



# Labor Market Analysis for Program Recommendation Engineering Technology 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 Engineering Technology 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 648 students in the Bay region and 11 students in the SC-Monterey Sub-Region.

## Introduction

This report provides student outcomes data on employment and earnings for TOP 0924.00 Engineering Technology, General (requires Trigonometry) 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 Engineering Technology Occupations in the 12 county Bay region and in the SC-Monterey sub-region for a proposed Engineering Technology certificate and a Computer Aided Drafting and Design certificate at Cabrillo College.

- **Architectural and Civil Drafters (17-3011):** Prepare detailed drawings of architectural and structural features of buildings or drawings and topographical relief maps used in civil engineering projects, such as highways, bridges, and public works. Use knowledge of building materials, engineering practices, and mathematics to complete drawings.  
Entry-Level Educational Requirement: Associate’s degree  
Training Requirement: None  
Percentage of Community College Award Holders or Some Postsecondary Coursework: 52%
- **Electrical and Electronics Drafters (17-3012):** Prepare wiring diagrams, circuit board assembly diagrams, and layout drawings used for the manufacture, installation, or repair of electrical equipment.  
Entry-Level Educational Requirement: Associate’s degree  
Training Requirement: None  
Percentage of Community College Award Holders or Some Postsecondary Coursework: 58%
- **Mechanical Drafters (17-3013):** Prepare detailed working diagrams of machinery and mechanical devices, including dimensions, fastening methods, and other engineering information.  
Entry-Level Educational Requirement: Associate’s degree  
Training Requirement: None  
Percentage of Community College Award Holders or Some Postsecondary Coursework: 58%

- **Drafters, All Other (17-3019):** All drafters not listed separately.  
 Entry-Level Educational Requirement: Associate's degree  
 Training Requirement: None  
 Percentage of Community College Award Holders or Some Postsecondary Coursework: 58%

## Occupational Demand

**Table 1. Employment Outlook for Engineering Technology 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
Architectural and Civil Drafters	3,835	3,799	-35	-1%	1,849	370	\$26	\$30
Electrical and Electronics Drafters	1,184	1,197	14	1%	587	117	\$27	\$37
Mechanical Drafters	1,536	1,536	0	0%	751	150	\$27	\$36
Drafters, All Other	394	382	-12	-3%	187	37	\$23	\$31
<b>Total</b>	<b>6,948</b>	<b>6,914</b>	<b>-34</b>	<b>0%</b>	<b>3,374</b>	<b>674</b>		

Source: EMSI 2022.1

**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 Engineering Technology 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
Architectural and Civil Drafters	121	120	-1	0%	62	12	\$25	\$30
Electrical and Electronics Drafters	34	33	0	-1%	17	3	\$15	\$35
Mechanical Drafters	69	72	3	5%	38	8	\$23	\$30
Drafters, All Other	0	0	0	0%	0	0		
<b>Total</b>	<b>223</b>	<b>225</b>	<b>2</b>	<b>1%</b>	<b>116</b>	<b>23</b>		

Source: EMSI 2022.1

**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 (July 2021 - June 2022)**

Occupation	Bay Region	SC-Monterey
Drafters, All Other	1,244	1,244
Electrical Drafters	861	861

Occupation	Bay Region	SC-Monterey
Mechanical Drafters	638	638
Electronic Drafters	392	392
Civil Drafters	190	190
Architectural Drafters	106	106

Source: Burning Glass

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

Title	Bay	Title	Bay
Mechanical Designer	96	Plumbing Designer	34
Cad Designer	76	Autocad Drafter	31
Cad Drafter	57	Senior Analog Design Engineer	30
Electrical Designer	51	Mechanical Drafter	29
Cad Engineer	49	Detailer	25
Analog Design Engineer	43	Pcb Designer	20
Head Of Design	40	Plumbing Designer, II	20
Drafter	37	Architectural Drafter	19
Drafter/Designer	36	Model Maker	19

Source: Burning Glass

**Table 4b. Top Job Titles for Engineering Technology Occupations for latest 12 months (July 2021 - June 2022)  
SC-Monterey Sub-Region**

Title	SC-Monterey	Title	SC-Monterey
Cad Drafter	7	Drafter & Designer	2
Landscape Architectural Drafter	4	Detailer	2
Mechanical Drafter Detailer	3	Architectural Drafter	2
Senior Surface Designer	2	Solid Works Designer	1
Draftsman	2	Map Drafting Technician	1

Source: Burning Glass

## Industry Concentration

**Table 5. Industries hiring Engineering Technology 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)
Engineering Services	1,939	1,927	-1%	28%
Architectural Services	1,360	1,275	-6%	19%
Landscape Architectural Services	269	252	-6%	4%
Plumbing, Heating, and Air-Conditioning Contractors	178	185	4%	3%
Electrical Contractors and Other Wiring Installation Contractors	167	181	8%	3%
Surveying and Mapping (except Geophysical) Services	165	180	9%	2%
Semiconductor and Related Device Manufacturing	159	149	-6%	2%
Building Inspection Services	129	144	12%	2%
Custom Computer Programming Services	127	140	11%	2%
Semiconductor Machinery Manufacturing	109	125	15%	2%

