensed Practical and Licensed Vocational Nurses	15,740	17,390	1,650	10%	Health
29-2099	Health Technologists and Technicians, All Other	4,950	5,750	800	16%	Health
33-2011	Firefighters	6,740	7,250	510	8%	Public Safety
33-3012	Correctional Officers and Jailers	5,900	6,210	310	5%	Public Safety
33-3051	Police and Sheriff's Patrol Officers	15,890	17,010	1,120	7%	Public Safety
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	42,720	45,480	2,760	6%	Business & Entrepreneurship
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	12,480	13,580	1,100	9%	Business & Entrepreneurship
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	30,900	30,700	-200	-1%	Business & Entrepreneurship
41-9021	Real Estate Brokers	4,050	4,180	130	3%	Business & Entrepreneurship

SOC	Description	2023 Jobs	2028 Jobs	2023-2028 Change	2023-2028 % Change	CCCCO Sector ³⁹
43-1011	First-Line Supervisors of Office and Administrative Support Workers	35,190	35,510	320	1%	Business & Entrepreneurship
43-3051	Payroll and Timekeeping Clerks	4,800	4,590	-210	-4%	Business & Entrepreneurship
43-4061	Eligibility Interviewers, Government Programs	4,800	5,050	250	5%	Education & Human Development
43-6011	Executive Secretaries and Executive Administrative Assistants	21,010	19,520	-1,490	-7%	Business & Entrepreneurship
43-6012	Legal Secretaries and Administrative Assistants	4,280	3,880	-400	-9%	Business & Entrepreneurship
47-2073	Operating Engineers and Other Construction Equipment Operators	7,310	7,660	350	5%	Energy, Construction & Utilities
47-2111	Electricians	20,570	22,900	2,330	11%	Energy, Construction & Utilities
47-2152	Plumbers, Pipefitters, and Steamfitters	11,160	11,690	530	5%	Energy, Construction & Utilities
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	11,580	12,360	780	7%	Advanced Transportation & Logistics
49-2022	Telecommunications Equipment Installers and Repairers, Except Line Installers	3,920	4,120	200	5%	Energy, Construction & Utilities
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	4,800	5,110	310	6%	Advanced Transportation & Logistics
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	4,120	4,310	190	5%	Advanced Transportation & Logistics
49-9041	Industrial Machinery Mechanics	6,060	6,910	850	14%	Advanced Manufacturing
51-1011	First-Line Supervisors of Production and Operating Workers	11,020	11,890	870	8%	Advanced Manufacturing
53-2031	Flight Attendants	4,830	4,140	-690	-14%	Retail, Hospitality & Tourism

Source: Lightcast 2024.3, QCEW Employees, Non-QCEW Employees, and Self-Employed.

Table 20. Under- or Overrepresentation in Priority Jobs by Demographic Group

SOC	Description	Female	Male	Age 55+	Diversity
11-3012	Administrative Services Managers				•
11-3013	Facilities Managers	•		•	•
11-9021	Construction Managers	•			•
11-9199	Managers, All Other	•			•
13-1028	Buyers and Purchasing Agents				•
13-1051	Cost Estimators	•		•	•
13-1071	Human Resources Specialists		•		
13-1081	Logisticians	•			
13-1151	Training and Development Specialists		•		•
13-2072	Loan Officers				
15-1212	Information Security Analysts	•			
15-1231	Computer Network Support Specialists	•			
15-1232	Computer User Support Specialists	•			
15-1244	Network and Computer Systems Administrators	•			
15-1254	Web Developers	•			
15-1255	Web and Digital Interface Designers	•			
15-1299	Computer Occupations, All Other	•			
17-3011	Architectural and Civil Drafters	•			•
17-3023	Electrical and Electronic Engineering Technologists and Technicians	•		•	
19-4099	Life, Physical, and Social Science Technicians, All Other				
19-5011	Occupational Health and Safety Specialists				
23-2011	Paralegals and Legal Assistants		•		
29-1141	Registered Nurses		•		
29-1292	Dental Hygienists		•		
29-2018	Clinical Laboratory Technologists and Technicians		•		
29-2034	Radiologic Technologists and Technicians		•		

