










Engineering Technologists and Technicians, Except Drafters, All Other

Labor Market Analysis: Imperial County

September 2024

Summary

NEW PROGRAM RECOMMENDATION?	EVIDENCE OF A SUPPLY GAP?	AT OR ABOVE THE LIVING WAGE?	EXPECTED LEVEL OF EDUCATION
 Proceed with Caution	 	 	<input type="checkbox"/> Doctorate Degree <input type="checkbox"/> Master's Degree <input type="checkbox"/> Bachelor's Degree <input checked="" type="checkbox"/> Associate Degree <input type="checkbox"/> Some College or Certificate <input type="checkbox"/> HS Diploma or Equivalent <input type="checkbox"/> Less Than a HS Diploma <input type="checkbox"/> Apprenticeship
SUPPORT FOR PROGRAM MODIFICATION?  	NUMBER OF INSTITUTIONS THAT PROVIDE TRAINING LOW 	NUMBER OF ANNUAL JOB OPENINGS LOW 	

The San Diego & Imperial Center of Excellence (COE) developed this brief to assist the region's community colleges with strategic planning and program development. According to available data, *Engineering Technologists and Technicians, Except Drafters, All Other* in Imperial County have a labor market demand of two annual job openings (while average demand for a single occupation in Imperial County is 13 annual job openings), and no institutions supply awards for this occupation, suggesting that there is a supply gap in the labor market. Employers historically reported to the California Employment Development Department (EDD) and U.S. Bureau of Labor Statistics (BLS) that *Engineering Technologists and Technicians, Except Drafters, All Other* earned entry-level earnings of \$31.70 per hour, which is above the living wage in Imperial County. This brief recommends to proceed with caution when developing a new program but supports a program modification because the supply gap is low, however 1) entry-level earnings are above the living wage; 2) employers typically require an associate degree as the minimum educational requirement; and 3) no institution trains for the occupation in the region.

Introduction

This report provides labor market information in Imperial County for the following occupational code in the Standard Occupational Classification (SOC)¹ system:

Engineering Technologists and Technicians, Except Drafters, All Other (SOC 17-3029): Test the safety of structures, vehicles, or vessels using x-ray, ultrasound, fiber optic or related equipment. Build, install, test, or maintain optical or fiber optic equipment, such as lasers, lenses, or mirrors, using spectrometers, interferometers, or related equipment. Sample reported job titles include:

- Welding Technician
- Spectroscopist
- Metallurgical Technician
- NDT Technician
- NDT Specialist
- NDE Technician
- Laser Technician
- Photonics Technician
- Ruling Technician

Projected Occupational Demand

Between 2023 and 2028, *Engineering Technologists and Technicians, Except Drafters, All Other* are projected to increase by **two** net jobs or **11** percent (Exhibit 1). Employers in Imperial County will need to hire **two** workers annually to fill new jobs and backfill jobs due to attrition caused by turnover and retirement, for example.

Exhibit 1: Number of Jobs for *Engineering Technologists and Technicians, Except Drafters, All Other* (2023-2028)²

Occupational Title	2023 Jobs	2028 Jobs	2023 – 2028 Net Jobs Change	2023 - 2028 % Net Jobs Change	Annual Job Openings (Demand)
Engineering Technologists and Technicians, Except Drafters, All Other	19	21	2	11%	2

