



Welding Technology (TOP: 0956.50)

October 2020

Prepared by the South Central Coast Center of Excellence for
Labor Market Research

Program Recommendation

This report was compiled by the South Central Coast¹ Center of Excellence to provide regional labor market data for the program recommendation – Welding Technology. This report can help determine whether there is demand in the local labor market that is not being met by the supply from programs of study (CCC and non-CCC) that align with this occupation group.

Key Findings

- In the South Central Coast region, **the number of jobs related to Welding Technology are expected to decrease** for Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic, and Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders; **increase** for Welders, Cutters, Solderers, and Brazers, and **remain steady** for Layout Workers, Metal and Plastic.
- Welding Technology is anticipated to experience a **high risk of automation** for all four related occupations.
- In 2019 there were 186 regional completions in programs related to the occupations identified as related to Welding Technology and 240 openings, indicating an **undersupply**.
- Typical entry-level education is a **high school diploma or equivalent** for all related occupations.
- Completers of regional Welding Technology programs from the 2017-2018 academic year had a **median annual wage upon completion of \$32,044**.
- 67% of students are **employed within a year** after completing a program.
- 51% of students **attained a living wage** within a year of completion.
- +56% **change in earnings** for completers.
- 84% of students were **part time**, 21% **skill builders**, 33% **first-generation**, and 73% **economically disadvantaged**.

¹ The South Central Coast Region consists of San Luis Obispo County, Santa Barbara County, Ventura County, and the following cities from North Los Angeles County: Canyon Country, Castaic, Lake Hughes, Lancaster, Littlerock, Llano, Newhall, Palmdale, Pearblossom, Santa Clarita, Stevenson Ranch, and Valencia.

Occupation Codes and Descriptions

There are four occupations in the standard occupational classification (SOC) system that were identified as related to Welding Technology for this analysis. The occupation titles and descriptions, as well as reported job titles are included in Exhibit 1.

Exhibit 1 – Occupation, description, and sample job titles

SOC Code	Title	Description	Sample of Reported Job Titles
51-4121	Welders, Cutters, Solderers, and Brazers	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.	Aluminum Welder, Fabrication Welder, Fabricator, Fitter/Welder, Maintenance Worker, MIG Welder (Metal Inert Gas Welder), Sub Arc Operator, Welder, Welder-Fitter, Welder/Fabricator
51-4122	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	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.	Braze Operator, Fabricator, Finishing Technician, Fitter-Welder, Machine Operator, MIG Welder, Operator, Robot Operator, Spot Welder, Technical Associate (TA)
51-4191	Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic	Set up, operate, or tend heating equipment, such as heat-treating furnaces, flame-hardening machines, induction machines, soaking pits, or vacuum equipment to temper, harden, anneal, or heat-treat metal or plastic objects.	Batch Heat Treat Operator, Burner, Coating Line Worker, Furnace Operator, Heat Treat Furnace Operator, Heat Treat Operator, Heat Treat Technician, Heat Treater, Machine Operator, Scarf and Anneal Operator
51-4192	Layout Workers, Metal and Plastic	Lay out reference points and dimensions on metal or plastic stock or workpieces, such as sheets, plates, tubes, structural shapes, castings, or machine parts, for further processing. Includes shipfitters.	Development Mechanic, Fabricator, Layout Fabricator, Layout Fitter, Layout Inspector, Layout Man, Layout Mechanic, Layout Technician (Layout Tech), Layout Worker, Quality Technician

Source: O*NET Online

Current and Future Employment

In the South Central Coast region, the number of jobs related to Welding Technology are expected to decrease for Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic and Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders; increase for Welders, Cutters, Solderers, and Brazers, and remain steady for Layout Workers, Metal and Plastic.

