

Electro-Mechanical Technicians

Labor Market Analysis: San Diego County

January 2018

Summary

The following list summarizes findings from the labor market analysis below for *Electro-Mechanical Technicians*:

- Between 2016 and 2021, *Electro-Mechanical Technicians* are projected to increase by 17 jobs (or 21 percent) in San Diego County.
- Employers in San Diego County will need to hire 11 workers annually to fill new jobs and to backfill jobs due to attrition such as retirement or turnover.
- Between 2010 and 2017, there was an average of eight online job postings per year for *Electro-Mechanical Technicians* in San Diego County.
- *Electro-Mechanical Technicians* earn median hourly earnings of \$26.81, more than the self-sufficiency wage (\$13.09 per hour) for a single adult in San Diego County.
- According to the California Community Colleges Chancellor's Office Management Information System (MIS) Data Mart, no community colleges supply the region with awards for this occupation. However, according to Classification of Instructional Programs (CIP) code data there are seven completions in San Diego County related to this occupation.
- Comparing labor demand with labor supply, there is a supply gap for this occupation in San Diego County, with 11 annual openings and seven completions. Comparatively, there are 211 annual openings in California and 388 completions — an oversupply of 177.
- Between January 1, 2015 and December 31, 2017, the top five employers in San Diego County for this occupation were Verify, Encina Wastewater Authority, Scientific Research Corporation, San Marcos and San Diego Housing Commission.
- The typical entry-level education for this occupation is an associate degree.

Introduction

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

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.

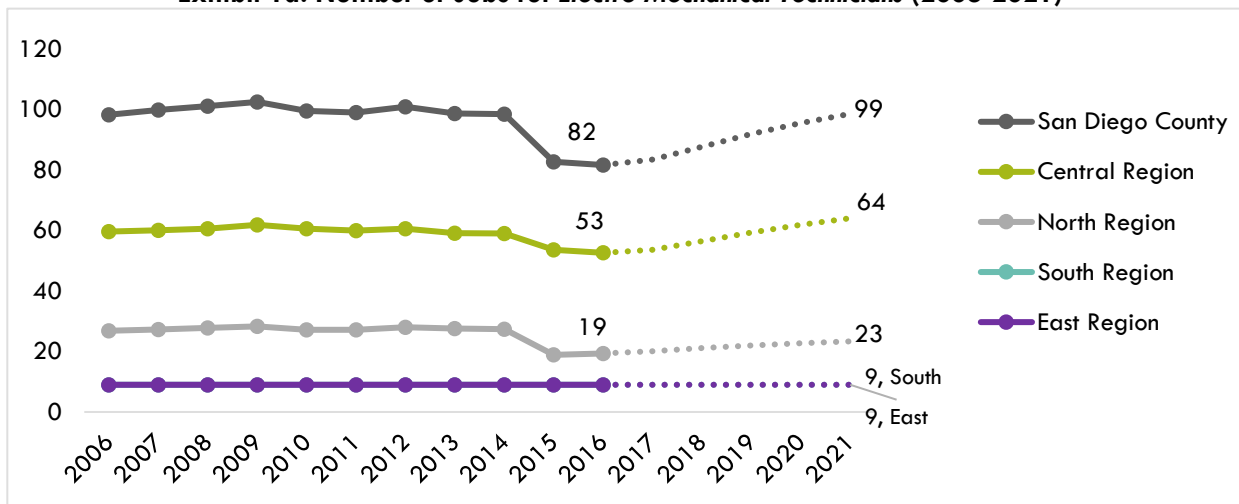
Electro-Mechanical Technicians (SOC 17-3024): Operate, test, maintain or calibrate unmanned, automated, servo-mechanical or electromechanical equipment. May operate unmanned submarines, aircraft or other equipment at worksites, such as oil rigs, deep-ocean exploration or hazardous waste removal. May assist engineers in testing and designing robotics equipment. Sample reported job titles include:

- Tester
- Test Technician
- Product Test Specialist
- Mechanical Technician
- Maintenance Technician
- Automation Technician
- Instrumentation Technician
- Instrument Specialist
- Field Service Technician
- Electronics Technician