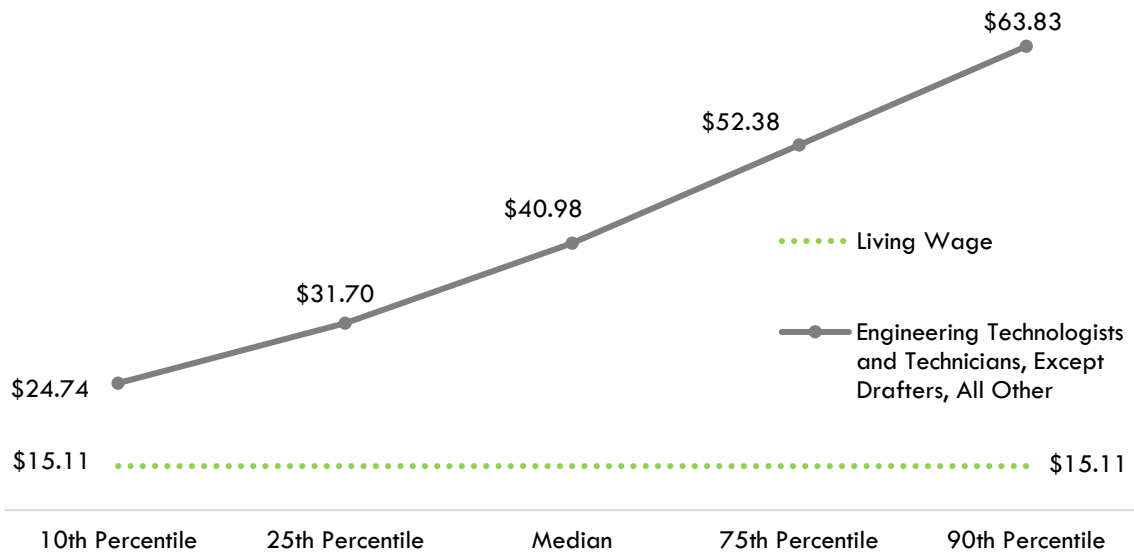
¹ The Standard Occupational Classification (SOC) system is used by federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating or disseminating data. [bls.gov/soc/](https://www.bls.gov/soc/).

² Lightcast 2024.03; QCEW, Non-QCEW, Self-Employed.

Earnings

According to traditional³ labor market information (LMI), *Engineering Technologists and Technicians, Except Drafters, All Other* had until recently entry-level hourly earnings of \$31.70—or \$65,936 annual salary⁴; this is more than the living wage for a single adult in Imperial County, which is \$15.11 per hour (Exhibit 2).⁵

Exhibit 2: Hourly Earnings⁶ for *Engineering Technologists and Technicians, Except Drafters, All Other* in Imperial County⁷



Due to insufficient job postings between January 1, 2021 and December 30, 2023, no analysis of employers’ advertised wages were completed for *Engineering Technologists and Technicians, Except Drafters, All Other* in Imperial County. (Exhibit 3).

Exhibit 3: Median Advertised Salaries in Online Job Postings for *Engineering Technologists and Technicians, Except Drafters, All Other* in Imperial County (2021-2023)

	N/A	N/A	N/A
	2021	2022	2023

³ Traditional LMI is generally historical data captured by the U.S. Bureau of Labor Statistics (BLS) or the California Employment Development Department (EDD). It does not account for recent technological, economic, or legislative changes that may affect labor market demand and wages.

⁴ Annualized salaries assume a full-time position with 2,080 hours. Multiplying the hourly wage with 2,080 yields the annual salary.

⁵ “Sustainability Calculator (formerly the Family Needs Calculator),” Center for Women’s Welfare, University of Washington, last updated 2024. mavencollaborative.org/family-sustainability-index/.

⁶ 10th and 25th percentiles could be considered entry-level wages, and 75th and 90th percentiles could be considered experienced wages for individuals who may have been in the occupation longer, received more training than others, etc.

⁷ Lightcast 2024.03; QCEW, Non-QCEW, Self-Employed.

Expected Level of Education

According to traditional LMI (data reported to EDD and BLS), *Engineering Technologists and Technicians, Except Drafters, All Other* have a national educational attainment of an **associate degree** (Exhibit 4).⁸

Exhibit 4: National Educational Attainment for *Engineering Technologists and Technicians, Except Drafters, All Other*⁹

Occupational Title	Typical Entry-Level Education
Engineering Technologists and Technicians, Except Drafters, All Other	Associate degree

Similarly, online job postings between January 1, 2021 and December 31, 2023 in Imperial County had an **associate degree** as the most requested educational requirement for *Engineering Technologists and Technicians, Except Drafters, All Other*; however, employers also expected the following certifications (Exhibit 5).¹⁰

Exhibit 4: Top Certifications for *Engineering Technologists and Technicians, Except Drafters, All Other* in Imperial County in Online Job Postings (2021-2023)¹¹

1. Secret Clearance
2. Engineer in Training
3. ASNT Non-Destructive Tester

⁸ Lightcast 2024.03; QCEW, Non-QCEW, Self-Employed.