SOC	Description	Female	Male	Age 55+	Diversity
29-2061	Licensed Practical and Licensed Vocational Nurses		•		
29-2099	Health Technologists and Technicians, All Other		•		
33-2011	Firefighters	•			•
33-3012	Correctional Officers and Jailers	•			
33-3051	Police and Sheriff's Patrol Officers	•			
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	•			•
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	•			•
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	•			•
41-9021	Real Estate Brokers			•	•
43-1011	First-Line Supervisors of Office and Administrative Support Workers		•		
43-3051	Payroll and Timekeeping Clerks		•		
43-4061	Eligibility Interviewers, Government Programs		•		
43-6011	Executive Secretaries and Executive Administrative Assistants		•		•
43-6012	Legal Secretaries and Administrative Assistants		•	•	•
47-2073	Operating Engineers and Other Construction Equipment Operators	•			•
47-2111	Electricians	•			
47-2152	Plumbers, Pipefitters, and Steamfitters	•			
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	•			•
49-2022	Telecommunications Equipment Installers and Repairers, Except Line Installers	•			
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	•			
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	•			•
49-9041	Industrial Machinery Mechanics	•			
51-1011	First-Line Supervisors of Production and Operating Workers	•			
53-2031	Flight Attendants		•	•	

Table 21. Priority Jobs Underrepresented by White

SOC	SOC Description	% White
43-4061	Eligibility Interviewers, Government Programs	20%
29-2099	Health Technologists and Technicians, All Other	25%
29-2018	Clinical Laboratory Technologists and Technicians	29%
29-2061	Licensed Practical and Licensed Vocational Nurses	31%
33-3012	Correctional Officers and Jailers	34%
15-1299	Computer Occupations, All Other	36%
29-1141	Registered Nurses	36%
17-3023	Electrical and Electronic Engineering Technologists and Technicians	36%
13-1081	Logisticians	36%

Table 22. Priority Jobs Underrepresented by Hispanic or Latino

SOC	SOC Description	% Hispanic
15-1254	Web Developers	11%
15-1255	Web and Digital Interface Designers	12%
15-1212	Information Security Analysts	12%
53-2031	Flight Attendants	13%
15-1299	Computer Occupations, All Other	13%
29-1141	Registered Nurses	14%
15-1244	Network and Computer Systems Administrators	14%
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	14%
15-1232	Computer User Support Specialists	15%
15-1231	Computer Network Support Specialists	16%
17-3023	Electrical and Electronic Engineering Technologists and Technicians	16%
29-2018	Clinical Laboratory Technologists and Technicians	17%
41-9021	Real Estate Brokers	18%
19-4099	Life, Physical, and Social Science Technicians, All Other	18%
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	19%
29-1292	Dental Hygienists	19%
13-1051	Cost Estimators	19%
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	20%
13-1028	Buyers and Purchasing Agents	20%
11-9199	Managers, All Other	21%
13-1151	Training and Development Specialists	21%

SOC	SOC Description	% Hispanic
17-3011	Architectural and Civil Drafters	22%
29-2099	Health Technologists and Technicians, All Other	22%
11-3013	Facilities Managers	22%
13-2072	Loan Officers	22%
13-1071	Human Resources Specialists	22%
29-2034	Radiologic Technologists and Technicians	22%
11-3012	Administrative Services Managers	23%
29-2061	Licensed Practical and Licensed Vocational Nurses	23%
13-1081	Logisticians	23%
43-6011	Executive Secretaries and Executive Administrative Assistants	24%
19-5011	Occupational Health and Safety Specialists	24%
43-1011	First-Line Supervisors of Office and Administrative Support Workers	26%

