

# Engineering Technicians, Except Drafters, All Other Labor Market Analysis: Imperial County

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## Summary

The following list summarizes findings from the labor market analysis below for *Engineering Technicians, Except Drafters, All Other*:

- Between 2017 and 2022, *Engineering Technicians, Except Drafters, All Other* are projected to decrease by one job or four percent.
- Employers in Imperial County will need to hire two workers annually to fill new jobs and backfill jobs due to attrition such as retirement or turnover.
- Between 2010 and 2017, there was an average of one online job posting per year for *Engineering Technicians, Except Drafters, All Other* in Imperial County.
- *Engineering Technicians, Except Drafters, All Other* earn median hourly earnings of \$28.17, more than the Self-Sufficiency Standard for two adults and two children (school-age) in Imperial County, which is \$11.32 per hour.
- According to the California Community Colleges Chancellor's Office Management Information System (MIS) Data Mart, there are eight Taxonomy of Programs (TOP) codes associated with this occupation: TOP 051000: Logistics and Materials Transportation, 092400: Engineering Technology, General, 093420: Industrial Electronics, 093480: Laser and Optical Technology, 094300: Instrumentation Technology, 095420: Plastics and Composites, 095600: Manufacturing and Industrial Technology and 099900: Other Engineering and Related Industrial Technologies.
- According to the TOP data, no colleges supply the region with awards for this occupation.
- Comparing labor demand (annual openings) with labor supply suggests that there is a supply gap for this occupation in Imperial County, with two annual openings and zero awards. Comparatively, there are 936 annual openings in California and 506 completions.
- Between January 1, 2015 and December 31, 2017, the top employers in Imperial County for this occupation were Imperial Irrigation District, Advanced Technology Services and Kinder Morgan.
- The typical entry-level education is an associate degree.

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

**Engineering Technicians, Except Drafters, All Other (SOC 17-3029):** All engineering technicians, except drafters, not listed separately. "All Other" titles represent occupations with a wide range of characteristics which do not fit into one of the detailed O\*NET-SOC occupations. O\*NET data is not available for this type of title. For more detailed occupations under this title, see below:

- 17-3029.01 Non-Destructive Testing Specialists
- 17-3029.02 Electrical Engineering Technologists
- 17-3029.03 Electromechanical Engineering Technologists
- 17-3029.04 Electronics Engineering Technologists
- 17-3029.05 Industrial Engineering Technologists
- 17-3029.06 Manufacturing Engineering Technologists
- 17-3029.07 Mechanical Engineering Technologists
- 17-3029.08 Photonics Technicians
- 17-3029.09 Manufacturing Production Technicians
- 17-3029.10 Fuel Cell Technicians
- 17-3029.11 Nanotechnology Engineering Technologists
- 17-3029.12 Nanotechnology Engineering Technicians

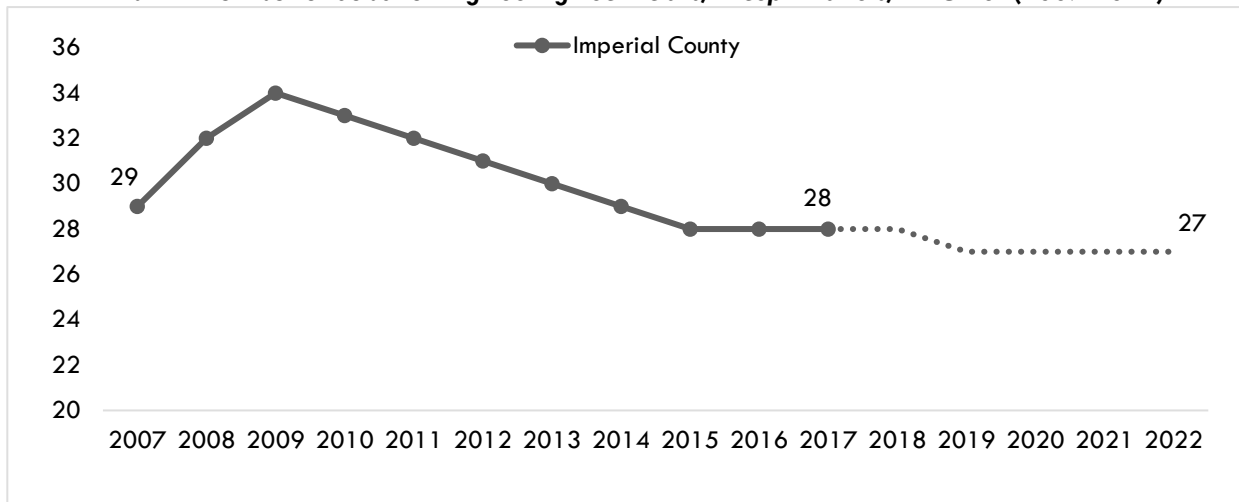
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<sup>1</sup> The Standard Occupational Classification (SOC) system is used by federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating or disseminating data. [bls.gov/soc](http://bls.gov/soc).

