



Labor Market Analysis for Program Recommendation

Welding Occupations

Las Positas College

Prepared by the San Francisco Bay Center of Excellence for Labor Market Research

November 2023

Recommendation

Based on all available data, there appears to be an “undersupply” of Welding workers compared to the demand for this cluster of occupations in the Bay region and in the East Bay sub-region (Alameda, Contra Costa counties). There is a projected annual gap of about 914 students in the Bay region and 381 students in the East Bay Sub-Region.

Introduction

This report provides student outcomes data on employment and earnings for TOP 0956.50 - Welding 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 Las Positas College and in the region.

This report profiles Welding Occupations in the 12 county Bay region and in the East Bay sub-region for a proposed new Production Welder program at Las Positas College.

- **Welders, Cutters, Solderers, and Brazers (51-4121):** Use hand-welding, flame-cutting, hand soldering, or brazing equipment to weld or join metal components or to fill holes, indentations, or seams of fabricated metal products.

Entry-Level Educational Requirement: High school diploma or equivalent
 Training Requirement: Moderate-term on-the-job training
 Percentage of Community College Award Holders or Some Postsecondary Coursework: 32%
- **Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders (51-4122):** Set up, operate, or tend welding, soldering, or brazing machines or robots that weld, braze, solder, or heat treat metal products, components, or assemblies. Includes workers who operate laser cutters or laser-beam machines.

Entry-Level Educational Requirement: High school diploma or equivalent
 Training Requirement: Moderate-term on-the-job training
 Percentage of Community College Award Holders or Some Postsecondary Coursework: 32%

Occupational Demand

Table 1. Employment Outlook for Welding Occupations in Bay Region

Occupation	2021 Jobs	2026 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	25% Hourly Earning	Median Hourly Wage
Welders, Cutters, Solderers, and Brazers	5,684	6,624	940	17%	4,318	864	\$22	\$26

Occupation	2021 Jobs	2026 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	25% Hourly Earning	Median Hourly Wage
Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	877	989	112	13%	631	126	\$18	\$24
Total	6,561	7,614	1,053	16%	4,949	990		

Source: Lightcast 2022.3

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 Welding Occupations in East Bay Sub-region

Occupation	2021 Jobs	2026 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	25% Hourly Earning	Median Hourly Wage
Welders, Cutters, Solderers, and Brazers	2,170	2,635	465	21%	1,788	358	\$21	\$27
Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	322	412	90	28%	289	58	\$17	\$22
Total	2,492	3,048	556	22%	2,077	416		

Source: Lightcast 2022.3

East Bay Sub-Region includes: Alameda, Contra Costa Counties

Job Postings in Bay Region and East Bay Sub-Region

Table 3. Number of Job Postings by Occupation for latest 12 months (Nov. 2022 - Oct. 2023)

Occupation	Bay Region	East Bay
Welders, Cutters, Solderers, and Brazers	389	154
Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	67	18

Source: Lightcast

Table 4a. Top Job Titles for Welding Occupations for latest 12 months (Nov. 2022 - Oct. 2023) - Bay Region

Title	Bay	Title	Bay
Welders	134	TIG Welders	9
Soldering Technicians	38	Certified Welding Inspectors	8
Welders/Fabricators	20	Finishing Technicians	7
Robot Operators	18	Welding Inspectors	7
Journeyman Welders	13	AWS Certified Welding Inspectors	6
SMT Operators	12	MIG/TIG Welders	6
Rework Technicians	11	Robotic Welders	6
Mill Operators	10	MIG Welders	5
Robotics Techs	10	Spot Welders	5

Title	Bay	Title	Bay
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Source: Lightcast

Table 4b. Top Job Titles for Welding Occupations for latest 12 months (Nov. 2022 - Oct. 2023) - East Bay Sub-Region

Title	East Bay	Title	East Bay
Welders	56	Robotic Welders	4
Journeyman Welders	8	Combo Drivers	3
Welders/Fabricators	8	Fabrication Welders	3
Certified Welding Inspectors	7	MIG/TIG Welders	3
Robot Operators	7	Orbital Analysts	3
TIG Welders	6	Robotics Techs	3
Soldering Technicians	5	SMT Operators	3
AWS Certified Welding Inspectors	4	Solderers	3
MIG Welders	4	Structural Welders	3

Source: Lightcast

Industry Concentration

Table 5. Industries hiring Welding Workers in Bay Region

Industry - 6 Digit NAICS (No. American Industry Classification) Codes	Jobs in Industry (2021)	Jobs in Industry (2026)	% Change (2021-26)	% Occupation Group in Industry (2022)
Semiconductor Machinery Manufacturing	683	727	7%	9%
Sheet Metal Work Manufacturing	479	536	12%	7%
Automobile and Light Duty Motor Vehicle Manufacturing	546	574	5%	6%
Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	453	428	-5%	6%
Machine Shops	302	360	19%	4%
Semiconductor and Related Device Manufacturing	294	301	2%	4%
Railroad Rolling Stock Manufacturing	NA	314	NA%	3%
Temporary Help Services	216	221	3%	3%
Electronic Computer Manufacturing	114	186	64%	2%
Plumbing, Heating, and Air-Conditioning Contractors	132	133	1%	2%

