



Labor Market Analysis for Program Recommendation Engineering Technician Occupations Laney College

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

Recommendation

Based on all available data, there appears to be an “undersupply” of Engineering Technician workers compared to the demand for this cluster of occupations in the Bay region and in the East Bay sub-region (Alameda, Contra Costa counties). There is a projected annual gap of about 4,194 students in the Bay region and 1,107 students in the East Bay 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 Laney College and in the region.

This report profiles Engineering Technician Occupations in the 12 county Bay region and in the East Bay sub-region for a proposed new program at Laney 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%
- **Industrial Engineering Technologists and Technicians (17-3026):** Apply engineering theory and principles to problems of industrial layout or manufacturing production, usually under the direction of engineering staff. May perform time and motion studies on worker operations in a variety of industries for purposes such as establishing standard production rates or improving efficiency.
Entry-Level Educational Requirement: Associate’s degree
Training Requirement: None
Percentage of Community College Award Holders or Some Postsecondary Coursework: 51%
- **Mechanical Engineering Technologists and Technicians (17-3027):** Apply theory and principles of mechanical engineering to modify, develop, test, or calibrate machinery and equipment under direction of engineering staff or physical scientists.
Entry-Level Educational Requirement: Associate’s degree

Training Requirement: None

Percentage of Community College Award Holders or Some Postsecondary Coursework: 51%

- **Engineering Technologists and Technicians, Except Drafters, All Other (17-3029):** All engineering technologists and technicians, except drafters, not listed separately.
Entry-Level Educational Requirement: Associate's degree
Training Requirement: None
Percentage of Community College Award Holders or Some Postsecondary Coursework: NA%
- **Maintenance and Repair Workers, General (49-9071):** Perform work involving the skills of two or more maintenance or craft occupations to keep machines, mechanical equipment, or the structure of an establishment in repair. Duties may involve pipe fitting; boiler making; insulating; welding; machining; carpentry; repairing electrical or mechanical equipment; installing, aligning, and balancing new equipment; and repairing buildings, floors, or stairs. Excludes "Maintenance Workers, Machinery" (49-9043).
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: 40%

Occupational Demand

Table 1. Employment Outlook for Engineering Technician 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
Electro-Mechanical and Mechatronics Technologists and Technicians	550	490	-60	-11%	250	50	\$21	\$30
Industrial Engineering Technologists and Technicians	1,059	1,131	72	7%	661	132	\$27	\$32
Mechanical Engineering Technologists and Technicians	1,143	1,480	337	29%	996	199	\$26	\$35
Engineering Technologists and Technicians, Except Drafters, All Other	3,764	3,601	-163	-4%	1,819	364	\$22	\$26
Maintenance and Repair Workers, General	33,481	34,442	961	3%	17,397	3,479	\$20	\$26
Total	39,997	41,145	1,148	3%	21,123	4,224		

Source: EMSI 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 Engineering Technician Occupations in East Bay 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
Electro-Mechanical and Mechatronics Technologists and Technicians	168	161	-7	-4%	80	16	\$16	\$26
Industrial Engineering Technologists and Technicians	271	322	51	19%	192	38	\$26	\$31
Mechanical Engineering Technologists and Technicians	306	431	125	41%	308	62	\$26	\$33
Engineering Technologists and Technicians, Except Drafters, All Other	1,105	1,053	-52	-5%	505	101	\$21	\$21
Maintenance and Repair Workers, General	9,001	9,179	178	2%	4,504	901	\$19	\$24
Total	10,851	11,146	295	3%	5,589	1,118		

Source: EMSI 2022.3

East Bay Sub-Region includes: Alameda, Contra Costa Counties**Job Postings in Bay Region and East Bay Sub-Region****Table 3. Number of Job Postings by Occupation for latest 12 months (Nov. 2021 – Oct. 2022)**

Occupation	Bay Region	East Bay
Maintenance and Repair Workers, General	18,719	6,423
Engineering Technicians, Except Drafters, All Other	3,145	784
Industrial Engineering Technicians	3,134	1,168
Electro-Mechanical Technicians	879	292
Mechanical Engineering Technicians	707	370

Source: Burning Glass

**Table 4a. Top Job Titles for Engineering Technician Occupations for latest 12 months (Nov. 2021 – Oct. 2022)
Bay Region**

Title	Bay	Title	Bay
Maintenance Technician	2,760	Field Service Engineer	222
Field Service Technician	916	Maintenance Technician III	206
Service Technician	802	Maintenance Worker	206
Installation Technician	653	Maintenance Technician I	178

Engineering Technician	495	Engineer	148
Facilities Technician	398	Maintenance Engineer	131
Technician	275	Facilities Assistant	122
Maintenance	274	Building Engineer	109
Maintenance Technician II	265	Test Operator	109

Source: Burning Glass

Table 4b. Top Job Titles for Engineering Technician Occupations for latest 12 months (Nov. 2021 – Oct. 2022) East Bay Sub-Region

Title	East Bay	Title	East Bay
Maintenance Technician	903	Maintenance Technician II	86
Field Service Technician	369	Maintenance Worker	77
Service Technician	304	Swimming Pool Technician	60
Installation Technician	239	Facilities Assistant	51
Engineering Technician	192	Service Technician I	51
Facilities Technician	119	Maintenance Technician I	50
Maintenance Technician III	108	Field Service Engineer	49
Technician	89	Automotive Maintenance Technician	43
Maintenance	87	Guitar Repair Technician	41

