



Labor Market Analysis for Program Recommendation

Electrician Occupations

San Jose City College

Prepared by the San Francisco Bay Center of Excellence for Labor Market Research
July 2022

Recommendation

Based on all available data, there appears to be an “undersupply” of Electrician 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 2,242 students in the Bay region and 344 students in the Silicon Valley Sub-Region.

Introduction

This report provides student outcomes data on employment and earnings for TOP 0952.20 Electrical 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 San Jose City College and in the region.

This report profiles Electrician Occupations in the 12 county Bay region and in the Silicon Valley sub-region for a proposed new Electrician Trainee program at San Jose City College.

- Electricians (47-2111):** Install, maintain, and repair electrical wiring, equipment, and fixtures. Ensure that work is in accordance with relevant codes. May install or service street lights, intercom systems, or electrical control systems. Excludes “Security and Fire Alarm Systems Installers” (49-2098).
 Entry-Level Educational Requirement: High school diploma or equivalent
 Training Requirement: Apprenticeship
 Percentage of Community College Award Holders or Some Postsecondary Coursework: 48%

Occupational Demand

Table 1. Employment Outlook for Electrician 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
Electricians	18,951	20,589	1,637	9%	12,066	2,413	\$28	\$40
Total	18,951	20,589	1,637	9%	12,066	2,413	\$28	\$40

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 Electrician Occupations in Silicon Valley 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
Electricians	3,901	4,345	444	11%	2,543	509	\$27	\$35
Total	3,901	4,345	444	11%	2,543	509	\$27	\$35

Source: EMSI 2021.4

Silicon Valley Sub-Region includes: Santa Clara County

Job Postings in Bay Region and Silicon Valley Sub-Region**Table 3. Number of Job Postings by Occupation for latest 12 months (July 2021 - June 2022)**

Occupation	Bay Region	Silicon Valley
Electricians	1,582	362

Source: Burning Glass

Table 4a. Top Job Titles for Electrician Occupations for latest 12 months (July 2021 - June 2022) - Bay Region

Title	Bay	Title	Bay
Electrician	356	Solar Electrician	18
Journeyman Electrician	147	Electrician Trainee	15
Journeyman Lineman - Ibew	67	State Certified Electrician	15
Electrician - Ibew	65	High Voltage Electrician	14
Maintenance Electrician	38	Solar Roof Lead	13
Industrial Electrician	27	Residential Electrician	12
Licensed Electrician	27	Commercial Electrician	11
Certified Electrician	21	Service Electrician	11
Electrical Installer	20	Commercial Service Electrician	10

Source: Burning Glass

Table 4b. Top Job Titles for Electrician Occupations for latest 12 months (July 2021 - June 2022)**Silicon Valley Sub-Region**

Title	Silicon Valley	Title	Silicon Valley
Electrician	79	Journeyman Lineman - Ibew	5
Journeyman Electrician	34	Grounds Lead	4
Maintenance Electrician	8	Journeyman Residential Electrician	4
Electrician - Ibew	7	Maintenance Electrician- Journeyman	4
High Voltage Electrician	7	Ride Electrician	4

Title	Silicon Valley	Title	Silicon Valley
Electrical Installer	6	Senior Residential Electrician	4
Licensed Electrician	6	Service Electrician	4
Solar Electrician	6	Solar Roof Lead	4
Electrician Specialist	5	Commercial Solar Electrician	3

Source: Burning Glass

Industry Concentration

Table 5. Industries hiring Electricians 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)
Electrical Contractors and Other Wiring Installation Contractors	13,600	15,984	18%	72%
Automobile Manufacturing	356	651	83%	2%
Residential Remodelers	457	526	15%	2%
Plumbing, Heating, and Air-Conditioning Contractors	384	427	11%	2%
Local Government, Excluding Education and Hospitals	314	317	1%	2%
Temporary Help Services	262	302	15%	1%
Commercial and Institutional Building Construction	237	246	4%	1%
New Single-Family Housing Construction (except For-Sale Builders)	194	199	3%	1%
All Other Specialty Trade Contractors	193	197	2%	1%
Power and Communication Line and Related Structures Construction	158	172	9%	1%

Source: EMSI 2021.4

Table 6. Top Employers Posting Electrician Occupations in Bay Region and Silicon Valley Sub-Region (July 2021 - June 2022)

