



Labor Market Analysis for Program Recommendation Semiconductor Processing Technology Occupations West Valley College

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

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Recommendation

Based on all available data, there appears to be an “undersupply” of Semiconductor Processing Technology workers compared to the demand for this cluster of occupations in the Bay Region and in the Silicon Valley Sub-Region (Santa Clara County). There is a projected annual gap of about 824 students in the Bay Region and 182 students in the Silicon Valley Sub-Region.

Introduction

This report provides student outcomes data on employment and earnings for TOP 0945.00 - Industrial Systems Technology and Maintenance 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 colleges in the state and region, as well as to outcomes across all CTE programs at West Valley College and in the region.

This report profiles Semiconductor Processing Technology Occupations in the 12 county Bay Region and in the Silicon Valley Sub-Region for program recommendation at West Valley College.

- **Control and Valve Installers and Repairers, Except Mechanical Door (49-9012):** Install, repair, and maintain mechanical regulating and controlling devices, such as electric meters, gas regulators, thermostats, safety and flow valves, and other mechanical governors.
Typical Entry-Level Educational: High school diploma or equivalent
Typical On-the-Job Training: Moderate-term on-the-job training
Percentage of individuals 25+ with an associate degree, certificate, or some postsecondary coursework as their highest level of education attainment: 46%
- **Industrial Machinery Mechanics (49-9041):** Repair, install, adjust, or maintain industrial production and processing machinery or refinery and pipeline distribution systems. May also install, dismantle, or move machinery and heavy equipment according to plans.
Typical Entry-Level Educational: High school diploma or equivalent
Typical On-the-Job Training: Long-term on-the-job training
Percentage of individuals 25+ with an associate degree, certificate, or some postsecondary coursework as their highest level of education attainment: 42%
- **Maintenance Workers, Machinery (49-9043):** Lubricate machinery, change parts, or perform other routine machinery maintenance.
Typical Entry-Level Educational: High school diploma or equivalent
Typical On-the-Job Training: Long-term on-the-job training

Percentage of individuals 25+ with an associate degree, certificate, or some postsecondary coursework as their highest level of education attainment: 33%

Occupational Demand

Table 1. Employment Outlook for Semiconductor Processing Technology Occupations in the Bay Region

Occupation	2023 Jobs	2028 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	25% Hourly Wage	Median Hourly Wage
Control and Valve Installers and Repairers, Except Mechanical Door	1,203	1,279	77	6%	585	117	\$41	\$51
Industrial Machinery Mechanics	6,008	6,841	833	14%	3,306	661	\$29	\$37
Maintenance Workers, Machinery	638	717	79	12%	390	78	\$26	\$33
Total	7,849	8,837	988	13%	4,281	856	\$31	\$39

Source: Lightcast 2024.3

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 Semiconductor Processing Technology Occupations in the Silicon Valley Sub-Region

Occupation	2023 Jobs	2028 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	25% Hourly Wage	Median Hourly Wage
Control and Valve Installers and Repairers, Except Mechanical Door	190	207	16	9%	89	18	\$48	\$50
Industrial Machinery Mechanics	1,417	1,593	176	12%	756	151	\$29	\$38
Maintenance Workers, Machinery	182	205	23	13%	111	22	\$30	\$35
Total	1,789	2,005	216	12%	956	191	\$31	\$39

Source: Lightcast 2024.3

Silicon Valley Sub-Region includes: Santa Clara County

Job Postings in the Bay Region and Silicon Valley Sub-Region

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

Occupation	Bay Region	Silicon Valley
Industrial Machinery Mechanics	716	233
Control and Valve Installers and Repairers, Except Mechanical Door	189	36
Maintenance Workers, Machinery	4	0

Source: Lightcast 2024.4; "Job Posting Analytics." Dec. 2023 - Nov. 2024

Table 4a. Top Job Titles in Job Postings for Semiconductor Processing Technology Occupations in the Bay Region

