



## Diesel Technology (TOP 0947.00)

February 2023

Prepared by the South Central Coast Center of Excellence for  
Labor Market Research

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### Program Recommendation

This report was compiled by the South Central Coast<sup>1</sup> Center of Excellence to provide regional labor market data for the program recommendation – Diesel Technology. This report can help determine whether there is demand in the local labor market that is not being met by the supply from programs of study (CCC and non-CCC) that align with this occupation group.

### Key Findings

- In the South Central Coast region **the number of jobs related to Diesel Technology are expected to remain steady** for Automotive Service Technicians and Mechanics and **increase** for Bus and Truck Mechanics and Diesel Engine Specialists.
- Diesel Technology is anticipated to experience a **high risk of automation** for both related occupations.
- In 2021 there were 213 regional completions in programs related to the occupations identified as aligned with Diesel Technology and 612 openings, indicating an **undersupply**.
- Typical entry-level education ranges from **a postsecondary nondegree award** for Automotive Service Technicians and Mechanics to **a high school diploma or equivalent** for Bus and Truck Mechanics and Diesel Engine Specialists.
- Completers of Diesel Technology programs from the 2019-2020 academic year, in the South Central Coast region, had a **median annual wage upon completion of \$38,274**.
- 46% of students are **employed within a year** after completing a program.
- 50% of students **attained a living wage** within a year of completion.
- Completers experienced an average of **+68% change in earnings after exiting**.
- 87% of students were **part-time**, 38% **skill builders**, 39% **first-generation**, and 81% **economically disadvantaged**.

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<sup>1</sup> The South Central Coast Region consists of San Luis Obispo County, Santa Barbara County, Ventura County, and the following cities from North Los Angeles County: Canyon Country, Castaic, Lake Hughes, Lancaster, Littlerock, Llano, Newhall, Palmdale, Pearblossom, Santa Clarita, Stevenson Ranch, and Valencia.

## Occupation Codes and Descriptions

There are two occupations in the standard occupational classification (SOC) system that were identified as related to Diesel Technology for this analysis. The occupation titles and descriptions, as well as reported job titles, are included in Exhibit 1.

**Exhibit 1 – Occupation, Description, and Sample Job Titles**

<b>SOC Code</b>	<b>Title</b>	<b>Description</b>	<b>Sample of Reported Job Titles</b>
49-3023	<b>Automotive Service Technicians and Mechanics</b>	Diagnose, adjust, repair, or overhaul automotive vehicles.	Automotive Drivability Technician (Auto Drivability Tech), Automotive Mechanic (Auto Mechanic), Automotive Service Technician (Auto Service Tech), Automotive Technician, Diagnostic Technician, Heavy Line Technician, Lubrication Technician (Lube Tech), Mechanic, Quick Service Technician, Service Technician
49-3031	<b>Bus and Truck Mechanics and Diesel Engine Specialists</b>	Diagnose, adjust, repair, or overhaul buses and trucks, or maintain and repair any type of diesel engines. Includes mechanics working primarily with automobile or marine diesel engines.	Bus Mechanic, Diesel Mechanic, Diesel Technician (Diesel Tech), Fleet Mechanic, General Repair Mechanic, Heavy Truck Mechanic, Service Technician, Trailer Mechanic, Transit Mechanic, Truck Mechanic

Source: O\*NET Online

## Current and Future Employment

In the South Central Coast region, the number of jobs related to Diesel Technology are expected to remain steady for Automotive Service Technicians and Mechanics, and to increase for Bus and Truck Mechanics and Diesel Engine Specialists.

**Exhibit 2 – Five-Year Projections for Diesel Technology in the South Central Coast Region**

SOC	Occupation	2022 Jobs	2027 Jobs	2022-2027 Change	2022-2027 % Change
49-3023	<b>Automotive Service Technicians and Mechanics</b>	3,986	4,032	46	1%
49-3031	<b>Bus and Truck Mechanics and Diesel Engine Specialists</b>	1,025	1,084	59	6%

Source: Economic Modeling Specialists International (EMSI)