## Projected Occupational Demand

Between 2017 and 2022, *Engineering Technicians, Except Drafters, All Other* are projected to decrease overall by **one** job or **four** percent (Exhibit 1). However, employers in Imperial County will need to hire **two** workers annually to fill new jobs and backfill jobs due to attrition such as retirement or turnover.

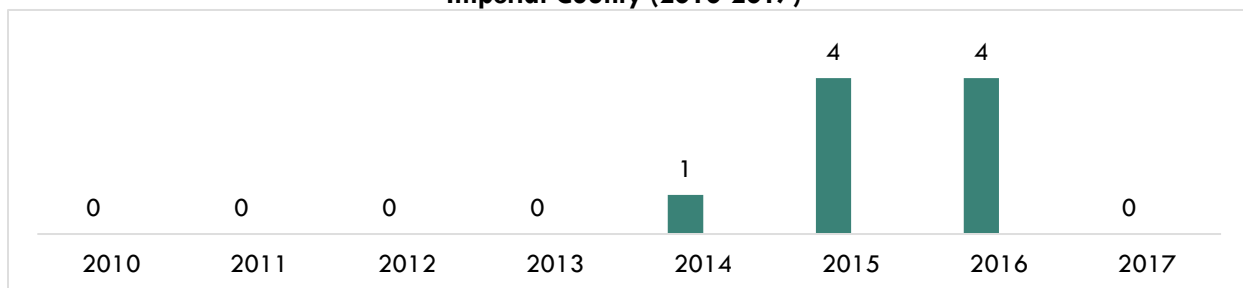
**Exhibit 1: Number of Jobs for Engineering Technicians, Except Drafters, All Other (2007-2022)<sup>2</sup>**



## Online Job Postings

Between 2010 and 2017, there was an average of **one** online job posting per year for *Engineering Technicians, Except Drafters, All Other* in Imperial County (Exhibit 3).

**Exhibit 3: Number of Online Job Postings for Engineering Technicians, Except Drafters, All Other in Imperial County (2010-2017)<sup>3</sup>**



