



Labor Market Analysis for Program Recommendation

Semiconductor Manufacturing Occupations

West Valley College

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

May 2025

Recommendation

Based on all available data, there appears to be an “undersupply” of Semiconductor Manufacturing 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 381 students in the Bay Region and 186 students in the Silicon Valley Sub-Region.

Introduction

This report provides student outcomes data on employment and earnings for TOP 0956.00 - Manufacturing and Industrial Technology 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 Manufacturing Occupations in the 12 county Bay Region and in the Silicon Valley Sub-Region for program recommendation at West Valley College.

- **Semiconductor Processing Technicians (51-9141):** Perform any or all of the following functions in the manufacture of electronic semiconductors: load semiconductor material into furnace; saw formed ingots into segments; load individual segment into crystal growing chamber and monitor controls; locate crystal axis in ingot using x-ray equipment and saw ingots into wafers; and clean, polish, and load wafers into series of special purpose furnaces, chemical baths, and equipment used to form circuitry and change conductive properties.
 - 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: 27%

Occupational Demand

Table 1. Employment Outlook for Semiconductor Manufacturing 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
Semiconductor Processing Technicians	3,663	3,619	-45	-1%	2,021	404	\$20	\$22
Total	3,663	3,619	-44	-1%	2,021	404	\$20	\$22

Occupation	2023 Jobs	2028 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	25% Hourly Wage	Median Hourly Wage
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Source: Lightcast 2025.1

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 Semiconductor Manufacturing 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
Semiconductor Processing Technicians	1,787	1,719	-68	-4%	931	186	\$22	\$23
Total	1,787	1,719	-68	-4%	931	186	\$22	\$23

Source: Lightcast 2025.1

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
Semiconductor Processing Technicians	163	92

Source: Lightcast 2025.1; "Job Posting Analytics." May. 2024 - Apr. 2025

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

Title	Bay	Title	Bay
Semiconductor Engineers	48	Equipment Maintenance Technicians	2
Wafer Fabrication Operators	14	Fabrication Supervisors	2
Semiconductor Process Engineers	12	Industry Account Managers	2
Wafer Fabrication Technicians	8	Japanese Bilingual Administrative Assistants	2
Manufacturing Account Managers	4	Machine Designers	2
Manufacturing Software Engineers	4	Manufacturing Equipment Engineers	2
Failure Analysis Engineers	3	Manufacturing Managers	2
Global Commodity Managers	3	Metrology Engineers	2
Capital Equipment Specialists	2	Product Manufacturing Engineers	2

Source: Lightcast 2025.1; "Job Posting Analytics." May. 2024 - Apr. 2025

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

Title	Silicon Valley	Title	Silicon Valley
Semiconductor Engineers	32	Japanese Bilingual Administrative Assistants	2
Semiconductor Process Engineers	5	Machine Designers	2
Wafer Fabrication Operators	5	Manufacturing Equipment Engineers	2
Manufacturing Account Managers	4	Product Manufacturing Engineers	2
Wafer Fabrication Technicians	4	Test Process Engineers	2
Failure Analysis Engineers	3	Capital Equipment Specialists	1
Global Commodity Managers	3	Capital Program Managers	1
Equipment Maintenance Technicians	2	Data Science Interns	1
Industry Account Managers	2	Executive Sales Directors	1

Source: Lightcast 2025.1; "Job Posting Analytics." May. 2024 - Apr. 2025

Industry Concentration

Table 5. Industries Hiring for Semiconductor Manufacturing 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)
Semiconductor and Related Device Manufacturing	1,289	1,317	2%	60%
Other Electronic Component Manufacturing	235	208	-12%	10%
Printed Circuit Assembly (Electronic Assembly) Manufacturing	204	197	-3%	9%
Bare Printed Circuit Board Manufacturing	157	133	-15%	7%
Electronic Computer Manufacturing	155	103	-34%	5%
Electronic Connector Manufacturing	70	78	12%	3%
Manufacturing and Reproducing Magnetic and Optical Media	35	28	-22%	2%
Capacitor, Resistor, Coil, Transformer, and Other Inductor Manufacturing	14	16	10%	1%
Crop Production	14	13	-5%	1%
Machine Shops	NA	NA	NA%	0%

Source: Lightcast 2025.1

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

Employer	Bay	Employer	Silicon Valley
Google	14	Activ8 Recruitment & Solutions	5
Tellus Solutions	8	Day & Zimmermann	4
Keysight	7	Nvidia	4
Activ8 Recruitment & Solutions	6	Amtex Enterprises	3
Inphenix	6	Infinera	3
Western Digital	6	ATR International	2

Source: Lightcast 2025.1; "Job Posting Analytics." May. 2024 - Apr. 2025

Educational Supply

There are four community colleges in the Bay Region issuing 23 awards on average annually (last 3 years ending 2023-24) on TOP 0956.00 - Manufacturing and Industrial Technology. In the Silicon Valley Sub-Region, there are no community colleges that issued awards on average annually (last 3 years) on this TOP code.

Table 7. Community College Awards on TOP 0956.00 - Manufacturing and Industrial Technology in the Bay Region

College	Subregion	Associate Degree	High unit Certificate	Low unit Certificate	Total
Cabrillo	SC-Monterey	0	0	1	1
Diablo Valley	East Bay	3	0	2	5
Ohlone	East Bay	1	0	5	6
Solano	North Bay	6	1	4	11
Total	-	10	1	12	23

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 404 annual openings for the Semiconductor Manufacturing occupational cluster and 23 annual (3-year average) awards for an annual undersupply of 381 students. In the Silicon Valley Sub-Region, there is also a gap with 186 annual openings and no annual (3-year average) awards for an annual undersupply of 186 students.

Student Outcomes

Table 8. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 0956.00 - Manufacturing and Industrial Technology

Metric Outcomes	Bay All CTE Program	West Valley College All CTE Program	State 0956.00	Bay 0956.00	Silicon Valley 0956.00	West Valley College 0956.00
Students with a Job Closely Related to Their Field of Study	74%	67%	78%	90%	92%	NA
Median Annual Earnings for SWP Exiting Students	\$53,090	\$45,753	\$50,131	\$66,463	\$71,754	NA
Median Change in Earnings for SWP Exiting Students	24%	25%	40%	55%	40%	NA
Exiting Students Who Attained the Living Wage	54%	38%	68%	70%	66%	NA

Source: Launchboard Strong Workforce Program Median of 2018 to 2021.

Skills and Education

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

Skill	Posting	Skill	Posting
Semiconductors	148	Project Management	18
Electrical Engineering	44	Python (Programming Language)	18
Wafer Fabrication	43	Cleanrooms	17
New Product Development	28	Continuous Improvement Process	17
Statistical Process Controls	28	Automation	16
Physics	24	Marketing	16
Manufacturing Processes	21	Manufacturing Execution System (MES)	15
Materials Science	21	Process Engineering	15
Metrology	20	Computer Science	14
Data Analysis	18	Generally Accepted Auditing Standards	14

Source: Lightcast 2025.1; "Job Posting Analytics." May. 2024 - Apr. 2025

Table 10. Education Requirements for Semiconductor Manufacturing Occupations in the Bay Region

Education Level	Job Postings	% of Total
High school or GED	17	9%
Associate degree	8	4%
Bachelor's degree & higher	166	87%

Source: Lightcast 2025.1; "Job Posting Analytics." May. 2024 - Apr. 2025

Education Level	Job Postings	% of Total
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Note: 23% 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 Unemploy

ment Insurance Dataset

CCCCCO Data Mart

Contacts

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