

Automotive Repair Technician

Inland Empire/Desert Region (Riverside-San Bernardino-Ontario Metropolitan Statistical Area)

Summary

- Employment for the automotive repair occupational group is expected to **increase by 6% between 2017 and 2022** in the Inland Empire/Desert Region. More than **5,500 job openings** will be available over the five-year timeframe.
- The median wage for each occupation in the automotive repair occupational group is **above the MIT Living Wage estimate of \$12.30 per hour** for a single adult living in the Inland Empire/Desert Region.
- There appears to be an adequate supply of educated workers for this occupational group based on the average number of program completers from postsecondary education programs (**1,098 total awards 213 average annual community college awards and 885 annual awards other education institutions**) and the annual openings for automotive repair in the local region (**1,101 annual job openings**). However, the quality of the private programs, which issue the vast majority of the awards, is not known. If employers prefer community college graduates to graduates from these programs, a case could be made for program expansion to increase the pool of highly qualified automotive repair technicians.

Introduction

This report details occupations relevant to the automotive repair program. Completion of the program provides students with the fundamental automotive concepts that will allow them to service, maintain, diagnose, and repair automotive vehicles. The two occupations included in the automotive repair occupational group are the following:

- Automotive Service Technicians and Mechanics
- Electronics Equipment Installers and Repairers, Motor Vehicles

Job Opportunities

In 2017, there were more than 10,200 automotive repair jobs in the Inland Empire/Desert Region. This occupational group is projecting to increase employment 6% by 2022. Employers in the region will need to hire more than 5,500 workers over the next five years to fill new jobs and backfill jobs that workers are permanently vacating (includes retirements). Appendix A, Table 1 shows the projected job growth for each of the occupations in this group.

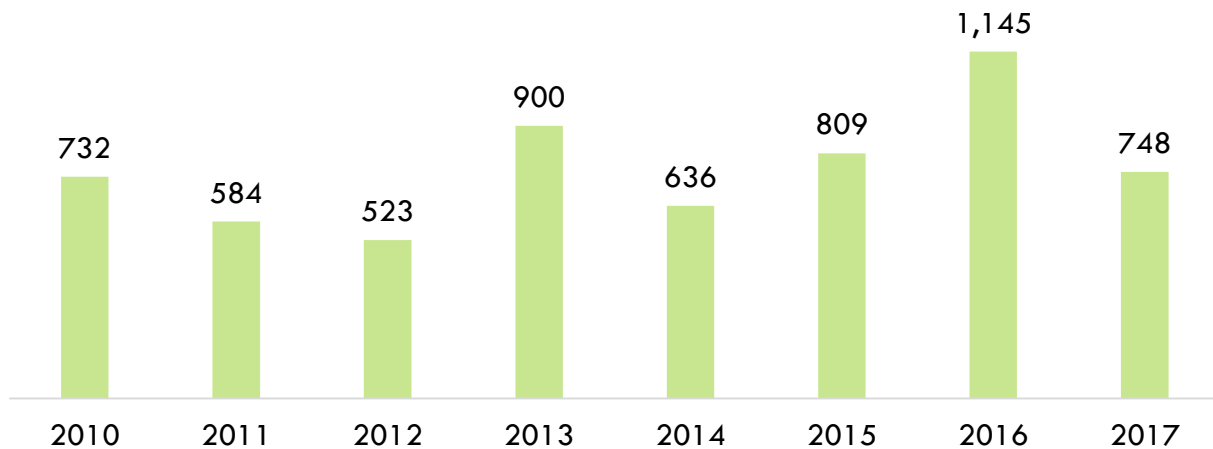
Exhibit 1: Five-year projections for the automotive repair occupational group in the Inland Empire/Desert Region

Region	2017 Jobs	5-Yr % Change (New Jobs)	5-Yr Openings (New + Replacement Jobs)	Annual Openings (New + Replacement Jobs)	% of workers age 55+
Inland Empire/Desert Region	10,232	6%	5,504	1,101	17%

Source: EMSI 2018.1

Over the last 12 months (April 2017 to March 2018), there were 776 advertisements (ads) for jobs in the automotive repair occupational group in the Inland Empire/Desert Region. From 2010 to 2017, there was an annual average of 868 job ads per year (Exhibit 2).

Exhibit 2: Number of online job postings for the automotive repair occupational group in the Inland Empire/Desert Region, 2010 to 2017



Source: Burning Glass – Labor Insights

Exhibit 3 displays the number of job posting for each occupation in the automotive repair group during the last 12 months, along with the regional and national time to fill. On average, both occupations take about a week longer to fill in the Inland Empire/Desert Region than the nation as a whole.