## Earnings

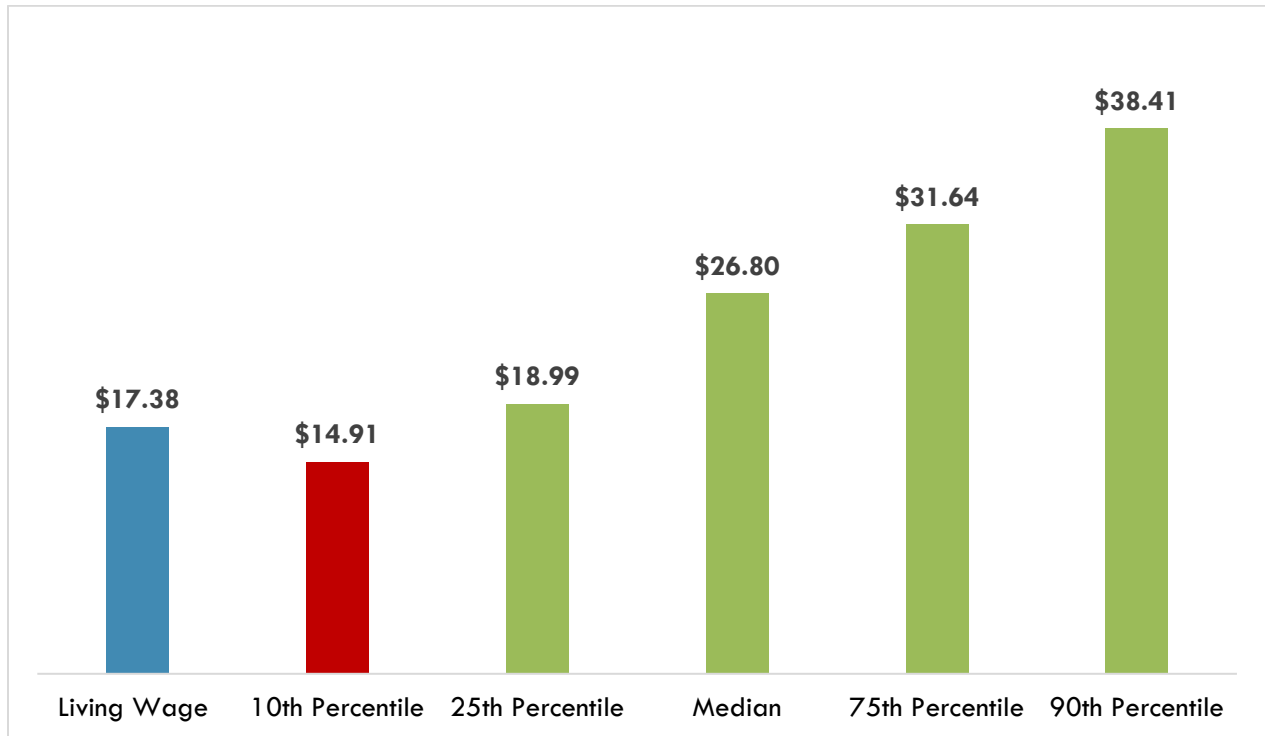
Exhibit 3 contains hourly wages and annual average earnings for these occupations. Entry-level hourly earnings are represented by the 25<sup>th</sup> percentile of wages, median hourly earnings are represented by the 50<sup>th</sup> percentile of wages, and experienced hourly earnings are represented by the 75<sup>th</sup> percentile of wages, demonstrating various levels of employment.

**Exhibit 3 – Earnings for Diesel Technology in the South Central Coast Region**

SOC	Occupation	Entry-Level Hourly Earnings	Median Hourly Earnings	Experienced Hourly Earnings
49-3023	<b>Automotive Service Technicians and Mechanics</b>	\$15.38	\$24.74	\$29.46
49-3031	<b>Bus and Truck Mechanics and Diesel Engine Specialists</b>	\$22.59	\$28.85	\$33.82

Source: Economic Modeling Specialists International (EMSI)

**Exhibit 3b – Earnings for Diesel Technology in the South Central Coast Region**



Source: Family Needs Calculator (Living wage is based on Single Adult households with no children); Economic Modeling Specialists International (EMSI)

## Employer Job Postings

In this research brief, real-time labor market information is used to provide a more nuanced view of the current job market, as it captures job advertisements for occupations relevant to the field of study. Employer job postings are consulted to understand who is looking in the field, and what they are looking for in potential candidates. To identify job postings related to Diesel Technology the following standard occupational classifications were used:

49-3023	Automotive Service Technicians and Mechanics
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists

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## Top Occupations

In 2022, there were 2,095 employer postings for the occupations related to Diesel Technology.