Employer	Bay	Employer	Silicon Valley
Pacific Gas and Electric Company	111	Stanford University	17
Tesla	52	The Engie	10
Pg U0026E Corporation	35	Tesla	10
Sunrun	29	Sunpower Corporation	10
Sunpower Corporation	28	Pacific Gas & Electric Company	10
Anheuser-Busch Companies, Inc.	19	Sunrun	7
Stanford University	17	Lockheed Martin Corporation	7

Employer	Bay	Employer	Silicon Valley
Life Chiropractic College West	16	Kellogg Company	7
Lawrence Livermore National Laboratory	15	Northrop Grumman	6
Helix Electric Incorporated	14	Best Buy	6

Source: Burning Glass

Educational Supply

There are three (3) community colleges in the Bay Region issuing 171 awards on average annually (last 3 years ending 2018-19) on TOP 0952.20 Electrical. In the Silicon Valley Sub-Region, there is one (1) community college that issued 165 awards on average annually (last 3 years) on this TOP code.

Table 7. Community College Awards on TOP 0952.20 Electrical in Bay Region

College	Subregion	Associate	Certificate Low	Total
Foothill	Silicon Valley	3	162	165
San Francisco	Mid-Peninsula	0	1	1
San Mateo	Mid-Peninsula	0	5	5
Total		3	168	171

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 2,413 annual openings for the Electrician occupational cluster and 171 annual (3-year average) awards for an annual undersupply of 2,242 students. In the Silicon Valley Sub-Region, there is also a gap with 509 annual openings and 165 annual (3-year average) awards for an annual undersupply of 344 students.

Student Outcomes

Table 8. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 0952.20 Electrical

Metric Outcomes	Bay All CTE Programs	San Jose City All CTE Programs	State 0952.20	Bay 0952.20	Silicon Valley 0952.20	San Jose City 0952.20
Students with a Job Closely Related to Their Field of Study	74%	72%	85%	96%	97%	88%
Median Annual Earnings for SWP Exiting Students	\$47,419	\$44,332	\$54,588	\$100,488	\$106,606	\$54,304
Median Change in Earnings for SWP Exiting Students	23%	30%	57%	171%	190%	21%
Exiting Students Who Attained the Living Wage	52%	39%	72%	81%	83%	52%

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

Skills, Certifications and Education

Table 9. Top Skills for Electrician Occupations in Bay Region (July 2021 - June 2022)

Skill	Posting	Skill	Posting
Electrical Work	1,291	Scheduling	175
Repair	828	Electrical Wiring	160
Wiring	394	Customer Service	152
Electrical Systems	376	Debris and Litter Control	133
Hand Tools	366	Electrical Engineering	128
Power Tools	309	Machinery	126
Schematic Diagrams	261	Conduit Bending	113
Transformers	249	Circuit Breakers	110
Occupational Health and Safety	239	National Electrical Code	100
Personal Protective Equipment (PPE)	234	Hazard Identification	96
Electrical Experience	195	Industrial Electrical Experience	95
Electrical Diagrams / Schematics	187	Power Generation	88
Forklift Operation	184	Predictive/Preventative Maintenance	85
Lifting Ability	183	Electrical Codes	84

Source: Burning Glass

Table 10. Certifications for Electrician Occupations in Bay Region (July 2021 - June 2022)

Certification	Posting	Certification	Posting
Driver's License	480	Certified Crane Operator	7
Electrician Certification	299	Certified Installer	6
Aerial Bucket Certification	65	First Aid Cpr Aed	4
Cdl Class C	64	Contractor's License	4
North American Board of Energy Practitioners (NABCEP)	24	Hazardous Materials Certification	3
Electrical Certification	19	Ca License	3
Security Clearance	13	CDL Class A	3
Electrical Contractor	10	National Electric Code Certification	2
Occupational Safety and Health Administration Certification	9	Civil Service Certification	2
Master Electrician License	9	Boiler Operator License	2

Certification	Posting	Certification	Posting
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Source: Burning Glass

Note: 50% 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 Electrician Occupations in Bay Region

Education (minimum advertised)	Latest 12 Mos. Postings	Percent 12 Mos. Postings
High school or vocational training	503	95%
Associate's degree	26	5%

Source: Burning Glass

Note: 67% 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 CCCCO 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

For more information, please contact:

- Leila Jamoosian, Research Analyst, for Bay Area Community College Consortium (BACCC) and Centers of Excellence (CoE), leila@baccc.net
- John Carrese, Director, San Francisco Bay Center of Excellence for Labor Market Research, jcarrese@ccsf.edu or (415) 267-6544