

Program Endorsement Brief: 0946.00/Industrial Systems Technology and Maintenance Electro-Mechanical Technician

Orange County Center of Excellence, October 2019

Summary Analysis

The Orange County Center of Excellence for Labor Market Research (COE) prepared this report to provide Los Angeles/Orange County regional labor market supply and demand data related to four middle-skill occupations: electro-mechanical technicians (17-3024), mechanical engineering technicians (17-3027), electrical and electronics repairers, commercial and industrial (29-2094), and industrial machinery mechanics (49-9041). Middle-skill occupations typically require some postsecondary education, but less than a bachelor's degree.¹ This report is intended to help determine whether there is demand in the local labor market that is not being met by the supply from community college programs that align with relevant occupations.

Based on the available data there appears to be a supply gap for occupations related to electro-mechanical technicians in the region. **Therefore, the COE endorses this proposed program.** Reasons include:

Demand:

- Over the next five years, there is projected to be **1,190 jobs available annually** in the region due to new job growth and replacements, **which is more than the 119 awards conferred annually** by educational institutions in the region.
- The national-level educational attainment data indicates **between 41.5% and 53.1% of workers in the field have completed some college or an associate degree.**

Supply:

- **There are 6 educational institutions in the region, all of which are community colleges,** who offer programs related to industrial systems technology and maintenance, conferring an average of **119 awards annually** between 2015 and 2018.

Occupational Demand

Exhibit 1, on the following page, shows the five-year occupational demand projections for occupations related to electro-mechanical technicians. In Los Angeles/Orange County, the number of jobs related to these occupations is projected to increase slightly, by less than 1% through 2023. There will be nearly 1,200 job openings per year through 2023 due to job growth and replacements.

¹ The COE classifies middle-skill jobs as the following:

- All occupations that require an educational requirement of some college, associate degree or apprenticeship;
- All occupations that require a bachelor's degree, but also have more than one-third of their existing labor force with an educational attainment of some college or associate degree; or
- All occupations that require a high school diploma or equivalent or no formal education, but also require short- to long-term on-the-job training where multiple community colleges have existing programs.

Exhibit 1: Occupational demand in Los Angeles and Orange Counties²

Geography	2018 Jobs	2023 Jobs	2018-2023 Change	2018-2023 % Change	Annual Openings
Los Angeles	9,281	9,226	(55)	(1%)	811
Orange	4,087	4,208	121	3%	379
Total	13,368	13,434	66	0%	1,190

Wages—Typical entry-level hourly wages for occupations related to electro-mechanical technicians throughout the region are between \$19.37 and \$25.00.³ Entry-level wages for these occupations are higher than the California Family Needs Calculator hourly wage for one adult in the region (\$15.04 in Los Angeles County and \$17.36 in Orange County).⁴ Experienced workers can expect to earn between \$32.47 and \$37.45, which is also higher than the California Family Needs Calculator wage estimates for both counties. Regional average wages are below the average statewide wage of \$29.02 for these occupations. Wage information, by county, is included in Appendix A.

Job Postings—There were 2,561 online job postings related to electro-mechanical technicians listed in the past 12 months. The highest number of job postings were for maintenance mechanic, mechanical technician, calibration technician, electronics technician, and mechanical inspector. The top skills were knowledge of: repair/maintenance, machinery, hand tools, schematic diagrams and welding. The top three employers, by number of job postings, in the region were: Northrop Grumman, Arconic, and Precision Castparts. Of the 2,561 online job postings, 49% list a minimum education requirement.

Educational Attainment—The Bureau of Labor Statistics (BLS) lists an associate degree as the typical entry-level education for electro-mechanical technicians and mechanical engineering technicians, a postsecondary non-degree award for electrical and electronics repairers, commercial and industrial, and a high school diploma for industrial machinery mechanics. The national-level educational attainment data indicates between 41.5% and 53.1% of workers in the field have completed some college or an associate degree. Of the 49% of electro-mechanical technician job postings listing a minimum education requirement in Los Angeles/Orange County, 85% (1,076) requested a high school diploma and 15% (183) requested an associate degree.