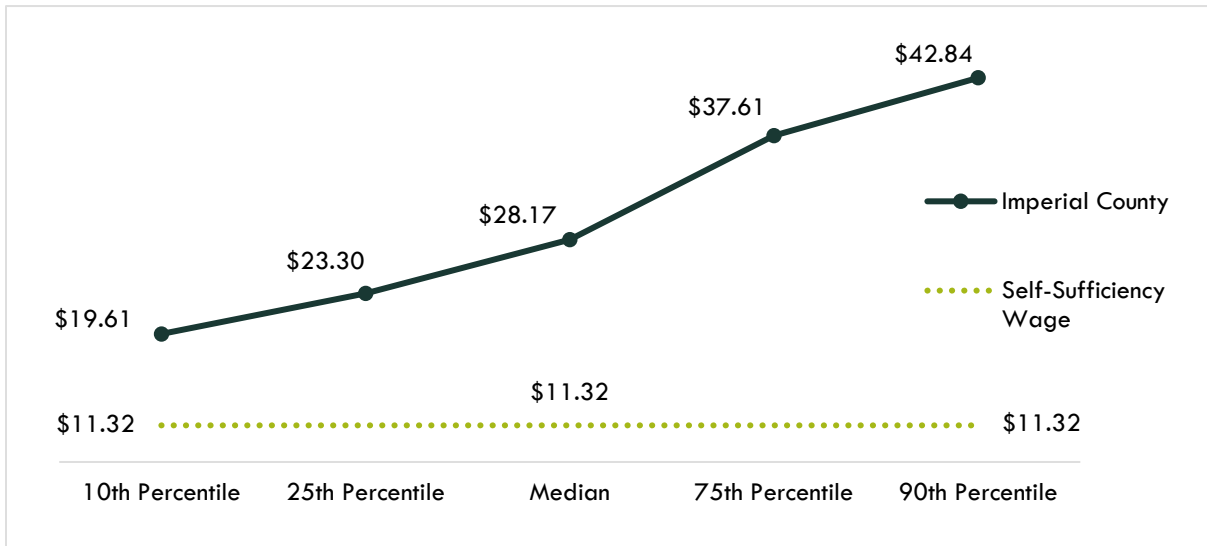
<sup>2</sup> Economic Modeling Specialists, Int'l. (EMSI). Imperial County (6025). 2018.01 Class of Worker. QCEW + Non-QCEW+ Self-Employed. 2007-2022.

<sup>3</sup> Labor Insight Jobs. Burning Glass Technologies. Imperial, CA. Full years 2010-2017.

## Earnings

*Engineering Technicians, Except Drafters, All Other* earn median hourly earnings of **\$28.17**, more than the Self-Sufficiency Standard for two adults and two children (school-age) in Imperial County, which is **\$11.32** per hour (Exhibit 4).<sup>4</sup>

**Exhibit 4: Hourly Earnings for *Engineering Technicians, Except Drafters, All Other* in Imperial County<sup>5</sup>**



## Educational Supply

Educational supply for an occupation can be estimated by analyzing the number of related program completers/graduates/awards in Imperial County. According to the California Community Colleges Chancellor's Office Management Information System (MIS) Data Mart, there are **eight** Taxonomy of Programs (TOP) codes associated with this occupation: TOP 051000: Logistics and Materials Transportation, 092400: Engineering Technology, General, 093420: Industrial Electronics, 093480: Laser and Optical Technology, 094300: Instrumentation Technology, 095420: Plastics and Composites, 095600: Manufacturing and Industrial Technology and 099900: Other Engineering and Related Industrial Technologies (Exhibit 5).

<sup>4</sup> The standard for two adults and two children was chosen due to the 3.68 persons per household (2012-2016) as determined by the U.S. Census for Imperial County.

<sup>5</sup> EMSI. Imperial County (6025). 2018.01 Class of Worker. QCEW + Non-QCEW + Self-Employed. 2017-2022.

**Exhibit 5: Related TOP Codes in Imperial County**

**SOC 17-3029: Engineering Technicians, Except Drafters, All Other**

TOP 051000: Logistics and Materials Transportation
TOP 092400: Engineering Technology, General
TOP 093420: Industrial Electronics
TOP 093480: Laser and Optical Technology
TOP 094300: Instrumentation Technology
TOP 095420: Plastics and Composites
TOP 095600: Manufacturing and Industrial Technology
TOP 099900: Other Engineering and Related Industrial Technologies

According to the TOP data, no colleges supply the region with awards for this occupation (Exhibit 6).

**Please note:** An award is not equivalent to a single person in search of a job opening because a student may earn more than one award such as an associate degree in addition to a certificate.