Title	Bay	Title	Bay
Field Service Representatives	64	Industrial Maintenance Technicians	17
Equipment Maintenance Technicians	61	Control Systems Technicians	14
Equipment Mechanics	41	Automation Controls Technicians	12
Manufacturing Mechanical Engineers	38	Diesel Mechanic Journeymen	12
Industrial Maintenance Mechanics	36	Air Compressor Technicians	11
Controls Technicians	30	Electromechanical Assembly Technicians	11
Industrial Mechanics	27	Instrument and Controls Technicians	11
Mechanical Assembly Technicians	26	Operator Technicians	10
Valve Technicians	26	Control Panel Technicians	8

Source: Lightcast 2024.4; "Job Posting Analytics." Dec. 2023 - Nov. 2024

Table 4b. Top Job Titles in Job Posting for Semiconductor Processing Technology Occupations in the Silicon Valley Sub-Region

Title	Silicon Valley	Title	Silicon Valley
Manufacturing Mechanical Engineers	37	Equipment Mechanics	4
Equipment Maintenance Technicians	23	Industrial Maintenance Technicians	4
Field Service Representatives	21	Systems Integration Technicians	4
Mechanical Assembly Technicians	17	Automation Controls Technicians	3
Industrial Maintenance Mechanics	16	Electromechanical Assembly Technicians	3
Manufacturing Technicians	7	Field Representatives	3
Controls Technicians	5	Operator Technicians	3
Air Compressor Technicians	4	Systems Technicians	3
Controls Service Technicians	4	Building Automation Technicians	2

Source: Lightcast 2024.4; "Job Posting Analytics." Dec. 2023 - Nov. 2024

Industry Concentration

Table 5. Industries Hiring for Semiconductor Processing Technology Occupations in the Bay Region

Industry - 6 Digit NAICS (No. American Industry Classification) Codes	Jobs in Industry (2023)	Jobs in Industry (2028)	% Change (2023-28)	% Occupation Group in Industry (2023)
Natural Gas Distribution	1,067	1,101	3%	14%

Industry - 6 Digit NAICS (No. American Industry Classification) Codes	Jobs in Industry (2023)	Jobs in Industry (2028)	% Change (2023-28)	% Occupation Group in Industry (2023)
Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	564	616	9%	7%
Semiconductor and Related Device Manufacturing	435	490	13%	6%
Automobile and Light Duty Motor Vehicle Manufacturing	346	463	34%	4%
Wineries	324	376	16%	4%
Local Government, Excluding Education and Hospitals	302	320	6%	4%
Industrial Machinery and Equipment Merchant Wholesalers	241	248	3%	3%
Semiconductor Machinery Manufacturing	199	237	19%	3%
Pharmaceutical Preparation Manufacturing	147	138	-7%	2%
Electronic Computer Manufacturing	99	111	13%	1%

Source: Lightcast 2024.4

Table 6. Top Employers Posting Semiconductor Processing Technology Occupations in the Bay Region and the Silicon Valley Sub-Region

Employer	Bay	Employer	Silicon Valley
Aerotek	27	Cepheid	10
Tesla	26	Intuitive	8
PG&E	17	Aerotek	6
Clean Harbors	16	Google	6
Calpine	13	Western Digital	6
Vulcan Materials	13	Lockheed Martin	5

Source: Lightcast 2024.4; "Job Posting Analytics." Dec. 2023 - Nov. 2024

Educational Supply

There are three community colleges in the Bay Region issuing 29 awards on average annually (last 3 years ending 2021-23) on TOP 0945.00 - Industrial Systems Technology and Maintenance. In the Silicon Valley Sub-Region, there is one community college that issued 9 awards on average annually (last 3 years) on this TOP code.

There is one other CTE educational institution in the Bay Region issuing 3 awards on average annually (last 3 years ending 2020-22) on CIP 47.0303- Industrial Mechanics and Maintenance Technology/Technician There no other CTE

educational institution in the Silicon Valley Sub-Region issuing awards on average annually (last 3 years) on this CIP code.

Table 7a. Community College Awards on TOP 0945.00 - Industrial Systems Technology and Maintenance in the Bay Region

College	Subregion	Associate Degree	High unit Certificate	Low unit Certificate	Total
Laney	East Bay	0	0	2	2
Los Medanos	East Bay	11	6	1	18
San Jose City	Silicon Valley	4	5	0	9
Total	-	15	11	3	29

Source: Data Mart

Note: The annual average for awards is 2020-21 to 2022-23.