Source: EMSI 2022.1

**Table 6. Top Employers Posting Engineering Technology Occupations in Bay Region and SC-Monterey Sub-Region (July 2021 - June 2022)**

Employer	Bay	Employer	SC-Monterey
Apple Inc.	91	Roeslein Associates	2
Intel Corporation	85	Kasavan Architects	2
Lucid Motors Inc	58	Houzz	2
Tesla	38	Fortive Corporation	2
Advanced Micro Devices, Inc.	38	Calpine Corporation	2
Actalent	36	Lewis Builders Inc.	2
Qualcomm	30	Joby Aviation	1
Pacific Gas & Electric Company	28	Monterey Energy Group	1
Marvell	26	Monterey County	1
Google Inc.	26	Plantronics Inc.	1

Source: Burning Glass

## Educational Supply

There are four (4) community colleges in the Bay Region issuing 26 awards on average annually (last 3 years ending 2018-19) on TOP 0924.00 Engineering Technology, General (requires Trigonometry). In the SC-Monterey Sub-Region, there is one (1) community college (Cabrillo) that issued 12 awards on average annually (last 3 years) on this TOP code.

**Table 7. Community College Awards on TOP 0924.00 Engineering Technology, General (requires Trigonometry) in Bay Region**

College	Subregion	Associate	Certificate Low	Total
Cabrillo	SC-Monterey	2	10	12
Las Positas	East Bay	12	0	12
San Francisco	Mid-Peninsula	1	0	1
San Mateo	Mid-Peninsula	1	0	1
<b>Total</b>		<b>16</b>	<b>10</b>	<b>26</b>

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 674 annual openings for the Engineering Technology occupational cluster and 26 annual (3-year average) awards for an annual undersupply of 648 students. In the SC-Monterey Sub-Region, there is also a gap with 23 annual openings and 12 annual (3-year average) awards for an annual undersupply of 11 students.

### Student Outcomes

**Table 8. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 0924.00 Engineering Technology, General (requires Trigonometry)**

Metric Outcomes	Bay All CTE Program	Cabrillo All CTE Program	State 0924.00	Bay 0924.00	SC-Monterey 0924.00	Cabrillo 0924.00
Students with a Job Closely Related to Their Field of Study	74%	80%	66%	68%	100%	100%
Median Annual Earnings for SWP Exiting Students	\$47,419	\$40,665	\$36,469	\$48,280	\$43,660	\$45,552
Median Change in Earnings for SWP Exiting Students	23%	23%	37%	28%	19%	18%
Exiting Students Who Attained the Living Wage	52%	47%	59%	52%	49%	52%

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

### Skills, Certifications and Education

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

Skill	Posting	Skill	Posting
AutoCAD	1,137	3D Modeling/Design	274
Computer Aided Drafting/Design (CAD)	718	PERL Scripting Language	274
Revit	492	Analog Design	254

Skill	Posting	Skill	Posting
Scheduling	394	Budgeting	242
Python	373	Vaccination	234
Project Management	363	Complementary Metal Oxide Semiconductor (CMOS)	222
Simulation	363	Customer Service	200
Mechanical Engineering	327	Computer Engineering	199
SolidWorks	317	Tool Command Language (TCL)	195
Circuit Design	316	Verilog	189
Calculation	314	Product Development	184
Mixed-Signal	306	Debugging	176
Mechanical Design	288	PTC Creo	174
Schematic Diagrams	281	Digital Design	172

Source: Burning Glass

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

Certification	Posting	Certification	Posting
Driver's License	151	Drafting Certification	8
Security Clearance	39	Data Center Design Consultant	8
AutoCAD Certification	30	American Society of Mechanical Engineers (ASME) Certified	7
Leadership In Energy and Environmental Design (LEED) Certified	21	Geometric Dimensioning and Tolerancing Professional	6
Computer Aided Design (CAD) Certification	21	Project Management Certification	5
American Board for Engineering and Technology (ABET) Accredited	16	Drafting and Design	5
Engineer in Training Certification	15	Automation Certification	5
LEED AP	13	Architecture License	5
Licensed Professional Engineer	9	North American Board of Energy Practitioners (NABCEP)	4
Licensed Professional Surveyor	8	Certified Survey Technician (CST)	4

Source: Burning Glass

Note: 89% 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 Engineering Technology Occupations in Bay Region**

Education (minimum advertised)	Latest 12 Mos. Postings	Percent 12 Mos. Postings
High school or vocational training	413	19%
Associate's degree	352	16%
Bachelor's degree	1,379	65%

Source: Burning Glass

## 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/](http://www.calpassplus.org/Launchboard/)  
Statewide CTE Outcomes Survey  
Employment Development Department Unemployment Insurance Dataset  
Living Insight Center for Community Economic Development  
Chancellorâ€™s Office MIS system

## Contacts

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