Source: Burning Glass

Industry Concentration

Table 5. Industries hiring Engineering Technician 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)
Local Government, Excluding Education and Hospitals	3,413	3,318	-3%	8%
Residential Property Managers	2,535	2,429	-4%	6%
Offices of Real Estate Agents and Brokers	2,149	2,351	9%	5%
Hotels (except Casino Hotels) and Motels	1,658	1,564	-6%	5%
Lessors of Residential Buildings and Dwellings	1,377	1,165	-15%	3%
Religious Organizations	958	977	2%	2%
Elementary and Secondary Schools (Local Government)	738	889	20%	2%
Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)	896	974	9%	2%

Colleges, Universities, and Professional Schools (State Government)	810	721	-11%	2%
Nonresidential Property Managers	781	670	-14%	2%

Source: EMSI 2022.3

Table 6. Top Employers Posting Engineering Technician Occupations in Bay Region and East Bay Sub-Region (Nov. 2021 – Oct. 2022)

Employer	Bay	Employer	East Bay
Tesla	315	Tesla	245
Avalonbay Communities Inc.	277	Avalonbay Communities Inc.	127
Fpi Management Inc.	172	Lawrence Livermore National Laboratory	91
Marriott International Inc.	164	Fpi Management Inc.	70
Cepheid	144	Sysco Corporation	68
Greystar Real Estate Partners Llc	138	Amazon	58

Source: Burning Glass

Educational Supply

There are three (3) community colleges in the Bay Region issuing 30 awards on average annually (last 3 years ending 2019-20) on TOP 0924.00 Engineering Technology, General (requires Trigonometry). In the East Bay Sub-Region, there is one (1) community college that issued 11 awards on average annually (last 3 years) on this TOP code.

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

College	Subregion	Associate Degree	High unit Certificate	Low unit Certificate	Total
Cabrillo	SC-Monterey	2	1	14	17
Las Positas	East Bay	11	0	0	11
San Francisco	Mid-Peninsula	2	0	0	2
Total		15	1	14	30

Source: Data Mart

Note: The annual average for awards is 2017-18 to 2019-20.

Gap Analysis

Based on the data included in this report, there is a large labor market gap in the Bay region with 4,224 annual openings for the Engineering Technician occupational cluster and 30 annual (3-year average) awards for an annual undersupply of 4,194 students. In the East Bay Sub-Region, there is also a gap with 1,118 annual openings and 11 annual (3-year average) awards for an annual undersupply of 1,107 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 Programs	Laney All CTE Programs	State 0924.00	Bay 0924.00	East Bay 0924.00	Laney 0924.00
Students with a Job Closely Related to Their Field of Study	74%	73%	66%	68%	N/A	N/A
Median Annual Earnings for SWP Exiting Students	\$47,419	\$40,660	\$36,469	\$48,280	\$46,937	N/A
Median Change in Earnings for SWP Exiting Students	23%	14%	37%	28%	N/A	N/A
Exiting Students Who Attained the Living Wage	52%	52%	59%	52%	N/A	N/A

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

Skills, Certifications and Education

Table 9. Top Skills for Engineering Technician Occupations in Bay Region (Nov. 2021 – Oct. 2022)

Skill	Posting	Skill	Posting
Repair	16,492	Vaccination	2,154
Plumbing	7,699	Schematic Diagrams	2,012
HVAC	5,515	Facility Maintenance	1,953
Predictive/Preventative Maintenance	5,240	Property Management	1,678
Painting	5,183	Technical Support	1,607
Carpentry	4,189	Welding	1,532
Cleaning	3,874	Customer Contact	1,485
Customer Service	3,736	Drywall	1,427
Scheduling	3,432	Test Equipment	1,425
Hand Tools	2,900	Electrical Systems	1,315
Power Tools	2,692	Calibration	1,230
Occupational Health and Safety	2,391	Equipment Maintenance	1,226
Lifting Ability	2,228	Wiring	1,195
Machinery	2,166	Apartment Maintenance	1,167

Source: Burning Glass

Table 10. Certifications for Engineering Technician Occupations in the Bay Region (Nov. 2021 – Oct. 2022)

Certification	Posting	Certification	Posting
Driver's License	8,626	Cdl Class B	92
Cdl Class C	235	IT Infrastructure Library (ITIL) Certification	90
EPA CFC/HCFC Certification	213	CDL Class A	90
Environmental Protection Agency Certification	209	Project Management Certification	81
OSHA Forklift Certification	175	Maintenance Certification	67
Automotive Service Excellence (ASE) Certification	166	Cisco Certified Network Associate (CCNA)	67
Certified Pool/Spa Operator	132	Certified Building Maintenance	67
First Aid Cpr Aed	108	Electrician Certification	64
Security Clearance	103	Wastewater Treatment Plant Operator	56
Epa 608	93	Certified Pest Control	51

Source: Burning Glass

Note: 61% 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 Technician Occupations in Bay Region

Education (minimum advertised)	Latest 12 Mos. Postings	Percent 12 Mos. Postings
High school or vocational training	10,046	77%
Associate's degree	1,570	12%
Bachelor's degree and higher	1,407	11%

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/
 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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