



Labor Market Analysis for Program Recommendation

Welding Occupations

Cabrillo College

Prepared by the San Francisco Bay Center of Excellence for Labor Market Research
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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 SC-Monterey sub-region (Monterey, San Benito, Santa Cruz counties). There is a projected annual gap of about 675 students in the Bay region and 92 students in the SC-Monterey 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 Cabrillo College and in the region.

This report profiles Welding Occupations in the 12 county Bay region and in the SC-Monterey sub-region for a Regional program recommendation for a proposed Basic Welding and Advance Welding program at Cabrillo 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	2020 Jobs	2025 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	25% Hourly Earning	Median Hourly Wage
Welders, Cutters, Solderers, and Brazers	5,341	5,788	447	8%	3,382	676	\$21	\$25
Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	534	578	44	8%	338	68	\$17	\$21
Total	5,874	6,366	492	8%	3,721	744		

Source: EMSI 2021.4

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 SC-Monterey Sub-region

Occupation	2020 Jobs	2025 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	25% Hourly Earning	Median Hourly Wage
Welders, Cutters, Solderers, and Brazers	747	815	68	9%	477	95	\$21	\$26
Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	36	41	5	14%	26	5	\$18	\$23
Total	783	856	73	9%	503	100		

Source: EMSI 2021.4

SC-Monterey Sub-Region includes: Monterey, San Benito, Santa Cruz Counties

Job Postings in Bay Region and SC-Monterey Sub-Region

Table 3. Number of Job Postings by Occupation for latest 12 months (May 2021 - Apr 2022)

Occupation	Bay Region	SC-Monterey
Welders, Cutters, and Welder Fitters	608	33
Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	81	1
Solderers and Brazers	10	0

Source: Burning Glass

Table 4a. Top Job Titles for Welding Occupations for latest 12 months (May 2021 - Apr 2022) - Bay Region

Title	Bay	Title	Bay
Welder	169	Welder-Gas	6
Welder/Fabricator	29	Quartz Welder	6
Tig Welder	28	Welding Technician	5

Title	Bay	Title	Bay
Soldering Technician	24	Tig Welder/Fabricator	5
Certified Welder	11	Surface Finishing Technician	5
Welders	10	Gas Metal Arc Welder	5
Robot Operator	8	Wire Bond Technician	4
Certified Welding Inspector	8	Welder Helper	4

Source: Burning Glass

Table 4b. Top Job Titles for Welding Occupations for latest 12 months (May 2021 - Apr 2022) - SC-Monterey Sub-Region

Title	SC-Monterey	Title	SC-Monterey
Welder	11	Laser Welder	1
Welder/Fabricator	4	Pipe Welder	1
Fabricator/Welder	2	Precision Sheet Metal Welder	1
Journeyman Welder/Fabricator	2	Structural Welder	1
Welder Senior - Container	2	Tig Welder/Fitter	1
Bridgwire Welder	1	Welder 2Nd	1
Certified Welder	1	Welder, Container	1
Entry Level Robot Operator	1	Welder-Fabricator	1

Source: Burning Glass

Industry Concentration

Table 5. Industries hiring Welding Workers in Bay Region

Industry - 6 Digit NAICS (No. American Industry Classification) Codes	Jobs in Industry (2020)	Jobs in Industry (2025)	% Change (2020-25)	% Occupation Group in Industry (2020)
Semiconductor Machinery Manufacturing	508	663	31%	9%
Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	465	481	3%	8%
Automobile Manufacturing	322	604	88%	7%
Sheet Metal Work Manufacturing	383	464	21%	7%
Machine Shops	283	308	9%	5%
Temporary Help Services	180	213	19%	3%
Electronic Computer Manufacturing	179	194	9%	3%
Semiconductor and Related Device Manufacturing	152	152	0%	3%

Industry - 6 Digit NAICS (No. American Industry Classification) Codes	Jobs in Industry (2020)	Jobs in Industry (2025)	% Change (2020-25)	% Occupation Group in Industry (2020)
Plumbing, Heating, and Air-Conditioning Contractors	121	130	8%	2%
Commercial and Institutional Building Construction	122	125	3%	2%

Source: EMSI 2021.4

Table 6. Top Employers Posting Welding Occupations in Bay Region and SC-Monterey Sub-Region (May 2021 - Apr 2022)

Employer	Bay	Employer	SC-Monterey
Sanmina	16	Rdo Equipment	3
Pacific Gas & Electric	16	Waste Management	2
The Kleinfelder Group	14	Joby Aviation	2
Human Bees	8	Workers Com	1
Schnitzer Steel Industries	7	Thermo Fisher Scientific Inc	1
Mdc Precision	7	Rd Offutt Farms	1
Heat Control Incorporated	7	Advanced Disposal	1

Source: Burning Glass

Educational Supply

There are nine (9) community colleges in the Bay Region issuing 69 awards on average annually (last 3 years ending 2018-19) on TOP 0956.50 Welding Technology. In the SC-Monterey Sub-Region, there are two (2) community colleges that issued 8 awards on average annually (last 3 years) on this TOP code.