Table 23. Priority Jobs Underrepresented by Asian

SOC	SOC Description	% Asian
47-2073	Operating Engineers and Other Construction Equipment Operators	2%
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	5%
33-3012	Correctional Officers and Jailers	5%
47-2152	Plumbers, Pipefitters, and Steamfitters	5%
33-2011	Firefighters	6%
47-2111	Electricians	7%
33-3051	Police and Sheriff's Patrol Officers	9%
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	9%
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	9%
11-9021	Construction Managers	9%
43-6012	Legal Secretaries and Administrative Assistants	13%
11-3013	Facilities Managers	14%
49-9041	Industrial Machinery Mechanics	15%
43-6011	Executive Secretaries and Executive Administrative Assistants	15%
13-1051	Cost Estimators	15%
49-2022	Telecommunications Equipment Installers and Repairers, Except Line Installers	15%
23-2011	Paralegals and Legal Assistants	15%
13-1151	Training and Development Specialists	16%
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	16%

SOC	SOC Description	% Asian
19-5011	Occupational Health and Safety Specialists	16%
11-3012	Administrative Services Managers	17%
43-3051	Payroll and Timekeeping Clerks	17%
43-4061	Eligibility Interviewers, Government Programs	17%
41-9021	Real Estate Brokers	18%
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	18%
43-1011	First-Line Supervisors of Office and Administrative Support Workers	18%
51-1011	First-Line Supervisors of Production and Operating Workers	19%
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	21%
13-1071	Human Resources Specialists	21%
11-9199	Managers, All Other	22%
17-3011	Architectural and Civil Drafters	22%
13-2072	Loan Officers	23%
13-1028	Buyers and Purchasing Agents	23%

Table 24. Priority Jobs Underrepresented by Black or African American

SOC	SOC Description	% Black
13-1051	Cost Estimators	1%
11-9021	Construction Managers	3%
29-1292	Dental Hygienists	3%
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	3%
17-3011	Architectural and Civil Drafters	3%
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	3%
15-1255	Web and Digital Interface Designers	3%
15-1254	Web Developers	4%
17-3023	Electrical and Electronic Engineering Technologists and Technicians	4%
19-4099	Life, Physical, and Social Science Technicians, All Other	4%
49-9041	Industrial Machinery Mechanics	4%
11-9199	Managers, All Other	4%
47-2152	Plumbers, Pipefitters, and Steamfitters	4%
15-1244	Network and Computer Systems Administrators	4%
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	4%
47-2073	Operating Engineers and Other Construction Equipment Operators	4%
47-2111	Electricians	4%

SOC	SOC Description	% Black
13-1028	Buyers and Purchasing Agents	4%
41-9021	Real Estate Brokers	5%
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	5%
29-2034	Radiologic Technologists and Technicians	5%
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	5%
51-1011	First-Line Supervisors of Production and Operating Workers	5%
15-1299	Computer Occupations, All Other	5%
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	5%
15-1232	Computer User Support Specialists	5%

Table 25. Priority Jobs Underrepresented by Native Hawaiian or Other Pacific Islander

SOC	SOC Description	% NH / PI
15-1255	Web and Digital Interface Designers	0.2%
15-1254	Web Developers	0.2%
11-9021	Construction Managers	0.2%
13-1051	Cost Estimators	0.3%
11-9199	Managers, All Other	0.3%
33-3051	Police and Sheriff's Patrol Officers	0.3%
15-1244	Network and Computer Systems Administrators	0.4%
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	0.4%
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	0.4%
15-1299	Computer Occupations, All Other	0.4%

Table 26. Priority Jobs Underrepresented by American Indian / Alaska Native

SOC	SOC Description	% AI / AN
41-9021	Real Estate Brokers	0.1%
13-1081	Logisticians	0.1%
53-2031	Flight Attendants	0.1%
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	0.1%
15-1255	Web and Digital Interface Designers	0.2%
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	0.2%
11-9021	Construction Managers	0.2%
29-1141	Registered Nurses	0.2%