Projected Occupational Demand

Between 2016 and 2021, *Electro-Mechanical Technicians* are projected to increase by 17 jobs (or 21 percent) in San Diego County (Exhibit 1a and Exhibit 1b).²

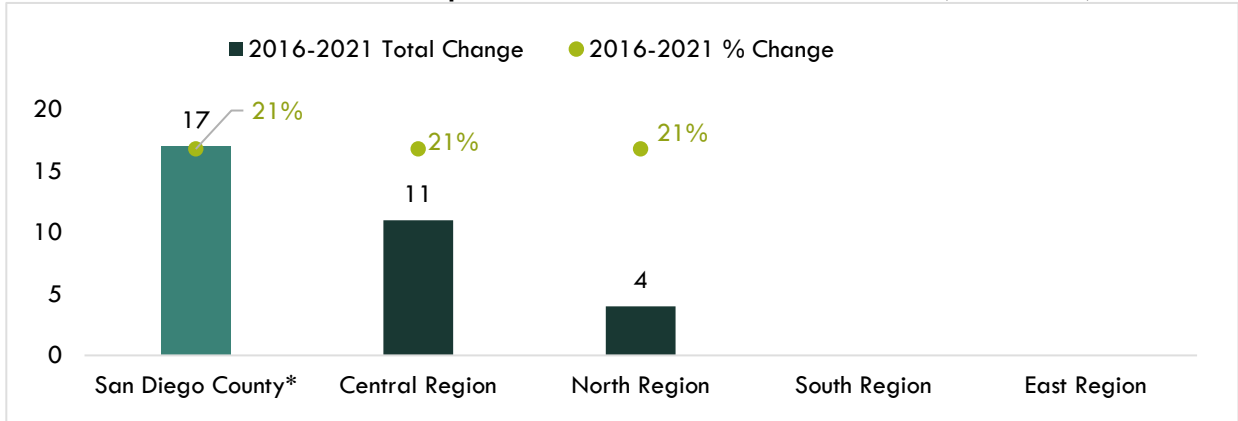
Exhibit 1a: Number of Jobs for *Electro-Mechanical Technicians* (2006-2021)³



² South, East, Central and North Regions' ZIP codes in this report are defined by the local Workforce Development Board, the San Diego Workforce Partnership.

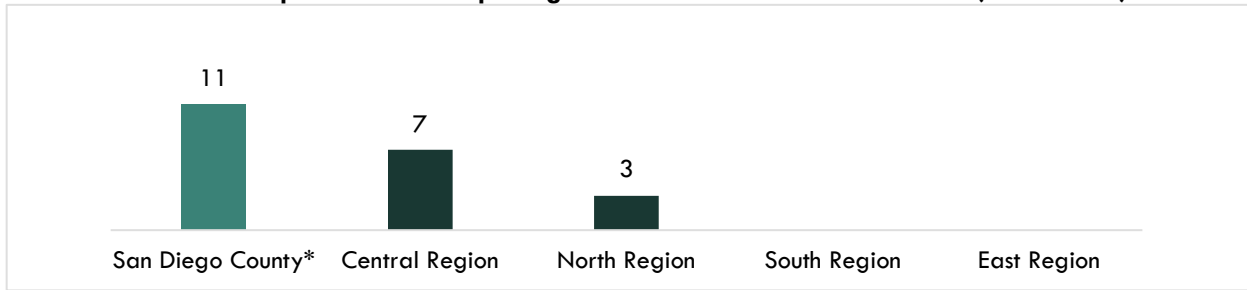
³ Economic Modeling Specialists, Int'l. (EMS). San Diego County (6073). 2017.03 Class of Worker. QCEW + Non-QCEW+ Self-Employed. 2006-2021.

Exhibit 1b: Five-Year Projections for *Electro-Mechanical Technicians* (2016-2021)⁴



Employers in San Diego County will need to hire **11** workers annually to fill new jobs and backfill jobs due to attrition such as retirement or turnover (Exhibit 2).