Exhibit 2 – Five-year projections for Welding Technology in the South Central Coast region

SOC	Occupation	2019 Jobs	2024 Jobs	2019-2024 Change	2019-2024 % Change
51-4121	Welders, Cutters, Solderers, and Brazers	1,650	1,726	76	5%
51-4122	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	245	231	-14	-6%
51-4191	Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic	56	53	-3	-5%
51-4192	Layout Workers, Metal and Plastic	14	14	0	0%

Source: Economic Modeling Specialists International (EMSI)

Earnings

In the South Central Coast region, the average wage for the listed occupations is \$19.98 per hour.

Exhibit 3 contains hourly wages and annual average earnings for these occupations. Entry-level hourly earnings are represented by the 25th percentile of wages, median hourly earnings are represented by the 50th percentile of wages, and experienced hourly earnings are represented by the 75th percentile of wages, demonstrating various levels of employment.

Exhibit 3 – Earnings for Welding Technology in the South Central Coast region

SOC	Occupation	Entry-Level Hourly Earnings	Median Hourly Earnings	Experienced Hourly Earnings
51-4121	Welders, Cutters, Solderers, and Brazers	\$16.01	\$19.89	\$25.92
51-4122	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	\$16.46	\$19.73	\$23.13
51-4191	Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic	\$19.59	\$23.49	\$29.58
51-4192	Layout Workers, Metal and Plastic	\$16.15	\$20.01	\$26.04

Source: Economic Modeling Specialists International (EMSI)

Employer Job Postings

In this research brief, real-time labor market information is used to provide a more nuanced view of the current job market, as it captures job advertisements for occupations relevant to the field of study. Employer job postings are consulted to understand who is looking for welders, and what they are looking for in potential candidates. To identify job postings related to Welding Technology following standard occupational classifications were used:

51-4121	Welders, Cutters, Solderers, and Brazers
51-4122	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders
51-4191	Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic
51-4192	Layout Workers, Metal and Plastic

Top Occupations

In 2019, there were 116 employer postings for the occupations related to Welding Technology.

Exhibit 4 – Top occupations in job postings and risk of automation tables

SOC Code	Occupation	Job Postings, Full Year 2019
51-4121	Welders, Cutters, Solderers, and Brazers	107
51-4122	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	5
51-4191	Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic	4
51-4192	Layout Workers, Metal and Plastic	0

Source: Labor Insight/Jobs (Burning Glass)

SOC Code	Occupation	Risk of Automation
51-4121	Welders, Cutters, Solderers, and Brazers	High
51-4122	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	High
51-4191	Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic	High
51-4192	Layout Workers, Metal and Plastic	High

Source: Labor Insight/Jobs (Burning Glass)

Top Titles

The top job titles for employers posting ads for jobs related to Welding Technology are listed in Exhibit 5. Welder is mentioned as the job title in 35% of all relevant job postings (41 postings).

Exhibit 5 –Job titles

Title	Job Postings, Full Year 2019
Welder	41
Production Welder	6
Induction Brazer	5
Aluminum TIG Welder	3
TIG Welder	3

Source: Labor Insight/Jobs (Burning Glass)

Top Employers

Exhibit 6 lists the major employers hiring professionals in the Welding Technology field. The top employer posting job ads was Entegris Incorporated. The top worksite cities in the region for these occupations were Santa Clarita, Simi Valley, Goleta, Moorpark, and Santa Maria.

Exhibit 6 – Top employers (n=52)

Employer	Job Postings, Full Year 2019
Entegris Incorporated	5
Lockheed Martin Corporation	5
Meggitt PLC	3
Woodward Incorporated	3
Atlas Copco	2

Source: Labor Insight/Jobs (Burning Glass)

Skills

Welding is the most sought after skill for employers hiring for jobs related Welding Technology.

Exhibit 7 –Job skills (n=102)

Skills	Job Postings, Full Year 2019
Welding	86
Mig and Tig Welding	38
Repair	25
Engineering Drawings	20
Lifting Ability	20
Basic Mathematics	19
Power Tools	18

Source: Labor Insight/Jobs (Burning Glass)

Industry Concentration

Exhibit 8 shows the industries with most Welding Technology postings in the South Central Coast. Note: 11% of records have been excluded because they do not include an industry. As a result, the chart below may not be representative of the full sample.