Supply

Community College Supply—Exhibit 2, on the following page, shows the three-year average number of awards conferred by community colleges in the related TOP code: Industrial Systems Technology and Maintenance (0945.00). The college with the most completions in the region is LA Trade-Tech. Over the past 12 months, there were three other related program recommendation requests from regional community colleges.

² Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

³ Entry-level wage is defined as the twenty-fifth percentile hourly wage. Wages for experienced workers are defined as the seventy-fifth percentile hourly wage.

⁴ Living wage data was pulled from California Family Needs Calculator on 10/21/19. For more information, visit the California Family Needs Calculator website: <https://insightcced.org/2018-family-needs-calculator/>.

Exhibit 2: Regional community college awards (certificates and degrees), 2015-2018

TOP Code	Program	College	2015-2016 Awards	2016-2017 Awards	2017-2018 Awards	3-Year Award Average
0945.00	Industrial Systems Technology and Maintenance	LA Harbor	0	1	1	1
		LA Trade-Tech	98	122	94	105
		Long Beach	0	1	1	1
		West LA	0	0	19	6
		LA	98	124	115	112
		Fullerton	2	0	2	1
		Santiago Canyon	2	8	6	5
		OC	4	8	8	7
		Total/Average	102	132	123	119

Appendix A: Occupational demand and wage data by county

Exhibit 4. Los Angeles County

Occupation (SOC)	2018 Jobs	2023 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)
Industrial Machinery Mechanics (49-9041)	6,294	6,319	25	0%	555	\$19.16	\$24.98	\$32.13
Electrical and Electronics Repairers, Commercial and Industrial Equipment (49-2094)	1,409	1,370	(39)	(3%)	121	\$20.09	\$27.28	\$36.68
Mechanical Engineering Technicians (17-3027)	955	937	(18)	(2%)	83	\$23.02	\$30.24	\$37.40
Electro-Mechanical Technicians (17-3024)	623	601	(22)	(4%)	53	\$24.94	\$29.06	\$34.50
Total	9,281	9,226	(55)	(1%)	811			

Exhibit 5. Orange County

Occupation (SOC)	2018 Jobs	2023 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)
Industrial Machinery Mechanics (49-9041)	2,516	2,613	97	4%	237	\$19.94	\$25.93	\$33.30
Electrical and Electronics Repairers, Commercial and Industrial Equipment (49-2094)	686	694	8	1%	61	\$20.76	\$28.21	\$37.93
Mechanical Engineering Technicians (17-3027)	546	561	15	3%	50	\$23.35	\$30.49	\$37.54
Electro-Mechanical Technicians (17-3024)	339	340	1	0%	30	\$25.09	\$29.22	\$34.70
Total	4,087	4,208	121	3%	379			

Exhibit 6. Los Angeles and Orange Counties

Occupation (SOC)	2018 Jobs	2023 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)
Industrial Machinery Mechanics	8,810	8,932	122	1%	792	\$19.37	\$25.25	\$32.47
Electrical and Electronics Repairers, Commercial and Industrial Equipment	2,095	2,064	(31)	(1%)	182	\$20.30	\$27.59	\$37.09
Mechanical Engineering Technicians	1,501	1,498	(3)	(0%)	133	\$23.14	\$30.33	\$37.45
Electro-Mechanical Technicians	962	941	(21)	(2%)	83	\$25.00	\$29.12	\$34.57
Total	13,368	13,434	66	0%	1,190			

Appendix B: Sources

- O*NET Online
- Labor Insight/Jobs (Burning Glass)
- Economic Modeling Specialists, International (EMSI)
- Bureau of Labor Statistics (BLS)
- Employment Development Department, Labor Market Information Division, OES
- Employment Development Department, Unemployment Insurance Dataset
- Living Insight Center for Community Economic Development
- California Community Colleges Chancellor's Office Management Information Systems (MIS)
- California Family Needs Calculator, Insight Center for Community Economic Development
- Chancellor's Office Curriculum Inventory (COCI 2.0)

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