⁹ Lightcast 2024.03; QCEW, Non-QCEW, Self-Employed.

¹⁰ Lightcast 2024.03; "Job Posting Analytics." 2021-2023.

¹¹ Lightcast 2024.03; "Job Posting Analytics." 2021-2023.

Educational Supply

Educational supply for an occupation can be estimated by analyzing the number of awards in related Taxonomy of Programs (TOP) or Classification of Instructional Programs (CIP) codes. There are **two** TOP codes and **two** CIP codes related to *Engineering Technologists and Technicians, Except Drafters, All Other* (Exhibit 6).

Exhibit 5: Related TOP and CIP Codes for *Engineering Technologists and Technicians, Except Drafters, All Other*¹²

TOP or CIP Code	TOP or CIP Program Title
TOP 0924.00	Engineering Technology, General (requires Trigonometry)
TOP 0999.00	Other Engineering and Related Industrial Technologies
CIP 15.0000	Engineering Technologies/Technicians, General
CIP 15.9999	Engineering/Engineering-Related Technologies/Technicians, Other

According to TOP and CIP data, **no** community college or non-community-college institution supplies the region with awards for this occupation (Exhibit 7).

Exhibit 6: Number of Awards (Certificates and Degrees) Conferred by Postsecondary Institutions (Program Year 2019-20 Through Program Year 2022-23 Average)

TOP6 or CIP Code	TOP6 or CIP Program Title	3-Yr Annual Average CC Awards (PY20-21 to PY22-23)	Other Educational Institutions 3-Yr Annual Average Awards (PY19-20 to PY21-22)	Total Average Supply (PY19-20 to PY22-23)
N/A	N/A	N/A	N/A	N/A
			Total	0

¹² This brief uses a conservative estimate of program supply and only calculates awards from the TOP code listed in Exhibit 6.

Demand vs. Supply

Comparing labor demand (annual openings) with labor supply¹³ suggests that there is a **small supply gap** for this occupation in Imperial County, with **two** annual openings and **zero** awards. Comparatively, there are **1,081** annual openings in California and **447** awards, suggesting that there is also a supply gap across the state¹⁴ (Exhibit 8).

Exhibit 7: Labor Demand (Annual Openings) Compared with Labor Supply (Average Annual Awards)

	Demand (Annual Openings)	Supply (Total Annual Average Supply)	Supply Gap or Oversupply
Imperial	2	0	2
California	1,081	447	634

Please note: This is a basic analysis of supply and demand of labor. The data does not include workers currently in the labor force who could fill these positions or workers who are not captured by publicly available data. This data should be used to discuss the potential gaps or oversupply of workers; however, it should not be the only basis for determining whether or not a program should be developed.