Exhibit 2: Projected Annual Openings for *Electro-Mechanical Technicians* (2016-2021)⁵

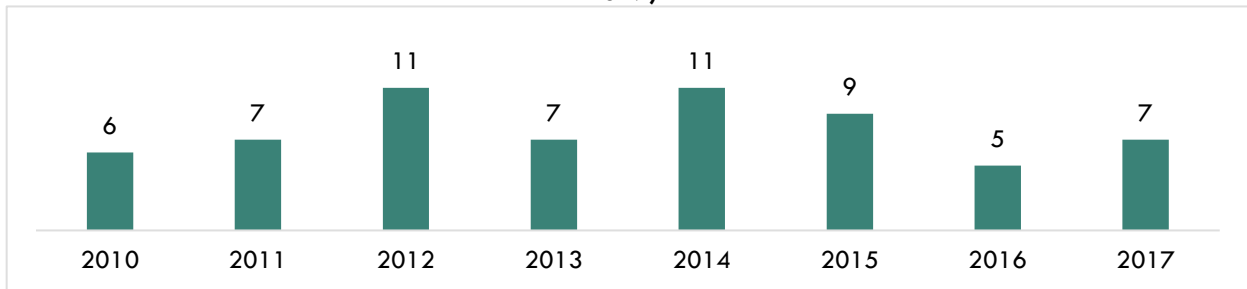


*Total annual openings for the subregions in San Diego County may not add up exactly due to rounding.

Online Job Postings

Between 2010 and 2017, there was an average of **eight** online job postings per year for *Electro-Mechanical Technicians* in San Diego County (Exhibit 3).

Exhibit 3: Number of Online Job Postings for *Electro-Mechanical Technicians* in San Diego County (2010-2017)⁶



⁴ EMSI. San Diego County (6073). 2017.04 Class of Worker. QCEW + Non-QCEW + Self-Employed. 2016-2021.

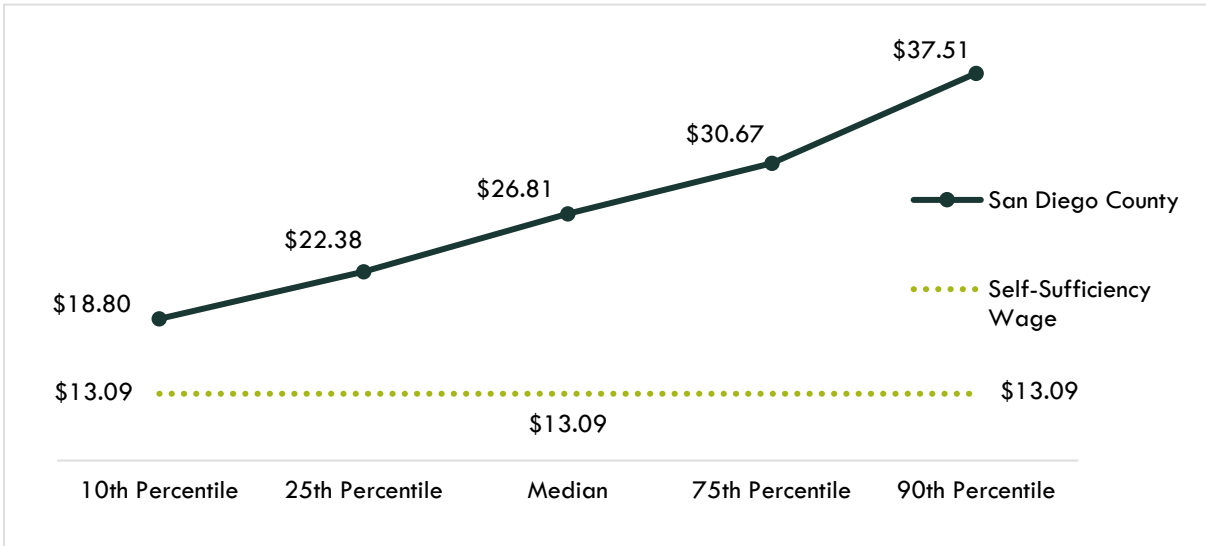
⁵ EMSI. San Diego County (6073). 2017.04 Class of Worker. QCEW + Non-QCEW + Self-Employed. 2016-2021.