Exhibit 3: Job ads and average time to fill by each of the automotive repair occupations in the Inland Empire/Desert Region during the last 12 months, Apr 2017 – Mar 2018

Occupation	Job Ads	Regional Average Time to Fill (Days)	National Average Time to Fill (Days)
Automotive Service Technicians and Mechanics	766	51	44
Electronic Equipment Installers and Repairers, Motor Vehicles	10	48	40
TOTAL	776	-	-

Source: Burning Glass – Labor Insights

Earnings

The median wage for each of the occupations in the automotive repair occupational group is above the MIT Living Wage estimate of \$12.30 per hour for a single adult living in the Inland Empire/Desert Region. These wages are also sufficient for an adult living in a household with one other working adult and one child (\$14.50 per hour, per adult or \$30,160 annually for each adult). Exhibit 4 displays wage information for this occupation group in the Inland Empire/Desert Region.

Exhibit 4: Earnings for the automotive repair occupational group in the Inland Empire/Desert Region

Occupation	Entry to Experienced Hourly Earnings Range*	Median Wage*	Average Annual Earnings
Electronic Equipment Installers and Repairers, Motor Vehicles	\$13.38 to \$19.52	\$16.05	\$34,900
Automotive Service Technicians and Mechanics	\$11.46 to \$25.45	\$15.95	\$39,900

Source: EMSI 2018.1

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

Work Locations, Employers, Skills, and Education

Exhibit 5 displays the top employers posting job ads as well as the top work locations from job ads during the last 12 months.

Exhibit 5: The top employers and work locations for the automotive repair occupational group in the Inland Empire/Desert Region during the last 12 months, Apr 2017 to Mar 2018

Occupation	Top Employers	Top Work Locations
Automotive Repair Occupational Group (n=667)	<ul style="list-style-type: none"> Jiffy Lube Pep Boys Goodyear Bridgestone/Firestone 	<ul style="list-style-type: none"> Fontana Riverside Ontario San Bernardino

Source: Burning Glass – Labor Insights

Exhibit 6 lists the top specialized and soft skills that employers are seeking when looking for workers to fill automotive repair positions. N/A indicates that there is no information available due to a skill not applying to an occupation or there were too few job postings to obtain data.

Exhibit 6: Sample of in-demand skills from employer job ads for automotive repair occupations in the Inland Empire/Desert Region, Apr 2017 to Mar 2018

Occupation	Specialized skills	Soft skills	Software and Programming skills
Automotive Service Technicians and Mechanics (n=661)	<ul style="list-style-type: none"> Auto Repair Inspection Customer Service 	<ul style="list-style-type: none"> Communication Skills Problem Solving Preventive Maintenance 	<ul style="list-style-type: none"> Microsoft Office
Electronic Equipment Installers and Repairers, Motor Vehicles (n=10)	<ul style="list-style-type: none"> Motherboards Global Positioning System (GPS) Soldering 	<ul style="list-style-type: none"> Prioritizing Tasks Preventive Maintenance 	<ul style="list-style-type: none"> N/A

Source: Burning Glass – Labor Insights

Exhibit 7 displays the entry-level education level education typically required to enter each occupation according to the Bureau of Labor Statistics, educational attainment for incumbent workers with “some college, no degree” and an “associate degree” according to the U.S. Census, and the minimum advertised education requirement requested by employers in online job ads.

Exhibit 7: Educational attainment and online job ads with minimum advertised education requirements for the automotive repair occupational group in the Inland Empire/Desert Region, April 2017 to March 2018

Occupation	Typical Entry-Level Education Requirement	Educational Attainment (Percent holding a Community College-level Education)*	Minimum Advertised Education Requirement from Job Ads			
			Number of Job Postings (n=)	High school diploma or vocational training	Associate degree	Bachelor's degree or higher
Automotive Service Technicians and Mechanics	Postsecondary nondegree award	34%	374	99%	1%	-
Electronic Equipment Installers and Repairers, Motor Vehicles	High school diploma or equivalent	51%	4	100%	-	-

Source: EMSI 2018.1, Current Population Survey, Burning Glass – Labor Insights

*Community college-level education is the combined percentage of incumbent workers 25 years or older with “some college, no degree” or an “associate degree.”

Industry

Exhibit 8 displays the industries that employ the most automotive repair occupations in the two-county region. Staffing patterns show the industries that employ the most workers of a specific occupation.