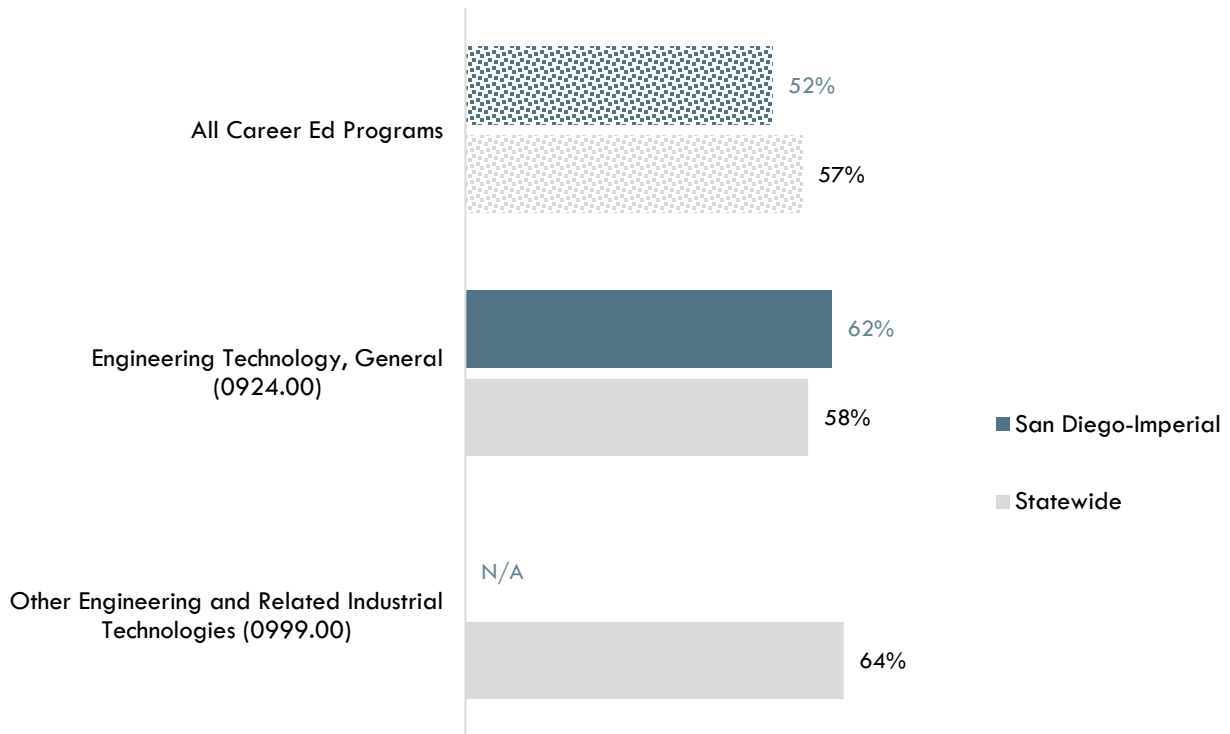
¹³ Labor supply can be found from two different sources: EMSI or the California Community Colleges Chancellor's Office MIS Data Mart. EMSI uses CIP codes while MIS uses TOP codes. Different coding systems result in differences in the supply numbers.

¹⁴ "Supply and Demand," Centers of Excellence Student Outcomes, coecc.net/our-resources.

Student Outcomes and Regional Comparisons

According to the California Community Colleges LaunchBoard, 62 percent of students in the San Diego-Imperial region earned a living wage after completing a program related to *Engineering Technologists and Technicians, Except Drafters, All Other*, compared to 58 to 64 percent statewide and 57 percent of students in Career Education programs in general across the state (Exhibit 9).¹⁵

Exhibit 8: Percentage of Students Who Earned a Living Wage by Program, PY2020-21¹⁶