Exhibit 8 – Industries employing the most in the Welding Technology field, 2019

Industry	Occupation Group Jobs in Industry	% of Occupation Group in Industry
Construction	51	51.5%
Manufacturing	35	35.4%
Professional, Scientific, and Technical Services	4	4.0%
Administrative and Support and Waste Management and Remediation Services	3	3.0%
Public Administration	3	3.0%

Source: Labor Insight/Jobs (Burning Glass)

Education and Training

Exhibit 9 shows the typical entry-level education requirement for the occupations of interest, along with the typical on-the-job training needed to attain competency in the occupation.

Exhibit 9 – Education and training requirements

SOC	Occupation	Typical entry-level education	Typical on-the-job training
51-4121	Welders, Cutters, Solderers, and Brazers	High school diploma or equivalent	Moderate-term on-the-job training
51-4122	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	High school diploma or equivalent	Moderate-term on-the-job training
51-4191	Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic	High school diploma or equivalent	Moderate-term on-the-job training
51-4192	Layout Workers, Metal and Plastic	High school diploma or equivalent	Moderate-term on-the-job training

Source: Bureau of Labor Statistics Employment Projections (Educational Attainment)

Regional Completions and Openings

There were 186 regional completions (2019) and 240 regional openings (2019) in the South Central Coast region in programs related to the occupations identified as related to Welding Technology.

Exhibit 10 – Completions and Openings

5 Regional Institutions had Related Programs (2019)	186 Regional Completions (2019)	240 Annual Openings (2019)
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Source: Economic Modeling Specialists International (EMSI)

Related Programs

CIP Code	Program	Completions (2019)
48.0508	Welding Technology/Welder	160
48.0503	Machine Shop Technology/Assistant	16
48.0501	Machine Tool Technology/Machinist	10

Source: Economic Modeling Specialists International (EMSI)

Student Outcomes

The CTE LaunchBoard provides student outcome data on the effectiveness of CTE programs. The following student outcome information was collected from current students and exiters of Welding Technology Programs (TOP: 0956.50) for the 2017-18 academic year.

- Completers of regional or statewide Welding Technology programs from the 2017-2018 academic year had a **median annual wage upon completion of \$32,044**.
- 67% of students are **employed within a year** after completing a program.
- 51% of students **attained a living wage** within a year of completion.
- +56% **change in earnings** for completers.
- 84% of students were **part time**, 21% **skill builders**, 33% **first-generation**, and 73% **economically disadvantaged**.

Source: CTE LaunchBoard

Sources

O*Net Online, Labor Insight/Jobs (Burning Glass), Economic Modeling Specialists International (EMSI), MIT Living Wage Calculator, Bureau of Labor Statistics (BLS) Education Attainment, California Community Colleges Chancellor's Office Management Information Systems (MIS) Data Mart, CTE LaunchBoard, Statewide CTE Outcomes Survey, Employment Development Department Unemployment Insurance Dataset

Notes

Data included in this analysis represent the labor market demand for relevant positions most closely related to Welding Technology. Traditional labor market information was used to show current and projected employment based on data trends, as well as annual average awards granted by regional community colleges. Real-time labor market information captures job post advertisements for occupations relevant to the field of study and can signal demand and show what employers are looking for in potential employees, but is not a perfect measure of the quantity of open positions. All representations have been produced from primary research and/or secondary review of publicly and/or privately available data and/or research reports. The most recent data available at the time of the analysis was examined; however, data sets are updated regularly and may not be consistent with previous reports. Efforts have been made to qualify and validate the accuracy of the data and findings; however, neither the Centers of Excellence for Labor Market Research (COE), COE host district, nor California Community Colleges Chancellor's Office are responsible for the applications or decisions made by individuals and/or organizations based on this study or its recommendations.