Table 27. Priority Programs Underrepresented by Demographic Group

TOP	TOP Title	Female	Male	Ages 20 to 24	Diversity
0430.00	Biotechnology and Biomedical Technology			•	
0501.00	Business and Commerce, General				
0502.00	Accounting				
0504.00	Banking and Finance				
0505.00	Business Administration				
0506.00	Business Management				
0506.30	Management Development and Supervision			•	
0509.20	Purchasing				
0509.40	Sales and Salesmanship				
0510.00	Logistics and Materials Transportation				
0511.00	Real Estate			•	
0514.00	Office Technology/Office Computer Applications		•		
0514.10	Legal Office Technology				
0514.40	Office Management				
0614.30	Website Design and Development				
0701.00	Information Technology, General	•			
0702.00	Computer Information Systems				
0708.00	Computer Infrastructure and Support	•			
0708.10	Computer Networking	•			
0708.20	Computer Support	•			
0860.00	Educational Technology			•	•
0924.00	Engineering Technology, General (requires Trigonometry)	•			
0934.00	Electronics and Electric Technology	•			
0934.30	Telecommunications Technology				

TOP	TOP Title	Female	Male	Ages 20 to 24	Diversity
0934.40	Electrical Systems and Power Transmission	•			
0945.00	Industrial Systems Technology and Maintenance	•			
0947.00	Diesel Technology	•			
0947.20	Heavy Equipment Maintenance	•			•
0947.30	Heavy Equipment Operation				
0952.20	Electrical	•		•	•
0952.30	Plumbing, Pipefitting and Steamfitting	•		•	•
0953.00	Drafting Technology	•			
0955.00	Laboratory Science Technology				
0956.70	Industrial and Occupational Safety and Health				
0957.00	Civil and Construction Management Technology	•			
1212.00	Electro-Neurodiagnostic Technology				
1225.00	Radiologic Technology		•	•	
1230.10	Registered Nursing		•	•	
1230.20	Licensed Vocational Nursing		•		
1240.20	Dental Hygienist		•		
1402.00	Paralegal		•	•	
2101.00	Community Services, General				
2105.00	Administration of Justice				
2105.10	Corrections	•			
2105.50	Police Academy	•			
2133.00	Fire Technology	•			•
2133.50	Fire Academy	•			•
3020.40	Flight Attendant				

Table 28. Community Colleges with FTES Enrolled in the Bay Region (PY 2022-23)

TOP Code	TOP Title	Total FTES Enrolled	Bay Region Colleges with FTES Enrolled				
			Alameda	De Anza	Laney	Monterey	Santa Rosa
0502.00	Accounting	4,077	Berkeley City	Diablo Valley	Las Positas	Napa	Skyline
			Cabrillo	Evergreen Valley	Los Medanos	Ohlone	Solano
			Cañada	Foothill	Marin	San Francisco	West Valley
			Chabot	Gavilan	Merritt	San Jose City	
			Contra Costa	Hartnell	Mission	San Mateo	
2105.00	Administration of Justice	1,887	Cabrillo	Evergreen Valley	Marin	San Francisco	Solano
			Chabot	Gavilan	Merritt	San Jose City	West Valley
			Contra Costa	Hartnell	Monterey	San Mateo	
			De Anza	Las Positas	Napa	Santa Rosa	
			Diablo Valley	Los Medanos	Ohlone	Skyline	
0504.00	Banking and Finance	110	Berkeley City	Laney	Napa	San Mateo	Solano
			Cañada	Marin	Ohlone	Santa Rosa	
			De Anza	Monterey	San Francisco	Skyline	
0430.00	Biotechnology and Biomedical Technology	495	Berkeley City	Laney	Ohlone	Skyline	
			Cabrillo	Las Positas	San Francisco	Solano	
			Contra Costa	Merritt	San Mateo		
0505.00	Business Administration	1,376	Alameda	De Anza	Marin	San Mateo	
			Chabot	Diablo Valley	Mission	Skyline	
			Contra Costa	Foothill	Monterey	West Valley	
0501.00	Business and Commerce, General	2,518	Alameda	Diablo Valley	Las Positas	Monterey	Santa Rosa
			Berkeley City	Evergreen Valley	Los Medanos	Napa	Skyline
			Cabrillo	Gavilan	Marin	San Francisco	Solano
			Cañada	Hartnell	Merritt	San Jose City	West Valley
			Chabot	Laney	Mission	San Mateo	
0506.00	Business Management	622	Berkeley City	Diablo Valley	Las Positas	Monterey	Santa Rosa
			Cañada	Foothill	Los Medanos	Napa	Skyline
			Chabot	Gavilan	Marin	San Francisco	Solano
			Contra Costa	Hartnell	Merritt	San Jose City	