Exhibit 8: Top industries employing automotive repair occupations in the Inland Empire/Desert Region, Apr 2017 to Mar 2018

Occupation	Top Industries from Staffing Pattern (NAICS), Percent of Occupation Employed in Industry	Industry Classification from Job Ads	
		Number of Job Postings (n=)	Top Industries from Job Ads (NAICS)
Automotive Service Technicians and Mechanics	<ul style="list-style-type: none"> Automotive Repair and Maintenance (8111) 56% Automobile Dealers (4411) 24% 	594	<ul style="list-style-type: none"> Automotive Repair and Maintenance (8111) Automotive Parts, Accessories, and Tire Stores (4413)
Electronic Equipment Installers and Repairers, Motor Vehicles	<ul style="list-style-type: none"> Electronics and Appliance Stores (4431) 25% Automotive Parts, Accessories, and Tire Stores (4413) 25% Automotive Repair and Maintenance (8111) 11% 	8	<ul style="list-style-type: none"> Electronics and Appliance Stores (4431)

Source: EMSI 2018.1, Burning Glass – Labor Insights

Student Completions

Exhibit 9 shows the annual average regional community college awards (associate degrees and certificates) conferred during the three academic years between 2014 and 2017, with the relevant TOP code. Exhibit 10 displays the program title used at each college for this TOP code, sourced from the Chancellor’s Office Curriculum Inventory (COCI). Awards granted from 2013 to 2016 outside of the California Community Colleges are in Exhibit 11, along with the relevant CIP code. Please note, an award is not equivalent to a single person in search of a job opening since a student may earn more than one award, such as an associate degree in addition to a certificate. Community College student outcome information was obtained from the CTE LaunchBoard based on the selected TOP code(s) and region.

Exhibit 9: Annual average community college student completions for automotive technology programs in the Inland Empire/Desert Region

0948.00 - Automotive Technology	Annual Community College Headcount (2016-17)	Community College Annual Average Awards (2014-17)
Barstow	119	
Associate Degree		4
Certificate 18 to < 30 semester units		3
Chaffey	412	
Associate Degree		9
Certificate 30 to < 60 semester units		4
Certificate 18 to < 30 semester units		40
Copper Mountain	41	
Associate Degree		2
Desert	355	
Associate Degree		4
Certificate 18 to < 30 semester units		40
Mt. San Jacinto	195	
Associate Degree		6
Certificate 30 to < 60 semester units		7
Palo Verde	163	
Associate Degree		1*
Certificate 18 to < 30 semester units		6
Certificate 6 to < 18 semester units		6
Riverside	540	
Associate Degree		12
Certificate 18 to < 30 semester units		24
San Bernardino	231	
Associate Degree		4
Certificate 30 to < 60 semester units		7
Certificate 18 to < 30 semester units		7
Certificate 6 to < 18 semester units		5
Victor Valley	639	
Associate Degree		9
Certificate 30 to < 60 semester units		2
Certificate 18 to < 30 semester units		10
Total Community College Headcount (2016-17)	2,691	
Total Annual Average Community College Awards		213

Source: LaunchBoard, IPEDS

*Palo Verde awarded one associate degree in 2016-17

0948.00 - Automotive technology program Strong Workforce outcomes in the Inland Empire/Desert Region in the academic year 2015-16:

- Number of course enrollments: 4,905 (California median: 4,905)*
- Number of students who transferred to a 4-year institution: 45 (CA: 48)
- Employed in the second fiscal quarter after exit: 60% (CA: 69%)
- Median earnings in the second fiscal quarter after exit: \$5,495 (CA:\$6,104)
- Employed in the fourth fiscal quarter after exit: 61% (CA: 70%)
- Median annual earnings: \$19,037 (CA: \$22,687)
- The percentage in a job closely related to the field of study: 77% (CA: 68%) [2014-15]
- Median change in earnings: 56% (CA: 66%)
- The proportion of students who attained a living wage: 34% (CA: 48%)

*academic year 2016-17

Exhibit 10: Program titles for automotive technology programs at each school in the Inland Empire/Desert Region