**Exhibit 6: Number of Awards (Certificates and Degrees) Conferred by Postsecondary Institutions (Program Year 2013-14 through PY2016-17 Average)**

TOP06	TOP06 Title	3-Yr Annual Average CC Awards (PY14-15 to PY16-17)	Other Educational Institutions 3-Yr Annual Average Awards (PY13-14 to PY15-16)	3-Yr Total Average Supply (PY13-14 to PY16-17)
051000	Logistics and Materials Transportation	0	0	0
092400	Engineering Technology, General	0	0	0
093420	Industrial Electronics	0	0	0
093480	Laser and Optical Technology	0	0	0
094300	Instrumentation Technology	0	0	0
095420	Plastics and Composites	0	0	0

TOP06	TOP06 Title	3-Yr Annual Average CC Awards (PY14-15 to PY16-17)	Other Educational Institutions 3-Yr Annual Average Awards (PY13-14 to PY15-16)	3-Yr Total Average Supply (PY13-14 to PY16-17)
095600	Manufacturing and Industrial Technology	0	0	0
099900	Other Engineering and Related Industrial Technologies	0	0	0
<b>Total</b>				<b>0</b>

## Demand vs. Supply

Comparing labor demand (annual openings) with labor supply<sup>6</sup> suggests that there is a **supply gap** for this occupation in Imperial County, with **two** annual openings and **zero** awards. Comparatively, there are **936** annual openings in California and **506** completions<sup>7</sup> (Exhibit 7).

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

Community Colleges and Other Postsecondary Educational Institutions	Demand (Annual Openings)	Supply (Total Annual Average Supply)	Supply Gap or Oversupply
Imperial County	2	0	2
California	936	506	430

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

## Student Outcomes

Based on the information available in the CTE LaunchBoard<sup>8</sup>, students who took courses in the related TOP codes exhibited the following outcomes (Exhibit 8).

<sup>6</sup> 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.

<sup>7</sup> EMSI. California (6); Imperial County (6025). 2018.01 Class of Worker. QCEW + Non-QCEW + Self-Employed. 2017-2022.

<sup>8</sup> calpassplus.org/LaunchBoard/SWP.aspx.

**Exhibit 8: Strong Workforce Program Metrics for  
TOP 092400: Engineering Technology, General in Imperial County (PY2013-14)**

Metric	San Diego-Imperial	California
Number of course enrollments <sup>9</sup>	18	4,578
Number of students who got a degree or certificate <sup>10</sup>	N/A	135
Number of students who transferred <sup>11</sup>	2	485
Employed in the second fiscal quarter after exit <sup>12</sup>	100%	69%
Employed in the fourth fiscal quarter after exit <sup>13</sup>	100%	71%
Job closely related to field of study <sup>14</sup>	N/A	50%
Median earnings in the second fiscal quarter after exit <sup>15</sup>	\$11,417	\$9,386
Median change in earnings <sup>16</sup>	423%	111%
Attained a living wage <sup>17</sup>	N/A	58%

## Top Employers and Work Locations

Between January 1, 2015 and December 31, 2017, the top employers in Imperial County for this occupation were **Imperial Irrigation District, Advanced Technology Services and Kinder Morgan** (Exhibit 9).

### Exhibit 9: Top Employers in Imperial County for Engineering Technicians, Except Drafters, All Other

#### Top Employers

- Imperial Irrigation District
- Advanced Technology Service
- Kinder Morgan

<sup>9</sup> The number of enrollments in courses assigned to the TOP code in the selected year.

<sup>10</sup> The number of unduplicated students who earned a locally-issued certificate, Chancellor's Office approved certificate, associate degree, and/or California Community Colleges bachelor's degree in the selected TOP code.

<sup>11</sup> Students who took non-introductory courses or completed a California Community Colleges Chancellor's Office award in the selected TOP code in selected year who subsequently enrolled for the first time in a four-year institution the following year.

<sup>12</sup> Among all exiters with a valid SSN, the percentage who were employed two quarters after exiting California Community Colleges.

<sup>13</sup> Among exiting students with a valid SSN, the percentage who were employed four quarters after exiting California Community Colleges.