TOP Code	TOP Title	Total FTES Enrolled	Bay Region Colleges with FTES Enrolled				
			De Anza	Laney	Mission	San Mateo	
0957.00	Civil and Construction Management Technology	279	Cabrillo	Gavilan	Laney	Santa Rosa	
			Diablo Valley	Hartnell	San Francisco		
0702.00	Computer Information Systems	680	Alameda	Diablo Valley	Marin	Napa	Santa Rosa
			Berkeley City	Hartnell	Merritt	Ohlone	Solano
			Chabot	Laney	Mission	San Jose City	West Valley
			Contra Costa	Las Positas	Monterey	San Mateo	
0708.00	Computer Infrastructure and Support	354	Cabrillo	Diablo Valley	Las Positas	San Jose City	
			Contra Costa	Foothill	Ohlone	Santa Rosa	
			De Anza	Gavilan	San Francisco	Skyline	
0708.10	Computer Networking	607	Cabrillo	Diablo Valley	Las Positas	Monterey	San Jose City
			Contra Costa	Gavilan	Marin	Ohlone	San Mateo
			De Anza	Hartnell	Mission	San Francisco	
0708.20	Computer Support	76	Contra Costa	Monterey	San Jose City		
			Mission	San Francisco	Santa Rosa		
2105.10	Corrections	86	Gavilan	Hartnell	Merritt	Monterey	Santa Rosa
1240.20	Dental Hygienist	362	Cabrillo	Chabot	Diablo Valley	Foothill	Santa Rosa
0947.00	Diesel Technology	136	Alameda	Hartnell	Santa Rosa		
0953.00	Drafting Technology	272	Chabot	Diablo Valley	Hartnell	San Francisco	Santa Rosa
			De Anza	Evergreen Valley	Napa	San Mateo	Solano
0860.00	Educational Technology	158	Evergreen Valley	Foothill	Santa Rosa		
0952.20	Electrical	143	Chabot	Foothill	Hartnell	San Jose City	Santa Rosa
0934.40	Electrical Systems and Power Transmission	467	Laney				
0934.00	Electronics and Electric Technology	403	Chabot	Las Positas	Ohlone	San Jose City	Skyline
			Diablo Valley	Los Medanos	San Francisco	Santa Rosa	
0924.00	Engineering Technology, General (requires Trigonometry)	37	Cabrillo	Evergreen Valley	Las Positas	San Francisco	
			Chabot	Hartnell	Marin		
2133.50	Fire Academy	463	Chabot	Los Medanos	Mission	San Francisco	Santa Rosa
			Las Positas	Merritt	Monterey	San Mateo	
2133.00	Fire Technology	1,234	Cabrillo	Las Positas	Merritt	Ohlone	Santa Rosa

