

Mechatronics Technicians

Inland Empire/Desert Region (Riverside and San Bernardino counties combined)

Summary

- Employment for the mechatronics technician occupational group is expected to **increase by 2% between 2018 and 2023** in the Inland Empire/Desert Region. A total of **226 job openings** will be available over the five-year timeframe.
- The entry-level wage for each of the occupations in the mechatronics technician occupational group is **above the MIT Living Wage estimate of \$12.39 per hour** for a single adult living in the Inland Empire/Desert Region.
- **There appears to be an opportunity for program growth** based on the average annual number of program completions for the selected community college program in the region (**0 annual average credentials**) and the annual openings for the mechatronics technician occupational group in the local region (**45 annual job openings**).

Introduction

This report provides data on the occupations related to the California Community College electro-mechanical (TOP 0935.00) program. This program prepares individuals for mechatronics technician positions through the instruction of the design, development, testing, and maintenance of electro-mechanical and servo-mechanical devices and systems. Per the footnotes in the most recent Taxonomy of Programs manual, “All Mechatronics programs should be moved to TOP 0935.00” (Taxonomy of Programs, 2012, pg. 113). The occupations included in the mechatronics technician occupational group are the following:

- Electro-Mechanical Technicians
- Mechanical Engineering Technicians

Job Opportunities

In 2018, there were 497 jobs in the mechatronics technician occupational group in the Inland Empire/Desert Region. This occupational group is projected to increase employment 2% by 2023. Employers in the region will need to hire 226 workers over the next five years to fill new jobs and backfill jobs that workers are permanently vacating (includes occupational transfers and retirements). Exhibit 1 displays five-year projections for the mechatronics technician occupational group in the Inland Empire/Desert Region.

Exhibit 1: Five-year projections for the mechatronics technician occupational group

2018 Jobs	2023 Jobs	5-Yr % Change (New Jobs)	5-Yr Openings (New + Replacement Jobs)	Annual Openings (New + Replacement Jobs)	% of workers age 55+
497	505	2%	226	45	26%

Source: EMSI 2018.4

Earnings

The entry-level wages for each of the mechatronics technician occupations is above the MIT Living Wage estimate of \$12.39 per hour for a single adult living in the Inland Empire/Desert Region (Glasmeier, 2019). These wages are also sufficient for two working adults and one child (\$14.75 per hour, per adult, or \$30,680 annually for each adult). Exhibit 2 displays wage information for the mechatronics technician occupational group in the Inland Empire/Desert Region.

Exhibit 2: Earnings for the mechatronics technician occupational group

Occupation	Entry to Experienced Hourly Wage Range*	Median Wage*	Average Annual Earnings
Electro-Mechanical Technicians	\$26.94 to \$38.58	\$30.13	\$70,000
Mechanical Engineering Technicians	\$18.61 to \$33.04	\$25.53	\$55,200

Source: EMSI 2018.4

*Entry Hourly is 25th percentile wage, the median is 50th percentile wage, and experienced is 75th percentile wage.

Job Postings, Employers, Skills, Education and Certifications

Exhibit 3 displays the number of job ads posted during the last 12 months along with the regional and statewide average time to fill for the mechatronics technician occupational group in the Inland Empire/Desert Region. On average, local employers fill online job postings for the mechatronics technician occupational group within 42 days. This regional average is six days shorter than the statewide average, indicating that it is easier for local employers to find qualified candidates.

Exhibit 3: Job ads and time to fill for the mechatronics technician occupational group, Apr 2018 – Mar 2019

Occupation	Job Ads	Regional Average Time to Fill (Days)	California Average Time to Fill (Days)
Electro-Mechanical Technicians	152	42	48
Mechanical Engineering Technicians	78	42	48
Total	230	42	48

Source: Burning Glass – Labor Insights

Exhibit 4 displays the employers posting the most job ads for the mechatronics technician occupational group during the last 12 months in the Inland Empire/Desert Region.

Exhibit 4: Employers posting the most job ads for the mechatronics technician occupational group, Apr 2018 – Mar 2019

Occupation	Employers
Electro-Mechanical Technicians (n=119)	<ul style="list-style-type: none"> • C&W Facility Services, Inc. • Staples (warehouse)
Mechanical Engineering Technicians (n=61)	<ul style="list-style-type: none"> • IMI • C&W Facility Services, Inc.

Source: Burning Glass – Labor Insights

Exhibit 5 displays a sample of specialized and employability skills that employers are seeking when looking for workers to fill positions in the mechatronics technician occupational group. Specialized skills are occupation-specific skills that employers are requesting for industry or job competency. Employability skills are foundational skills that transcend industries and occupations; this category is commonly referred to as “soft skills.” The skills requested in job postings may be utilized as a helpful guide for curriculum development.