<sup>14</sup> Among students who responded to the CTEOS, the percentage reporting employment in the same or similar field as their program of study.

<sup>15</sup> Among exiting students, the median second-quarter earnings one year after the year in which they exited California Community Colleges.

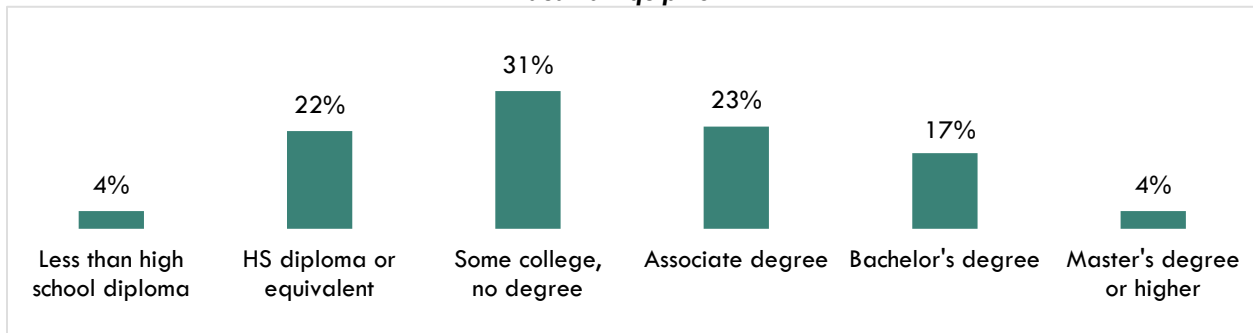
<sup>16</sup> Among exiting students with a valid SSN, the percentage change in earnings one year before and one year after exiting California Community Colleges.

<sup>17</sup> Among completers and skills-builders who exited, the proportion of students who attained a living wage.

## Skills, Education and Certifications

Exhibit 10 indicates the educational attainment for the occupation found currently in the national labor force. There is no typical on-the-job training for this profession. The typical entry-level education is an **associate degree**.<sup>18</sup>

**Exhibit 10: National Educational Attainment of Electrical and Electronic Repairers, Commercial and Industrial Equipment<sup>19</sup>**



\*May not add to 100% due to rounding.

Exhibit 11 lists the top specialized and soft skills that appeared in online job postings between January 1, 2015 and December 31, 2017.

**Exhibit 11: Top Skills for Engineering Technicians, Except Drafters, All Other in Imperial County<sup>20</sup>**

Specialized Skills	Soft Skills	Software Skills
<ul style="list-style-type: none"> <li>• Repair</li> <li>• Computer Numerical Control (CNC)</li> <li>• Computerized Maintenance Management System</li> <li>• Customer Service</li> <li>• Hand Tools</li> <li>• Hydraulics</li> <li>• Industrial Operations Industry Experience</li> </ul>	<ul style="list-style-type: none"> <li>• Physical Demand</li> <li>• Troubleshooting</li> <li>• Writing</li> <li>• Mathematics</li> <li>• Preventive Maintenance</li> <li>• Team Work/ Collaboration</li> <li>• Building Effective Relationships</li> </ul>	<ul style="list-style-type: none"> <li>• Microsoft Office</li> <li>• Microsoft Excel</li> <li>• Microsoft Project</li> <li>• Microsoft Word</li> <li>• AutoCAD</li> <li>• Revit</li> </ul>

<sup>18</sup> EMSI. Imperial County (6025). 2018.01 Class of Worker. QCEW + Non-QCEW + Self-Employed. 2017-2022.

<sup>19</sup> Bureau of Labor Statistics, Educational attainment for workers 25 years and older by detailed occupation. [bls.gov/emp/ep\\_table\\_111.htm](https://bls.gov/emp/ep_table_111.htm)

<sup>20</sup> Labor Insight Jobs. Burning Glass Technologies. Imperial, CA. San Diego, CA. Full years 2015-2017.



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