TOP Code	TOP Title	Total FTES Enrolled	Bay Region Colleges with FTES Enrolled				
			Chabot	Los Medanos	Mission	San Francisco	Solano
			Gavilan	Marin	Monterey	San Mateo	
0947.20	Heavy Equipment Maintenance	18	Santa Rosa				
0956.70	Industrial and Occupational Safety and Health	8	Las Positas	Los Medanos	Santa Rosa		
0945.00	Industrial Systems Technology and Maintenance	76	Diablo Valley	Foothill	Laney	Los Medanos	San Jose City
0701.00	Information Technology, General	1,246	Alameda	Evergreen Valley	Las Positas	Mission	San Jose City
			Berkeley City	Gavilan	Los Medanos	Monterey	San Mateo
			Chabot	Hartnell	Marin	Ohlone	Santa Rosa
			De Anza	Laney	Merritt	San Francisco	West Valley
0955.00	Laboratory Science Technology	6	Berkeley City	Cabrillo			
0514.10	Legal Office Technology	3	Santa Rosa				
1230.20	Licensed Vocational Nursing	482	Gavilan	Hartnell	Los Medanos	Mission	San Francisco
0510.00	Logistics and Materials Transportation	3	Mission	Solano			
0506.30	Management Development and Supervision	128	Berkeley City	Laney	Merritt	San Francisco	Skyline
			Diablo Valley	Las Positas	Mission	San Mateo	West Valley
			Evergreen Valley	Los Medanos	Ohlone	Santa Rosa	
0514.40	Office Management	2	Solano				
0514.00	Office Technology/Office Computer Applications	754	Cabrillo	Evergreen Valley	Laney	Monterey	San Mateo
			Cañada	Foothill	Las Positas	Ohlone	Santa Rosa
			Chabot	Gavilan	Los Medanos	San Francisco	Skyline
			Contra Costa	Hartnell	Mission	San Jose City	West Valley
1402.00	Paralegal	415	Cañada	De Anza	Merritt	Santa Rosa	West Valley
			Chabot	Evergreen Valley	San Francisco	Skyline	
0952.30	Plumbing, Pipefitting and Steamfitting	564	Chabot	Foothill	San Francisco	Santa Rosa	
			Diablo Valley	Hartnell	San Jose City		
2105.50	Police Academy	2,400	Chabot	Hartnell	Merritt	Ohlone	Santa Rosa
			Gavilan	Los Medanos	Monterey	San Francisco	
1225.00	Radiologic Technology	673	Cabrillo	Foothill	San Francisco		
			Cañada	Merritt	Santa Rosa		

TOP Code	TOP Title	Total FTES Enrolled	Bay Region Colleges with FTES Enrolled				
0511.00	Real Estate	780	Chabot	Gavilan	Ohlone	Santa Rosa	
			Contra Costa	Marin	San Francisco	Skyline	
			De Anza	Merritt	San Jose City	Solano	
			Diablo Valley	Monterey	San Mateo	West Valley	
1230.10	Registered Nursing	2,187	Cabrillo	Evergreen Valley	Marin	Napa	Santa Rosa
			Chabot	Gavilan	Merritt	Ohlone	Solano
			Contra Costa	Hartnell	Mission	San Francisco	
			De Anza	Los Medanos	Monterey	San Mateo	
0509.40	Sales and Salesmanship	11	Diablo Valley	Laney	Monterey	West Valley	
0934.30	Telecommunications Technology	1	Chabot				
0614.30	Website Design and Development	320	Berkeley City	Gavilan	Mission	San Jose City	
			Cañada	Hartnell	Ohlone	Santa Rosa	
			Diablo Valley	Marin	San Francisco	West Valley	

Table 29. Priority Programs Underrepresented by White

TOP	Program Title	Total FTES Enrolled	% White
1230.20	Licensed Vocational Nursing	482	9%
2105.10	Corrections	86	10%
0947.00	Diesel Technology	136	10%
0701.00	Information Technology, General	1,246	15%
0702.00	Computer Information Systems	680	17%
0502.00	Accounting	4,077	20%

Table 30. Priority Programs Underrepresented by Hispanic or Latino

TOP	Program Title	Total FTES Enrolled	% Hispanic
0860.00	Educational Technology	158	21%
0430.00	Biotechnology and Biomedical Technology	495	27%
0708.10	Computer Networking	607	29%
0702.00	Computer Information Systems	680	31%
0708.00	Computer Infrastructure and Support	354	31%
0614.30	Website Design and Development	320	32%
0505.00	Business Administration	1,376	32%
0502.00	Accounting	4,077	32%
1225.00	Radiologic Technology	673	34%
1230.10	Registered Nursing	2,187	34%