Table 7b. Other CTE Institutions Awards on CIP 47.0303- Industrial Mechanics and Maintenance Technology/Technician in the Bay Region

College	Subregion	Certificates of at least 1 but less than 2 years	Total
Aviation Institute of Maintenance-Fremont	East Bay	3	3
Total	-	3	3

Source: Data Mart

Note: The annual average for awards is 2019-20 to 2021 -22.

Gap Analysis

Based on the data included in this report, there is a labor market gap in the Bay Region with 856 annual openings for the Semiconductor Processing Technology occupational cluster and 32 annual (3-year average) awards for an annual undersupply of 824 students. In the Silicon Valley Sub-Region, there is also a gap with 191 annual openings and 9 annual (3-year average) awards for an annual undersupply of 182 students.

Student Outcomes

Table 8. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 0945.00 - Industrial Systems Technology and Maintenance

Metric Outcomes	Bay All CTE Program	West Valley College All CTE Program	State 0945.00	Bay 0945.00	Silicon Valley 0945.00	West Valley College 0945.00
Students with a Job Closely Related to Their Field of Study	74%	67%	74%	79%	71%	NA
Median Annual Earnings for SWP Exiting Students	\$53,090	\$45,753	\$49,735	\$61,436	\$71,804	NA
Median Change in Earnings for SWP Exiting Students	24%	25%	35%	43%	34%	NA
Exiting Students Who Attained the Living Wage	54%	38%	66%	61%	72%	NA

Metric Outcomes	Bay All CTE Program	West Valley College All CTE Program	State 0945.00	Bay 0945.00	Silicon Valley 0945.00	West Valley College 0945.00
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Source: Launchboard Strong Workforce Program Median of 2018 to 2021.

Skills, Certifications and Education

Table 9. Top Skills in Job Postings for Semiconductor Processing Technology Occupations in the Bay Region

Skill	Posting	Skill	Posting
Preventive Maintenance	162	Programmable Logic Controllers	88
Hand Tools	155	Hydraulics	84
Machinery	142	Equipment Maintenance	82
Field Service Management	116	Valves (Piping)	82
Mechanics	112	HVAC	81
Power Tool Operation	106	Automation	79
Control Systems	105	Electrical Equipment	78
Blueprinting	95	Project Management	78
Industrial Repair And Maintenance	94	Electrical Wiring	74
Electrical Systems	93	Welding	73

Source: Lightcast 2024.4; "Job Posting Analytics." Dec. 2023 - Nov. 2024

Table 10. Certifications in Job Postings for Semiconductor Processing Technology Occupations in the Bay Region

Certification	Posting	Certification	Posting
Automotive Service Excellence (ASE) Certification	10	Contractor License	5
Airframe & Powerplant (A&P) Certificate	8	System Operator Certification	5
Forklift Certification	7	EPA Universal Certification	3

Source: Lightcast 2024.4; "Job Posting Analytics." Dec. 2023 - Nov. 2024

Table 11. Education Requirements for Semiconductor Processing Technology Occupations in the Bay Region

Education Level	Job Postings	% of Total
High school or GED	374	58%
Associate degree	115	18%
Bachelor's degree & higher	160	25%

Source: Lightcast 2024.4; "Job Posting Analytics." Dec. 2023 - Nov. 2024

Note: 42% 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 CCCCCO Data Mart and CTE Launchboard.

Sources

O*Net Online

Lightcast

CTE LaunchBoard www.calpassplus.org

Statewide CTE Outcomes Survey

Employment Development Department Unemployment Insurance Dataset

CCCCCO Data Mart

Contacts

For more information, please contact:

- Yumi Huang, Research Analyst, Bay Region Center of Excellence, yuhuang@cabrillo.edu or (831) 275-0043
- Marcela Reyes, Director, Research and Center of Excellence, mareyes@cabrillo.edu or (831) 219-8875