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

College	Subregion	Associate	Certificate Low	Total
Cabrillo	SC-Monterey	0	2	2
Chabot	East Bay	2	1	3
Hartnell	SC-Monterey	3	3	6
Laney	East Bay	4	8	12
Las Positas	East Bay	4	3	7
Los Medanos	East Bay	5	16	21
Napa	North Bay	3	0	3
Santa Rosa	North Bay	0	9	9
Solano	North Bay	2	4	6
Total		23	46	69

College	Subregion	Associate	Certificate Low	Total
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Source: Data Mart

Note: The annual average for awards is 2016-17 to 2018-19.

Gap Analysis

Based on the data included in this report, there is a large labor market gap in the Bay region with 744 annual openings for the Welding occupational cluster and 69 annual (3-year average) awards for an annual undersupply of 675 students. In the SC-Monterey Sub-Region, there is also a gap with 100 annual openings and 8 annual (3-year average) awards for an annual undersupply of 92 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	Cabrillo All CTE Programs	State 0956.50	Bay 0956.50	SC- Monterey 0956.50	Cabrillo 0956.50
Students with a Job Closely Related to Their Field of Study	74%	80%	69%	68%	56%	N/A
Median Annual Earnings for SWP Exiting Students	\$47,419	\$40,665	\$36,070	\$44,395	\$41,740	\$42,779
Median Change in Earnings for SWP Exiting Students	23%	23%	36%	32%	26%	26%
Exiting Students Who Attained the Living Wage	52%	47%	58%	57%	54%	49%

Source: Launchboard Strong Workforce Program Median of 2017 to 2020.

Skills, Certifications and Education

Table 9. Top Skills for Welding Occupations in Bay Region (May 2021 - Apr 2022)

Skill	Posting	Skill	Posting
Welding	551	Forklift Operation	44
Mig and Tig Welding	268	Personal Protective Equipment (PPE)	43
Repair	167	Power Tools	41
Hand Tools	102	Gas-tungsten Arc Welding (GTAW)	39
Welding Equipment	100	Manual Dexterity	38
Soldering	95	Arc Welding	35
Machinery	68	Manufacturing Processes	34
Cleaning	60	Basic Mathematics	33
Scheduling	60	Quality Assurance and Control	33
Calipers	59	Vaccines	31
Grinders	53	Microscope	30

Skill	Posting	Skill	Posting
Vaccination	52	Schematic Diagrams	30
Gas-metal Arc Welding (GMAW)	45	Flux Core Welding	29
Lifting Ability	45	Shop Drawings	29

Source: Burning Glass

Table 10. Certifications for Welding Occupations in Bay Region (May 2021 - Apr 2022)

Certification	Posting	Certification	Posting
Driver's License	82	Security Clearance	5
Welding Certification	66	Soldering Certification	3
Certified Welding Inspector	26	OSHA Forklift Certification	3
IPC Certification	25	American Society for Nondestructive Testing Certification	3
American Society of Mechanical Engineers Certified	11	Certified Structural Welder	2

Source: Burning Glass

Note: 72% of records have been excluded because they do not include a certification. As a result, the chart above may not be representative of the full sample.

Table 11. Education Requirements for Welding Occupations in Bay Region

Education (minimum advertised)	Latest 12 Mos. Postings	Percent 12 Mos. Postings
High school or vocational training	275	94%
Associate's degree	5	2%
Bachelor's degree and higher	14	4%

Source: Burning Glass

Note: 44% 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 skills listed in O*Net descriptions and job descriptions in Burning Glass. Labor demand data is sourced from Economic Modeling Specialists International (EMSI) occupation data and Burning Glass job postings data. Educational supply and student outcomes data is retrieved from multiple sources, including CTE Launchboard and CCCCCO Data Mart.

Sources

O*Net Online

Labor Insight/Jobs (Burning Glass)

Economic Modeling Specialists International (EMSI)

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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