Table 31. Priority Programs Underrepresented by Asian

TOP	Program Title	Total FTES Enrolled	% Asian
2105.10	Corrections	86	3%
2133.50	Fire Academy	463	4%
0947.00	Diesel Technology	136	4%
0952.30	Plumbing, Pipefitting and Steamfitting	564	5%
0957.00	Civil and Construction Management Technology	279	5%
2133.00	Fire Technology	1,234	6%
0952.20	Electrical	467	6%
0945.00	Industrial Systems Technology and Maintenance	76	7%
2105.00	Administration of Justice	1,887	8%
2105.50	Police Academy	2,400	10%
1402.00	Paralegal	415	11%
0506.30	Management Development and Supervision	128	12%

TOP	Program Title	Total FTES Enrolled	% Asian
0934.00	Electronics and Electric Technology	403	14%
0501.00	Business and Commerce, General	2,518	15%
1230.10	Registered Nursing	2,187	16%

Table 32. Priority Programs Underrepresented by Filipino

TOP	Program Title	Total FTES Enrolled	% Filipino
0947.00	Diesel Technology	136	0%
0957.00	Civil and Construction Management Technology	279	1%
0952.30	Plumbing, Pipefitting and Steamfitting	564	2%
2133.00	Fire Technology	1,234	2%
2105.00	Administration of Justice	1,887	2%
2105.50	Police Academy	2,400	2%
0952.20	Electrical	467	2%
0511.00	Real Estate	780	3%

Table 33. Priority Programs Underrepresented by Black or African American

TOP	Program Title	Total FTES Enrolled	% Black
1240.20	Dental Hygienist	362	1%
0947.00	Diesel Technology	136	2%
2133.00	Fire Technology	1,234	4%
0502.00	Accounting	4,077	5%
1230.10	Registered Nursing	2,187	5%

Table 34. Priority Programs Underrepresented by Native Hawaiian / Pacific Islander⁴⁰

TOP	Program Title	Total FTES Enrolled	% NH / PI
1230.10	Registered Nursing	2,187	<1%
0701.00	Information Technology, General	1,246	<1%
1225.00	Radiologic Technology	673	<1%
0430.00	Biotechnology and Biomedical Technology	495	<1%
1240.20	Dental Hygienist	362	0%
0614.30	Website Design and Development	320	<1%
0957.00	Civil and Construction Management Technology	279	<1%
0860.00	Educational Technology	158	<1%

⁴⁰ Native Hawaiian / Other Pacific Islander represented 1% of community college enrollments. Testing for statistical significance was not applicable. Table 34 shows the TOP codes that did not have any students who identified with race/ethnic category.

TOP	Program Title	Total FTES Enrolled	% NH / PI
0947.00	Diesel Technology	136	<1%
0504.00	Banking and Finance	110	<1%
0945.00	Industrial Systems Technology and Maintenance	76	<1%
0947.20	Heavy Equipment Maintenance	18	0%
0956.70	Industrial and Occupational Safety and Health	8	<1%
0955.00	Laboratory Science Technology	6	0%
0514.10	Legal Office Technology	3	0%
0510.00	Logistics and Materials Transportation	3	0%
0514.40	Office Management	2	0%
0934.30	Telecommunications Technology	1	0%

Table 35. Priority Programs Underrepresented by American Indian / Alaska Native⁴¹

TOP	Program Title	Total FTES Enrolled	% AI / AN
1225.00	Radiologic Technology	673	0%
0430.00	Biotechnology and Biomedical Technology	495	<1%
1230.20	Licensed Vocational Nursing	482	0%
1240.20	Dental Hygienist	362	<1%
0614.30	Website Design and Development	320	<1%
0947.00	Diesel Technology	136	0%
2105.10	Corrections	86	0%
0708.20	Computer Support	76	0%
0947.20	Heavy Equipment Maintenance	18	0%
0509.40	Sales and Salesmanship	11	0%
0955.00	Laboratory Science Technology	6	0%
0514.10	Legal Office Technology	3	0%
0510.00	Logistics and Materials Transportation	3	0%
0934.30	Telecommunications Technology	1	0%

⁴¹ American Indian / Alaska Native represented less than 1% of community college enrollments so testing for statistical significance was not applicable. Table 35 shows the TOP codes that did not have any students who identified as American Indian / Alaska Native.