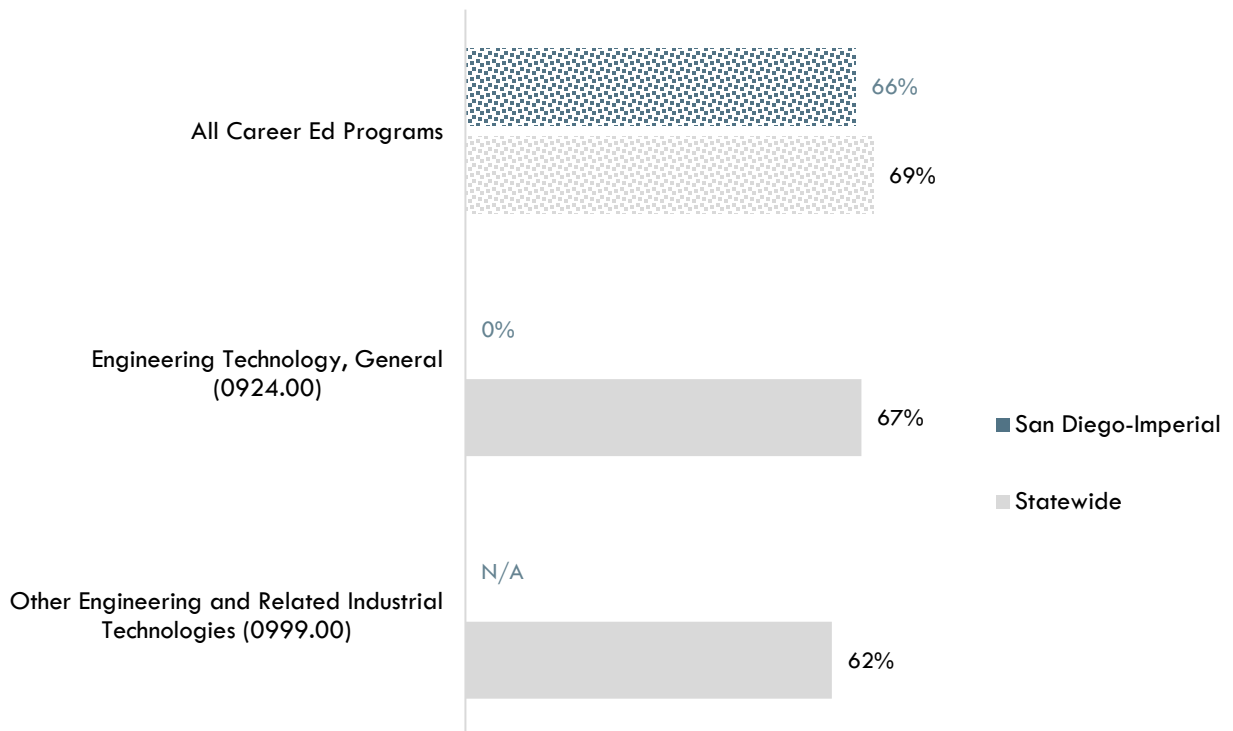


¹⁵ "California Community Colleges Strong Workforce Program," California Community Colleges, calpassplus.org/LaunchBoard/SWP.aspx.

¹⁶ Most recent year with available data is Program Year 2020-21. Among completers and skills builders who exited, the percentage of students who attained a living wage.

According to the California Community Colleges LaunchBoard, 62 to 67 percent of students statewide obtained a job closely related to their field of study after completing a program related to *Engineering Technologists and Technicians, Except Drafters, All Other*, compared to 69 percent of students in Career Education programs in general across the state (Exhibit 10).¹⁷

Exhibit 9: Percentage of Students in a Job Closely Related to Field of Study by Program, PY2019-20¹⁸



"N/A" indicates insufficient data

¹⁷ "California Community Colleges Strong Workforce Program," California Community Colleges, calpassplus.org/LaunchBoard/SWP.aspx.

¹⁸ Most recent year with available data is Program Year 2019-20. Percentage of Students in a Job Closely Related to Field of Study: Among students who responded to the CTEOS, the percentage reporting employment in the same or similar field as their program of study.

Employers

Between January 1, 2021 and December 31, 2023, the top four employers in Imperial County for *Engineering Technologists and Technicians, Except Drafters, All Other* were Imperial Irrigation District, BHE Renewables, Kinder Morgan and MidAmerican Energy based on online job postings (Exhibit 11).

Exhibit 10: Top Employers for *Engineering Technologists and Technicians, Except Drafters, All Other* in Imperial County¹⁹

Top Employers

- Imperial Irrigation District
- BHE Renewables
- Kinder Morgan
- MidAmerican Energy

¹⁹ Lightcast 2024.03; "Job Posting Analytics." 2021-2023.

Skills

Exhibit 12 lists the top specialized, soft, and software skills that appeared in online job postings between January 1, 2021 and December 31, 2023.

Exhibit 11: Top Skills for Engineering Technologists and Technicians, Except Drafters, All Other in

Imperial County²⁰

Specialized Skills	Soft Skills	Software Skills
<ul style="list-style-type: none"> • Engineering Plans And Specifications • Stakeholder Communications • Data Recording • Computer-Aided Design • Geographic Information Systems • Data Analysis • Electrical Engineering • Procurement • Engineering Drawings • Renewable Energy • Industrial Engineering • Project Management • Shipboard Safety • Facilities Planning • Water Quality Analysis 	<ul style="list-style-type: none"> • Good Driving Record • Operations • Planning • Communication • Problem Solving • Writing • Prioritization • Data Compilation • Forecasting • Scheduling • Organizational Skills • Lifting Ability • Self-Motivation • Management • Interpersonal Communications 	<ul style="list-style-type: none"> • Geographic Information Systems • Microsoft Access • Microsoft Excel • Microsoft Outlook • Microsoft PowerPoint

²⁰ Lightcast 2024.03; "Job Posting Analytics." 2021-2023.

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Important Disclaimers

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