School	Program Titles
Barstow	<ul style="list-style-type: none"> • Automotive repair
Chaffey	<ul style="list-style-type: none"> • General Automotive Service Technician • Master Automotive Technician • Engine Performance (Smog Check) Technician
Copper Mountain	<ul style="list-style-type: none"> • Automotive repair • Steering and Suspension Service • Engine Performance and Driveability • Air Conditioning and Heating Service Repair • Transmission Service, Repair, and Overhaul
Desert	<ul style="list-style-type: none"> • Automotive Emissions • Automotive Terminology • Automotive Quick Service • Brakes • Light and Medium Duty Diesel • Automotive Electrical • Automotive Air Conditioning • Automotive Transmission & Axle • General Automotive Service • Automotive Engine Management • Automotive repair • Steering Suspension, & Alignment
Mt. San Jacinto	<ul style="list-style-type: none"> • Automotive/Transportation Technology • Light Duty Automotive Service
Palo Verde	<ul style="list-style-type: none"> • Automotive repair
Riverside	<ul style="list-style-type: none"> • Automotive repair: Electrical • Automotive repair: Ford • Automotive repair: General Motors • Automotive repair: Mechanical • Automotive repair: Toyota
San Bernardino	<ul style="list-style-type: none"> • Automatic and Manual Transmission • Automotive Technician • Engine Performance • Wheel Alignment and Brakes
Victor Valley	<ul style="list-style-type: none"> • Automotive Specialist I • Automotive Specialist II • Automotive repair

Source: Chancellor’s Office Curriculum Inventory (COCI)

Exhibit 11: Annual average student completions for automobile/automotive mechanics/technology/technician programs in the Inland Empire/Desert Region

47.0604 – Automobile/Automotive Mechanics Technology/Technician	Other Educational Institutions Annual Average Certificates or Other Credit Awards (2013-16)
CET-Colton	
Award < 1 academic yr	4
Universal Technical Institute of California Inc	
Award 2 < 4 academic yrs	881
Award 1 < 2 academic yrs	1*
Total annual average other awards	885

Source: IPEDS

*Universal Technical Institute of California issued 1, 1<2 academic year award in 2014-15

Sources

O*Net Online

Labor Insight/Jobs (Burning Glass)

Economic Modeling Specialists International (EMSI)

MIT Living Wage Calculator

Chancellor's Office Curriculum Inventory (COCI, version 2.0)

The Integrated Postsecondary Education Data System (IPEDS)

Michael Goss, Director

Center of Excellence, Inland Empire/Desert Region

michael.goss@chaffey.edu

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Appendix A: Occupation definitions, sample job titles, five-year projections, and earnings for automotive repair occupations

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

Electronic Equipment Installers and Repairers, Motor Vehicles (49-2096)

Install, diagnose, or repair communications, sound, security, or navigation equipment in motor vehicles.

Sample job titles: Digital Tech (Digital Technician), Electrical Technician, Electronics Automotive Technician, Electronics Technician, Automotive Technician (Automotive Tech), Failure Analysis Technician (FA Technician), Refurbish Technician (Refurb Tech), Senior Electronics Technician, Technician, Test Technician, Electrical Automotive Technician, Electrical Technician, Automotive Assistant, Automotive Technician, Generation Technician, Instrument and Controls Technician (I & C Technician), Relay Tester, Results Technician, Test Specialist, Test Technician

Entry-Level Educational Requirement: High school diploma or equivalent

Training Requirement: One to twelve months on-the-job training

Percentage of incumbent workers with a Community College Award or Some Postsecondary Coursework: 51%

Automotive Service Technicians and Mechanics (49-3023)

Diagnose, adjust, repair, or overhaul automotive vehicles.

Sample job titles: Auto Technician, Automobile Technician, Automotive Service Technician, Automotive Technician, Certified ASE Master Automotive Technician (Certified Automotive Service Excellence Master Automotive Technician), Master Automotive Technician, Master Technician, Mechanic, Shop Foreman, Truck Technician, A/C Technician (Air Conditioning Technician), Automobile Mechanic (Auto Mechanic), Automobile Technician, Drivability Technician, Heavy Line Technician, Lube Technician, Oil Bay Technician, Quick Service Technician, Service Technician

Entry-Level Educational Requirement: Postsecondary nondegree award

Training Requirement: Less than one-month on-the-job training

Percentage of incumbent workers with a Community College Award or Some Postsecondary Coursework: 34%



Table 1. 2017 to 2022 job growth for the automotive repair occupational group, Inland Empire/Desert Region

Occupation (SOC)	2017 Jobs	2022 Jobs	5-Yr Change	5-Yr % Change	5-Yr Openings (New + Replacement Jobs)	Annual Openings (New + Replacement Jobs)	Entry to Experienced Hourly Earnings Range*	Median Wage*	Average Annual Earnings
Automotive Service Technicians and Mechanics (49-3023)	9,944	10,603	659	7%	5,374	1,075	\$11.46 to \$25.45	\$15.95	\$39,900
Electronic Equipment Installers and Repairers, Motor Vehicles (49-2096)	287	243	(44)	(15%)	130	26	\$13.38 to \$19.52	\$16.05	\$34,900
Total	10,232	10,846	614	6%	5,504	1,101	-	-	-

Source: EMSI 2018.1

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