CENTER OF EXCELLENCE FOR LABOR MARKET RESEARCH BAY AREA

Labor Market Analysis for Program Recommendation Machinists and Computer Numerical Controlled Occupations East Bay Subregion

Prepared by the Bay Region Center of Excellence for Labor Market Research

Certificate Program

April 2026

Recommendation Based on Labor Market Data: ☑ Yes ☐ With Reservations ☐ No		
	Earning Wage Meets Living Wage	**Meets Demand**
Bay Region	**Entry Level Hourly Wage- $24** **Mid-Career Hourly Wage- $30** **Mid-Career Hourly Wage at or above the** **Bay Living Wage ($27)?** **☑ Yes** **☐ No**	**Demand: 840** **Supply: 144 (17% of Demand is Met)** **Gap: 696** **In-Demand?** **☑ Yes** **☐ No**
East Bay Subregion	**Entry Level Hourly Wage- $24** **Mid-Career Hourly Wage-$30** **Mid-Career Hourly Wage at or above the** **Subregion Living Wage ($25)?** **☑ Yes** **☐ No**	**Demand: 264** **Supply: 29 (11% of Demand is Met)** **Gap: 235** **In-Demand?** **☑ Yes** **☐ No**

Note: An occupation is considered to provide a living wage if the mid-career wage is at or above the amount required for a single adult to be economically self-sufficient within a specified region. As a rule of thumb, an occupation will be considered **in-demand** when the supply is less than 75% of the demand **and** the labor market gap exceeds 40 openings (a reasonable regional threshold for starting a new program), but this approach may not apply in all cases. For definitions of demand, supply, and living wage, please scroll to the bottom of the report under **Definitions**.

Recommendation

Based on the labor market data, we recommend this proposed program. The occupations meet both the Bay Region and East Bay subregion living wage at the entry and mid-career levels. An additional 696 students are needed in the Bay Region and 235 students in the East Bay subregion to complete their program. Lastly, only 17% of labor market demand is being met in the Bay Region, and 11% of demand is being met in the East Bay subregion overall.

Introduction

This report provides student outcomes data on employment and earnings for TOP 0956.30 - Machining and Machine Tools programs in the state and region. It is recommended that these data be reviewed to better understand how outcomes for students taking courses on this TOP code compare to potentially similar programs at subregion in the state and region.

This report profiles Machinists and Computer Numerical Controlled Occupations in the 12 county Bay Region and in the East Bay subregion. The occupations classified as middle-skill occupations require a certificate, or an associate degree, or it may require a bachelor's degree, but 33% or fewer of current workers in these roles hold one.

- **Machinists (51-4041):** Set up and operate a variety of machine tools to produce precision parts and instruments out of metal. Includes precision instrument makers who fabricate, modify, or repair mechanical instruments. May also fabricate and modify parts to make or repair machine tools or maintain industrial machines, applying knowledge of mechanics, mathematics, metal properties, layout, and machining procedures.
  Typical Entry-Level Educational: High school diploma or equivalent
  Skill Level: Middle-Skill
  Work Experience Required: None
  Percentage of individuals 25+ with an associate degree, certificate, or some postsecondary coursework as their highest level of education attainment: 40%

- **Computer Numerically Controlled Tool Operators (51-9161):** Operate computer-controlled tools, machines, or robots to machine or process parts, tools, or other work pieces made of metal, plastic, wood, stone, or other materials. May also set up and maintain equipment.
  Typical Entry-Level Educational: High school diploma or equivalent
  Skill Level: Middle-Skill
  Work Experience Required: None
  Percentage of individuals 25+ with an associate degree, certificate, or some postsecondary coursework as their highest level of education attainment: 38%

- **Computer Numerically Controlled Tool Programmers (51-9162):** Develop programs to control machining or processing of materials by automatic machine tools, equipment, or systems. May also set up, operate, or maintain equipment.
  Typical Entry-Level Educational: Postsecondary nondegree award
  Skill Level: Middle-Skill
  Work Experience Required: None
  Percentage of individuals 25+ with an associate degree, certificate, or some postsecondary coursework as their highest level of education attainment: 38%

Occupational Demand

Table 1. Employment Outlook for Machinists And Computer Numerical Controlled Occupations in the Bay Region

Occupation	2024 Jobs	2029 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	Entry Level Hourly	Mid-Career Hourly Wage
Machinists	4,727	4,749	22	0%	2,425	485	$24	$30

Occupation	2024 Jobs	2029 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	Entry Level Hourly	Mid-Career Hourly Wage
Computer Numerically Controlled Tool Operators	3,222	3,053	-168	-5%	1,468	294	$23	$28
Computer Numerically Controlled Tool Programmers	569	596	27	5%	303	61	$36	$45
Total	**8,518**	**8,398**	**-120**	**-1%**	**4,196**	**840**	**$24**	**$30**