Exhibit 5: Sample of in-demand skills from employer job ads for the mechatronics technician occupational group, Apr 2018 – Mar 2019

Occupation	Specialized Skills	Employability Skills
Electro-Mechanical Technicians (n=141)	<ul style="list-style-type: none"> • Repair • Robotics • Test Equipment • Calibration & Wiring 	<ul style="list-style-type: none"> • Troubleshooting • Preventive Maintenance • Communication Skills
Mechanical Engineering Technicians (n=69)	<ul style="list-style-type: none"> • Repair • Welding • Quality Assurance and Control • Calipers 	<ul style="list-style-type: none"> • Troubleshooting • Preventative Maintenance • Computer Literacy

Source: Burning Glass – Labor Insights

Exhibit 6 displays the work experience and entry-level education typically required to enter each occupation according to the Bureau of Labor Statistics (BLS), educational attainment for incumbent workers with “some college, no degree” and an “associate degree” according to the U.S. Census (2016-17), and the minimum advertised education requirement from employer job ads.

Exhibit 6: Work experience, typical entry-level education, educational attainment, and minimum advertised education requirements for the mechatronics technician occupational group, Apr 2018 – Mar 2019

Occupation	Typical Entry-Level Education Requirement	Educational Attainment*	Minimum Advertised Education Requirement from Job Ads			
			Number of Job Ads (n=)	High school diploma or vocational training	Associate degree	Bachelor's degree or higher
Electro-Mechanical Technicians	Associate degree	53%	76	82%	5%	13%
Mechanical Engineering Technicians	Associate degree	53%	56	93%	5%	2%

Source: EMSI 2018.4, Burning Glass – Labor Insights

*Percentage of incumbent workers with a Community College Credential or Some Postsecondary Coursework

Program Outcomes

Exhibit 7 displays the headcount from the most recent year available on LaunchBoard for the electro-mechanical technology program in the Inland Empire/Desert Region. There were no completions recorded for the electro-mechanical program in the region over the last three years.

Exhibit 7: Headcount for the electro-mechanical technology program in the Inland Empire/Desert Region

0935.00 Electro-Mechanical Technology	CCC Headcount, Academic Year 2016-17
Chaffey	0
Mt. San Jacinto	29
Norco	0
San Bernardino Valley	64
Total CCC Headcount, Academic Year 2016-17	93

Source: LaunchBoard



References

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April 2019

Appendix: Occupation definitions, sample job titles, five-year projections for mechatronics technician occupations

Occupation Definitions (SOC) code), Education and Training Requirement, Community College Educational Attainment

Electro-Mechanical 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.

Sample job titles: Automation Technician, Automation Test Specialist, Electro-Mechanic, Electro-Mechanical Technician (E/M Technician), Electronic Technician, Engineering Technician, Laboratory Technician (Lab Technician), Maintenance Technician, Mechanical Technician, Product Test Specialist, Robotics Testing Technician, Test Technician, Tester, Underwater Robotacist, Unmanned Aircraft Systems Robotacist (UAS Robotacist)

Entry-Level Educational Requirement: Associate degree

Training Requirement: None

Incumbent workers with a Community College Award or Some Postsecondary Coursework: 53%

Mechanical Engineering 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.

Sample job titles: Automation Design Checker, Designer, Engineering Lab Technician, Engineering Technical Analyst, Laboratory Technician, Maintenance Technician, Mechanical Designer, Mechanical Technician, Process Engineering Technician, Process Technician, Research and Development Technician

Entry-Level Educational Requirement: Associate degree

Training Requirement: None

Incumbent workers with a Community College Award or Some Postsecondary Coursework: 53%



Table 1: 2018 to 2023 job growth, wages, education, training, and work experience required for the mechatronics technician occupational group, Inland Empire/Desert Region

Occupation (SOC)	2018 Jobs	5-Yr Change	5-Yr % Change	Annual Openings (New + Replacements + Jobs)	Entry-Experienced Hourly Wage*	Median Hourly Wage*	Average Annual Earnings	Typical Entry-Level Education & On-The-Job Training Required	Work Experience Required
Electro-Mechanical Technicians (17-3024)	344	(2)	(1%)	30	\$26.94 to \$38.58	\$30.13	\$70,000	Associate degree & None	None
Mechanical Engineering Technicians (17-3027)	152	10	7%	15	\$18.61 to \$33.04	\$25.53	\$55,200	Associate degree & None	None
Total	497	8	2%	45	-	-	-	-	-

Source: EMSI 2018.4

*Entry Hourly is 25th percentile wage, the median is 50th percentile wage, experienced is 75th percentile wage.