



Labor Market Analysis for Program Recommendation

Robotics Occupations

Cabrillo College

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

August 2023

Recommendation

Based on all available data, there appears to be an “undersupply” of Robotics workers in the Bay Region compared to the demand for this occupation. There is a projected annual gap of about 56 students in the Bay region using traditional labor market data for Electro-Mechanical and Mechatronics Technologists and Technicians. Using job postings data, there were 54 postings in the past 12 months for Robotics Technicians and 27 postings for Automation Technicians and no colleges issuing awards on TOP 0935.00 - Electro-Mechanical Technology. In the SC-Monterey sub-region (Monterey, San Benito, Santa Cruz counties) there were no annual openings for Electro-Mechanical and Mechatronics Technologists and Technicians and no job postings for Robotics Technicians and or Automation Technicians.

Introduction

This report provides student outcomes data on employment and earnings for TOP 0935.00 - Electro-Mechanical 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 Robotics Occupations in the 12 county Bay region and in the SC-Monterey sub-region for a proposed new program at Cabrillo College.

- **Electro-Mechanical and Mechatronics Technologists and Technicians (17-3024):** Operate, test, maintain, or calibrate unmanned, automated, servo-mechanical, or electromechanical equipment. May operate unmanned submarines, aircraft, or other equipment at worksites, such as oil rigs, deep ocean exploration, or hazardous waste removal. May assist engineers in testing and designing robotics equipment.
 Entry-Level Educational Requirement: Associate’s degree
 Training Requirement: None
 Percentage of Community College Award Holders or Some Postsecondary Coursework: 51%

Occupational Demand

Table 1. Employment Outlook for Robotics 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
Electro-Mechanical and Mechatronics Technologists and Technicians	481	509	28	6%	278	56	\$21	\$30
Total	481	509	28	6%	278	56	\$21	\$30

Occupation	2021 Jobs	2026 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	25% Hourly Earning	Median Hourly Wage
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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 Robotics Occupations in SC-Monterey 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
Electro-Mechanical and Mechatronics Technologists and Technicians	NA	NA	0	0%	0	0		
Total	0	0	0		0	0		

Source: Lightcast 2022.3

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 (Aug. 2022 - July 2023)

Occupation	Bay Region	SC-Monterey
Electro-Mechanical and Mechatronics Technologists and Technicians	1,013	14

Source: Lightcast

Table 4a. Top Job Titles for Robotics Occupations for latest 12 months (Aug. 2022 - July 2023) - Bay Region

Title	Bay	Title	Bay
Calibration Technicians	120	Rework Operators	21
Instrument Technicians	99	Assembly Technicians	15
Electronics Technicians	98	Electrical and Instrumentation Technicians	13
Electromechanical Assemblers	65	Automotive Diagnostic Technicians	12
Robotics Technicians	54	Formulation Technicians	11
Instrumentation Technicians	52	Instrument and Controls Technicians	11
Rework Technicians	34	Lead Instrument Technicians	11
Electromechanical Technicians	29	Electronic Repair Technicians	10
Automation Technicians	27	Fabrication Technicians	9

Source: Lightcast

Table 4b. Top Job Titles for Robotics Occupations for latest 12 months (Aug. 2022 - July 2023) - SC-Monterey Sub-Region

Title	SC-Monterey
Electronics Technicians	6
Electrical and Instrumentation Technicians	2
Supply Technicians	2
Electronic Assemblers	1
Processing Technicians	1
Product Testers	1

Industry Concentration

Table 5. Industries hiring Robotics 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)
Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)	79	162	106%	16%
Research and Development in Biotechnology (except Nanobiotechnology)	54	126	133%	11%
Engineering Services	51	92	81%	10%
Semiconductor and Related Device Manufacturing	33	37	12%	4%
Analytical Laboratory Instrument Manufacturing	12	42	244%	4%
Testing Laboratories	27	33	21%	3%
Electronic Computer Manufacturing	34	32	-3%	3%
Semiconductor Machinery Manufacturing	22	28	28%	3%
Instrument Manufacturing for Measuring and Testing Electricity and Electrical Signals	14	22	63%	2%
Temporary Help Services	24	23	-5%	2%

Source: Lightcast 2022.3

Table 6. Top Employers Posting Robotics Occupations in Bay Region and SC-Monterey Sub-Region (Aug. 2022 - July 2023)

Employer	Bay	Employer	SC-Monterey
Randstad	52	City of Santa Cruz	1
United States Department of Veterans Affairs	22	Desert Star Systems	1
Aerotek	15	Digital Dynamics	1

Employer	Bay	Employer	SC-Monterey
Katalyst Healthcares & Life Sciences	15	Memorial Healthcare System	1
Trescal	15	Mobile Technologies	1
Tellus Solutions	14	Monterey Peninsula Surgery Centers	1

Source: Lightcast

Educational Supply

There are no community colleges in the Bay Region issuing awards on average annually (last 3 years ending 2021-22) on TOP 0935.00 - Electro-Mechanical Technology.

Gap Analysis

Based on all available data, there appears to be an “undersupply” of Robotics workers in the Bay Region compared to the demand for this occupation. There is a projected annual gap of about 56 students in the Bay region using traditional labor market data for Electro-Mechanical and Mechatronics Technologists and Technicians. Using job postings data, there were 54 postings in the past 12 months for Robotics Technicians and 27 postings for Automation Technicians. In the SC-Monterey sub-region (Monterey, San Benito, Santa Cruz counties) there were no annual openings for Electro-Mechanical and Mechatronics Technologists and Technicians and no job postings for Robotics Technicians and or Automation Technicians.

Student Outcomes

Table 8. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 0935.00 - Electro-Mechanical Technology

Metric Outcomes	Bay All CTE Program	Cabrillo All CTE Program	State 0935.00	Bay 0935.00	SC-Monterey 0935.00	Cabrillo 0935.00
Students with a Job Closely Related to Their Field of Study	74%	80%	94%	N/A	N/A	N/A
Median Annual Earnings for SWP Exiting Students	\$53,090	\$46,381	\$52,190	\$73,243	N/A	N/A
Median Change in Earnings for SWP Exiting Students	24%	23%	32%	N/A	N/A	N/A
Exiting Students Who Attained the Living Wage	54%	44%	76%	N/A	N/A	N/A

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

Skills and Education

Table 9. Top Skills for Robotics Occupations in Bay Region (Aug. 2022 - July 2023)

Skill	Posting	Skill	Posting
Electromechanics	243	Electrical Wiring	114
Test Equipment	233	ISO 9000 Series	101
Calibration	211	Robotics	87
Electronics	203	Programmable Logic Controllers	86

Skill	Posting	Skill	Posting
Instrumentation	176	Electronic Circuits	80
Soldering	176	New Product Development	73
Automation	149	Optics	73
Hand Tools	148	Medical Devices	69
Oscilloscope	131	Electromechanical Assembly	68
Good Manufacturing Practices	122	Geometry	68

Source: Lightcast

Table 10. Education Requirements for Robotics Occupations in Bay Region (Aug. 2022 - July 2023)

Education Level	Job Postings	% of Total
High school or GED	266	33%
Associate degree	324	41%
Bachelor's degree & higher	206	26%

Source: Lightcast

Note: 43% 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 CCCCO 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

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