Source: Lightcast 2026.1

The Bay Region includes: Alameda, Contra Costa, Marin, Monterey, Napa, San Benito, San Francisco, San Mateo, Santa Clara, Santa Cruz, Solano and Sonoma Counties

Table 2. Employment Outlook for Machinists And Computer Numerical Controlled Occupations in the East Bay Subregion

Occupation	2024 Jobs	2029 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	Entry Level Hourly	Mid-Career Hourly Wage
Machinists	1,587	1,594	6	0%	809	162	$25	$30
Computer Numerically Controlled Tool Operators	994	942	-51	-5%	446	89	$22	$27
Computer Numerically Controlled Tool Programmers	127	132	5	4%	66	13	$35	$43
Total	**2,708**	**2,668**	**-40**	**-1%**	**1,321**	**264**	**$24**	**$30**

Source: Lightcast 2026.1

East Bay Subregion includes: Alameda, Contra Costa Counties

Job Postings in the Bay Region and East Bay Subregion

Table 3. Number of Job Postings by Occupation for the latest 12 months

Occupation	Bay Region	East Bay
Machinists	482	229
Computer Numerically Controlled Tool Programmers	246	96
Computer Numerically Controlled Tool Operators	222	83

Source: Lightcast 2026.1; "Job Posting Analytics." Apr. 2025 - Mar. 2026

Table 4a. Top Job Titles in Job Postings for Machinists and Computer Numerical Controlled Occupations in the Bay Region

Title	Bay	Title	Bay
CNC Programmers	100	Manual Machinists	21
Machinists	83	CNC Milling Machinists	20
CNC Machinists	78	Machinist Welders	19
CNC Machine Operators	60	CNC Mill Operators	18

Title	Bay	Title	Bay
CNC Set Up Operators	55	Maintenance Machinists	17
CNC Machinists and Programmers	32	Lathe Machinists	16
CNC Mill Programmers	31	CNC Lathe Programmers	16
CNC Operators	29	CNC Lathe Operators	15
Prototype Machinists	29	Lead CNC Machinists	14

Source: Lightcast 2026.1; "Job Posting Analytics." Apr. 2025 - Mar. 2026

Table 4b. Top Job Titles in Job Posting for Machinists And Computer Numerical Controlled Occupations in the East Bay Subregion

Title	East Bay	Title	East Bay
CNC Programmers	48	Horizontal Machinists	10
CNC Machinists	47	Machinist Welders	10
Machinists	44	Mill Machinists	8
CNC Operators	21	CNC Mill Programmers	8
CNC Set Up Operators	21	Maintenance Machinists	7
Prototype Machinists	18	Manual Machinists	6
CNC Machinists and Programmers	17	CNC Lathe Operators	6
Lathe Machinists	14	CNC Lathe Machinists	5
CNC Machine Operators	12	Lead CNC Programmers	4

Source: Lightcast 2026.1; "Job Posting Analytics." Apr. 2025 - Mar. 2026

Industry Concentration

Table 5. Industries Hiring for Machinists And Computer Numerical Controlled Occupations in the Bay Region

Industry - 6 Digit NAICS (No. American Industry Classification) Codes	Jobs in Industry (2024)	Jobs in Industry (2029)	% Change (2024-29)	% Occupation Group in Industry (2024)
Full-Service Restaurants	3,331	3,405	2%	41%
Food Service Contractors	893	994	11%	11%
Hotels (except Casino Hotels) and Motels	634	649	2%	8%
Caterers	512	517	1%	6%
Limited-Service Restaurants	444	465	5%	5%
Mobile Food Services	182	214	18%	2%
Private Households	178	183	3%	2%

Industry - 6 Digit NAICS (No. American Industry Classification) Codes	Jobs in Industry (2024)	Jobs in Industry (2029)	% Change (2024-29)	% Occupation Group in Industry (2024)
Snack and Nonalcoholic Beverage Bars	158	166	5%	2%
Golf Courses and Country Clubs	129	139	8%	2%
Assisted Living Facilities for the Elderly	123	149	21%	2%

Source: Lightcast 2026.1

Table 6. Top Employers Posting Machinists And Computer Numerical Controlled Occupations in the Bay Region and the East Bay Subregion

Employer	Bay	Employer	East Bay
Aerotek	81	Aerotek	45
Fm Industries	27	Fm Industries	27
Randstad	17	Tesla	12
Ichor Systems	15	Ichor Systems	10
CyberCoders	13	Benchmark Electronics	9
Express Employment Professionals	12	South Bay Solutions	9

Source: Lightcast 2026.1; "Job Posting Analytics." Apr. 2025 - Mar. 2026

Educational Supply

There are seven community colleges in the Bay Region which issue 144 awards on average annually (last 3 years ending 2023-24) on TOP 0956.30 - Machining and Machine Tools. In the East Bay subregion, there are two community colleges that issued 29 awards on average annually (last 3 years) on this TOP code.

There are no other CTE educational institutions in the Bay Region issuing awards on average annually (last 3 years ending 2022-23) on CIP 48.0501- Machine Tool Technology/Machinist.