Source: Lightcast 2022.3

Table 6. Top Employers Posting Welding Occupations in Bay Region and East Bay Sub-Region (Nov. 2022 - Oct. 2023)

Employer	Bay	Employer	East Bay
Aerotek	31	Randstad	11
Randstad	29	Center Mfg.	9
Sanmina	19	Adecco	6
Tradesmen International	12	Aerotek	6
Center Mfg	9	Southwire	6
Comtech Ef Data	8	Bloom Energy	4

Source: Lightcast

Educational Supply

There are 10 community colleges in the Bay Region issuing 61 awards on average annually (last 3 years ending 2021-22) on TOP 0956.50 - Welding Technology. In the East Bay Sub-Region, there are four (4) community colleges that issued 35 awards on average annually (last 3 years) on this TOP code.

There is one (1) other CTE educational institution in the Bay Region issuing 15 awards on average annually (last 3 years ending 2021-22) on CIP 48.0508 - Welding Technology/Welder. There are no other CTE educational institution in the East Bay Sub-Region issuing awards on average annually (last 3 years) on this CIP code.

Table 7a. Community College Awards on TOP 0956.50 - Welding Technology in Bay Region

College	Subregion	Associate Degree	High unit Certificate	Low unit Certificate	Total
Cabrillo	SC-Monterey	0	0	8	8
Chabot	East Bay	3	0	4	7
Hartnell	SC-Monterey	4	2	1	7
Laney	East Bay	6	0	4	10
Las Positas	East Bay	1	0	2	3
Los Medanos	East Bay	7	3	5	15
Napa	North Bay	2	1	1	4
San Francisco	Mid-Peninsula	0	0	1	1
Santa Rosa	North Bay	0	0	2	2
Solano	North Bay	1	1	2	4
Total		24	7	30	61

Source: Data Mart

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

Table 7b. Other CTE Institutions Awards on CIP 48.0508 Welding Technology/Welder in Bay Region

College	Subregion	Certificates of at least 1 but < 2 years	Total
CET-Watsonville	SC-Monterey	15	15
Total		15	15

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 large labor market gap in the Bay region with 990 annual openings for the Welding occupational cluster and 76 annual (3-year average) awards for an annual undersupply of 914 students. In the East Bay Sub-Region, there is also a gap with 416 annual openings and 35 annual (3-year average) awards for an annual undersupply of 381 students.

Student Outcomes

Table 8. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 0956.50 - Welding Technology

Metric Outcomes	Bay All CTE Programs	Las Positas All CTE Programs	State 0956.50	Bay 0956.50	East Bay 0956.50	Las Positas 0956.50
Students with a Job Closely Related to Their Field of Study	74%	69%	70%	70%	74%	64%
Median Annual Earnings for SWP Exiting Students	\$53,090	\$49,986	\$39,556	\$46,652	\$49,362	\$50,860
Median Change in Earnings for SWP Exiting Students	24%	27%	40%	32%	30%	50%
Exiting Students Who Attained the Living Wage	54%	56%	59%	56%	58%	61%

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

Skills, Certifications and Education

Table 9. Top Skills for Welding Occupations in Bay Region (Nov. 2022 - Oct. 2023)

Skill	Posting	Skill	Posting
Welding	156	Sheet Metal	36
Metal Inert Gas (MIG) Welding	115	Welding Symbols	36
Gas Tungsten Arc Welding	94	Grinding Machine	34
Fabrication	81	Machining	32
Soldering	76	Bandsaws	31
Hand Tools	71	Brazing (Metal Work)	31
Welding Equipment	52	Overhead Crane Operation	31
Printed Circuit Board	45	Tooling	31
Aluminum	43	Grinding	30
Blueprinting	36	Microscopy	29

Source: Lightcast

Table 10. Certifications for Welding Occupations in Bay Region (Nov. 2022 - Oct. 2023)

Certification	Posting	Certification	Posting
Valid Driver's License	39	American Concrete Institute (ACI) Certification	4
Certified Welding Inspector	22	ACI Concrete Strength Testing Technician	4
ACI Concrete Field Testing Technician	8	Structural Welding Special Inspector	4
Certified Welder	8	CDL Class A License	3
American Welding Society Certification	7	Security Clearance	3
Transportation Worker Identification Credential (TWIC) Card	6	30-Hour OSHA General Industry Card	2
ASNT Non-Destructive Tester	5	10-Hour OSHA General Industry Card	2
6G Welding Certification	4	Forklift Certification	2
NICET Level II Certification	4	CDL Class C License	2
NICET Construction Material Testing Certification	4		

Source: Lightcast

Table 11. Education Requirements for Welding Occupations in Bay Region

Education Level	Job Postings	% of Total
High school or GED	164	76%
Associate degree	25	12%
Bachelor's degree & higher	26	12%

Source: Lightcast

Note: 58% 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 CCCC Data Mart and CTE Launchboard.

Sources

O*Net Online
 Lightcast
 CTE LaunchBoard www.calpassplus.org
 Launchboard
 Statewide CTE Outcomes Survey
 Employment Development Department Unemployment Insurance Dataset
 Living Insight Center for Community Economic Development
 Chancellor's Office MIS system

Contacts

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