⁶ Labor Insight Jobs. Burning Glass Technologies. San Diego, CA. Full years 2010- 2017.

Earnings

Electro-Mechanical Technicians earn median hourly earnings of **\$26.81**, more than the self-sufficiency wage (\$13.09 per hour)⁷ for a single adult in San Diego County (Exhibit 4).

Exhibit 4: Hourly Earnings for *Electro-Mechanical Technicians* in San Diego County⁸



Educational Supply

Educational supply for an occupation can be estimated by analyzing the number of related program completers/graduates/awards in San Diego County. To determine what programs are available, Exhibit 5 lists the Taxonomy of Programs (TOP) code(s) related to the SOC code analyzed.

Exhibit 5: Related TOP Codes in San Diego County

SOC 17-3024: Electro-Mechanical Technicians

TOP 093500: Electro-Mechanical Technology

TOP 094300: Instrumentation Technology

According to the California Community Colleges Chancellor's Office Management Information System (MIS) Data Mart, **no** community colleges supply the region with awards for this occupation (Exhibit 6). However, according to Classification of Instructional Programs (CIP) code data there are **seven** completions in San Diego County related to this occupation.⁹

⁷ The self-sufficiency wage in San Diego for one adult is \$13.09 (insightcced.org/tools-metrics/self-sufficiency-standard-tool-for-california).

⁸ EMSI. San Diego County (6073). 2017.04 Class of Worker. QCEW + Non-QCEW + Self-Employed. 2016-2021.

⁹ EMSI. San Diego County (6073). 2017.04 Class of Worker. QCEW + Non-QCEW + Self-Employed. 2016-2021.

Exhibit 6 shows the annual average regional community college awards (associate degrees and certificates) conferred during the three academic years between 2013 and 2016 as well as other awards granted outside the California Community Colleges from 2012 to 2015 with the relevant TOP code.

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 by Occupation (Program Year 2012-13 through PY2015-16 Average)

TOP06	TOP06 Title	3-Yr Annual Average Supply (PY13-14 to PY15-16)	3-Yr Annual Average CC Awards (PY13-14 to PY15-16)	Other Educational Institutions 3-Yr Annual Average Awards (PY12-13 to PY14-15)
093500	Electro-Mechanical Technology	0	0	0
094300	Instrumentation Technology	0	0	0

*Total number of awards may not add up exactly due to rounding.

Demand vs. Supply

Comparing the labor demand (annual openings) with labor supply¹⁰ from the region's colleges, there is a **supply gap** for this occupation in San Diego County, with **11** annual openings and **7** completions.¹¹

Comparatively, there are **211** annual openings in California and **388** completions — an oversupply of **177**.¹²

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
San Diego County	11	7	4
California	211	388	177

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

¹⁰ 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.

¹¹ EMSI. San Diego County (6073). 2017.04 Class of Worker. QCEW + Non-QCEW + Self-Employed. 2016-2021.

¹² EMSI. San Diego County (6073). 2017.04 Class of Worker. QCEW + Non-QCEW + Self-Employed. 2016-2021.

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,¹³ students who took courses in the related TOP codes exhibited the following outcomes (Exhibit 8).

**Exhibit 8: Strong Workforce Program Metrics for
093500 Electro-Mechanical Technology vs. All Programs in San Diego-Imperial Region (PY2014-15)**

Metric	TOP 093500 ¹⁴	All Programs
Number of course enrollments ¹⁵	N/A	1,009,712
Number of students who got a degree or certificate ¹⁶	N/A	17,536
Number of students who transferred ¹⁷	N/A	6,269
Employed in the second fiscal quarter after exit ¹⁸	N/A	66%
Employed in the fourth fiscal quarter after exit ¹⁹	N/A	65%
Job closely related to field of study ²⁰	N/A	N/A ²¹
Median earnings in the second fiscal quarter after exit ²²	N/A	\$9,134
Median change in earnings ²³	N/A	31%
Attained a living wage ²⁴	N/A	50%

Top Employers and Work Locations

Between January 1, 2015 and December 31, 2017, the top five employers in San Diego County for this occupation were *Verify, Encina Wastewater Authority, Scientific Research Corporation, San Marcos and San Diego Housing Commission* (Exhibit 9).