Table 7. Community College Awards on TOP 0956.30 - Machining and Machine Tools in the Bay Region

College	Subregion	Associate Degree	High unit Certificate	Low unit Certificate	Total
Chabot	East Bay	2	2	11	15
Deanza	Silicon Valley	11	4	33	48
Laney	East Bay	6	6	2	14
Napa	North Bay	3	1	0	4
San Francisco	Mid-Peninsula	0	0	1	1
San Jose City	Silicon Valley	2	2	9	13
Santa Rosa	North Bay	4	0	45	49
Total	**-**	**28**	**15**	**101**	**144**

Source: Data Mart

Note: The annual average for awards is 2021-22 to 2023-24.

Gap Analysis

Based on the data included in this report, there is a labor market gap in the Bay Region with 840 annual openings for the Machinists and Computer Numerical Controlled occupational cluster and 144 annual (3-year average) awards for

an annual undersupply of 696 students. In the East Bay subregion, there is also a gap with 264 annual openings and 29 annual (3-year average) awards for an annual undersupply of 235 students.

Student Outcomes

Table 8. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 0956.30 - Machining and Machine Tools

Metric Outcomes	Bay All CTE Program	State 0956.30	Bay 0956.30	East Bay 0956.30
Students with a Job Closely Related to Their Field of Study	75%	77%	85%	NA
Median Annual Earnings for SWP Exiting Students	$58,379	$55,040	$63,262	$69,074
Median Change in Earnings for SWP Exiting Students	31%	29%	40%	41%
Exiting Students Who Attained the Living Wage	50%	56%	59%	65%

Source: DataVista Program Median of 2020 to 2022.

Skills, Certifications and Education

Table 9. Top Skills in Job Postings for Machinists and Computer Numerical Controlled Occupations in the Bay Region

Skill	Posting	Skill	Posting
Machining	623	Machinery	191
Computer Numerical Control (CNC)	484	Mastercam (Software)	186
Lathes	440	CNC Programming	180
Tooling	365	CNC Milling	169
CNC Machining	339	Milling	166
Mills	306	Metal Lathes	149
Blueprinting	249	Engineering Drawings	145
Calipers	224	Lifting Ability	141
Micrometer	220	Machine Tools	141
Computer-Aided Manufacturing	219	G-Codes	126

Source: Lightcast 2026.1; "Job Posting Analytics." Apr. 2025 - Mar. 2026

Table 10. Certifications in Job Postings for Machinists And Computer Numerical Controlled Occupations in the Bay Region

Certification	Posting	Certification	Posting
National Apprenticeship Certificate	8	Boom Lift Certification	1

Certification	Posting	Certification	Posting
Forklift Certification	6	National Center for Construction Education & Research (NCCER) Certification	1
Lean Manufacturing Certification	2		

Source: Lightcast 2026.1; "Job Posting Analytics." Apr. 2025 - Mar. 2026

Table 11. Education Requirements for Machinists And Computer Numerical Controlled Occupations in the Bay Region

Education Level	Job Postings	% of Total
High school or GED	279	69%
Associate degree	89	22%
Bachelor's degree & higher	35	9%

Source: Lightcast 2026.1; "Job Posting Analytics." Apr. 2025 - Mar. 2026

Note: 63% of records have been excluded because they do not include a degree level. As a result, the chart above may not be representative of the full sample.

Methodology

Occupations for this report were identified by use of job descriptions and skills listed in O*Net. Labor demand data is sourced from Lightcast occupation and job postings data. Educational supply and student outcomes data is retrieved from multiple sources, including CCCCO Data Mart and CTE Launchboard.

Definitions

Demand refers to average annual openings which includes a combination of both new jobs and replacement jobs between 2024 to 2029. New jobs represent the total number of additional workers required in an occupation, calculated as the difference between the current number of workers and the projected number of unfilled positions. Replacements are jobs that will need to be filled by new hires due to existing workers leaving the occupation. The average annual openings figure is derived by dividing total openings (2024 to 2029) by five years.

Supply refers to the average number of graduates between academic years 2021–2022 and 2023–2024. Graduates include students from community colleges, other two-year private and public institutions, as well as four-year institutions.

Living wage refers to the amount of income required for working families to meet basic needs at a minimally adequate level, considering family composition, ages of children, and geographic differences in costs based on the Self-Sufficiency Standard methodology.

Entry-level wages are the hourly earnings paid to workers who are newly entering an occupation.

Mid-career wages are the hourly earnings paid to workers who have accumulated several years of experience in an occupation, reflecting increased productivity, skill proficiency, and responsibility beyond entry-level roles but short of late-career or senior positions.

Sources

O*Net Online
Lightcast
CTE LaunchBoard www.calpassplus.org
Statewide CTE Outcomes Survey
Employment Development Department Unemployment Insurance Dataset
CCCCO Data Mart

Contacts

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