Appendix B: Definitions

The following definitions are used throughout the report.

Average Annual Job Openings: In Lightcast (formerly known as EMSI, a labor market analytics company), average annual job openings refer to the estimated number of job openings in a given occupation or group of occupations within a specific geographic area during the course of a year. When calculating this metric for more than a year, the average across those years is determined by adding the annual job openings over the period and dividing the total by the number of years (e.g., for a five-year period, this means adding the total openings across those five years and dividing that number by 5).

This metric is calculated based on:

- **New Growth:** Openings that arise due to the creation of new jobs as a result of industry or economic growth.
- **Replacement Needs:** Openings that occur because of workers leaving the occupation (e.g., due to retirement, career changes, or other factors).

Together, these components provide a comprehensive view of the total demand for workers in a specific role or field each year.

Full-time equivalent student (FTES):⁴² An enrolled student who attends 15 hours each week during the semester (or a group of students who, together, attend 15 hours each week). This is intended to be a count of how many students there would be if they only attended on a full-time basis.

FTES is determined by hours of attendance and 525 hours of attendance equals one FTES. The 525-hour value is based on the assumptions that a full-time student attends 15 hours of classes in a week, there are 17.5 weeks in a semester, and there are 2 semesters in an academic year. Therefore, $15 \times 17.5 \times 2 = 525$ hours = 1 FTES.

Living wage: The living wage is the hourly rate that an individual in a household must earn to support themselves and/or their family, working full-time, or 2,080 hours per year. The Bay Region living wage, calculated as \$26 per hour for a single, was determined using the average median wages across the 12 in the Bay Region.⁴³

⁴² <https://www.4cd.edu/research/docs/student-attendance-accounting-manual.pdf>.

⁴³ The Self-Sufficiency (SS) Standard for California (2024) Center for Women's Welfare, University of Washington. <http://www.selfsufficiencystandard.org/california>.

Table 36. Living Wage by County

County	Living Wage
Alameda County	\$26
Contra Costa County	\$26
Marin County	\$33
Monterey County	\$27
Napa County	\$25
San Benito County	\$24
San Francisco County	\$28
San Mateo County	\$34
Santa Clara County	\$31
Santa Cruz County	\$35
Solano County	\$23
Sonoma County	\$23

Priority job: A middle-skill job that requires at least a high school diploma, but less than a bachelor’s degree; pays entry-level earnings at or above the living wage for a single adult in the Bay Region; and has at least 350 projected average annual job openings in the Region between 2023 and 2028.

Priority program: A community college program based on TOP codes that trains for a priority job identified in this report.

SOC code: The Standard Occupational Classification system is a federally defined system used to classify workers into occupational categories that are grouped together according to job duties.⁴⁴

TOP code: The Taxonomy of Programs is a system of codes used by the State of California to compare differently named academic programs with similar outcomes across community colleges.⁴⁵ Each course offered by California Community Colleges is assigned to a TOP code.

⁴⁴ The Standard Occupational Classification (SOC) system is used by federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating or disseminating data. The report will use these titles to match those defined by this system. [bls.gov/soc](https://www.bls.gov/soc)

⁴⁵ TOP data comes from the California Community Colleges Chancellor’s Office MIS Data Mart (datamart.cccco.edu) and CIP data comes from the Integrated Postsecondary Education Data System (nces.ed.gov/ipeds/use-the-data).

Contacts

For more information, please contact:

- **Marcela Reyes, Director**

Research and Center of Excellence, mareyes@cabrillo.edu or (831) 219-8875

- **Yumi Huang, Research Analyst**

Bay Region Center of Excellence, yuhuang@cabrillo.edu or (831) 275-0043



CENTER OF EXCELLENCE
FOR LABOR MARKET RESEARCH
BAY AREA



POWERED BY



California
Community
Colleges