¹³ calpassplus.org/LaunchBoard/SWP.aspx.

¹⁴ There are insufficient data to calculate these metrics.

¹⁵ The number of enrollments in courses assigned to the TOP code in the selected year.

¹⁶ 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.

¹⁷ 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.

¹⁸ Among all exiters with a valid SSN, the percentage who were employed two quarters after exiting California Community Colleges.

¹⁹ Among exiting students with a valid SSN, the percentage who were employed four quarters after exiting California Community Colleges.

²⁰ Among students who responded to the CTEOS, the percentage reporting employment in the same or similar field as their program of study.

²¹ Data for this metric has not been released for PY2014-15; however, in PY2013-14, the result was 81%.

²² Among exiting students, the median second -quarter earnings one year after the year in which they exited California Community Colleges.

²³ Among exiting students with a valid SSN, the percentage change in earnings one year before and one year after exiting California Community Colleges.

²⁴ Among completers and skills-builders who exited, the proportion of students who attained a living wage.

Exhibit 9: Top Employers in San Diego County for *Electro-Mechanical Technicians*

Top Employers

- Verify
- Encina Wastewater Authority
- Scientific Research Corporation
- San Marcos
- San Diego Housing Commission
- Qualcomm
- Northrop Grumman
- California Water Environment Association

Skills, Education and Certifications

Exhibit 10 indicates the educational attainment for the occupation found currently in the national labor force. The typical entry-level education for this occupation is an **associate degree**.²⁵

Exhibit 10: National Educational Attainment of *Electro-Mechanical Technicians*

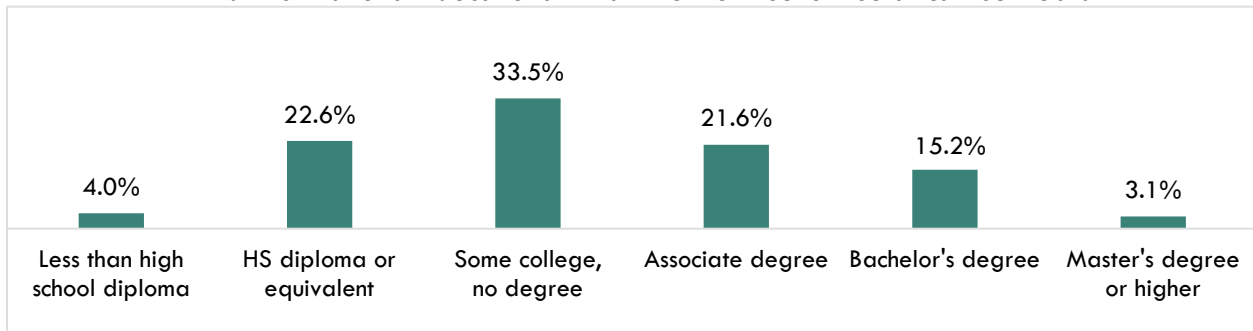


Exhibit 11 lists the top specialized, soft and software skills that appeared in online job postings for between January 1, 2015 and December 31, 2017.

Exhibit 11: Top Skills for *Electro-Mechanical Technicians* in San Diego County²⁶

Specialized Skills	Soft Skills	Software Skills
<ul style="list-style-type: none"> • Schematic Diagrams • Robotics • Mig and Tig Welding • Pneumatic Circuits • Systems Integration 	<ul style="list-style-type: none"> • Communication Skills • Troubleshooting • Computer Skills • Preventive Maintenance • Problem Solving 	<ul style="list-style-type: none"> • Word Processing • Microsoft Word • Microsoft PowerPoint • Microsoft Outline • Microsoft Excel

Tina Ngo Bartel, Director
Center of Excellence, San Diego-Imperial Region
tn gobartel@miracosta.edu



²⁵ EMSI. San Diego County (6073). 2017.04 Class of Worker. QCEW + Non-QCEW + Self-Employed. 2016-2021.

²⁶ Labor Insight Jobs. Burning Glass Technologies. San Diego, CA. Full years 2015-2017.