**Exhibit 4 – Top Occupations by Job Postings**

SOC Code	Occupation	Job Postings, Full Year 2022
49-3023	<b>Automotive Service Technicians and Mechanics</b>	1,817
49-3031	<b>Bus and Truck Mechanics and Diesel Engine Specialists</b>	278

Source: Labor Insight/Jobs (Burning Glass)

**Exhibit 4b – Top Occupations and Risk of Automation**

SOC Code	Occupation	Risk of Automation
49-3023	<b>Automotive Service Technicians and Mechanics</b>	High
49-3031	<b>Bus and Truck Mechanics and Diesel Engine Specialists</b>	High

Source: Labor Insight/Jobs (Burning Glass)

## Top Titles

The top job titles for employers posting ads for jobs related to Diesel Technology are listed in Exhibit 5. Automotive Technician is mentioned as the job title in 12% of all relevant job postings (241 postings).

**Exhibit 5 – Job Titles**

<b>Title</b>	<b>Job Postings, Full Year 2022</b>
Automotive Technicians	241
Automotive Mechanics	103
Automotive Technicians/Mechanics	79
Service Technicians	62
Diesel Mechanics	61

Source: Labor Insight/Jobs (Burning Glass)

## Top Employers

Exhibit 6 lists the major employers hiring professionals in the Diesel Technology field. The top employer posting job ads was Pep Boys. The top worksite cities for these occupations were Oxnard, Santa Clarita, Santa Maria, Thousand Oaks, and Ventura.

**Exhibit 6 – Top Employers (n=701)**

<b>Employer</b>	<b>Job Postings, Full Year 2022</b>
Pep Boys	54
Jiffy Lube	45
Walmart	44
AutoNation	42
Lithia Motors	37

Source: Labor Insight/Jobs (Burning Glass)

## Skills

The tables in Exhibit 7 list employers' most commonly requested skills in job postings related to Diesel Technology. Automotive Services is the most sought-after specialized skill for employers, followed by Suspension (Vehicle) and Brakes. Valid Driver's License, Customer Service, and Communications were the most requested baseline skills. Microsoft Excel, Microsoft Office, and Microsoft Outlook were the most commonly requested software and programming skills.

**Exhibit 7 – Specialized Skills (n= 5,459)**

<b>Skills</b>	<b>Job Postings, Full Year 2022</b>
Automotive Services	455
Suspension (Vehicle)	275
Brakes	274
Mechanics	255
Changing Oil	218
Hand Tools	214
HVAC	180
Transmission	178
Vehicle Inspection	176
Diesel Engines	165
Vehicle Maintenance	164
Preventative Maintenance	147
Electrical Systems	139
Automotive Technology	124
Tires	121

Source: Labor Insight/Jobs (Burning Glass)

**Exhibit 7b – Baseline Skills (n= 7,337)**

<b>Skills</b>	<b>Job Postings, Full Year 2022</b>
Valid Driver's License	999
Customer Service	646
Communications	609
Good Driving Record	380
Management	319
Detail Oriented	295
Sales	286
Troubleshooting (Problem Solving)	284
Problem Solving	242
Lifting Ability	209

Source: Labor Insight/Jobs (Burning Glass)

**Exhibit 7c – Software and Programming Skills (n= 445)**

<b>Skills</b>	<b>Job Postings, Full Year 2022</b>
Microsoft Excel	58
Microsoft Office	47
Microsoft Outlook	36
Software Systems	28
Business Software	22
Microsoft Word	22
Apache Struts	21
SAP Applications	18
Microsoft PowerPoint	17
Fleet Maintenance Software	16

Source: Labor Insight/Jobs (Burning Glass)



### Industry Concentration

Exhibit 8 shows the industries with the most Diesel Technology postings in the South Central Coast region. Note: 40% of records have been excluded because they do not include an industry. As a result, the chart below may not be representative of the full sample.

**Exhibit 8 – Industries Employing the Most in the Diesel Technology Field, 2022**

<b>Industry</b>	<b>Occupation Group Jobs in Industry</b>	<b>% of Occupation Group in Industry</b>
Retail Trade	407	32%
Manufacturing	257	20%
Other Services (except Public Administration)	174	14%
Transportation and Warehousing	139	11%
Administrative and Support and Waste Management and Remediation Services	118	9%

## Certifications

Exhibit 9 lists the most in-demand certifications in the Diesel Technology field. The top requested certification in job postings was Automotive Service Excellence (ASE) Certification.

**Exhibit 9 – Certifications (n= 782)**

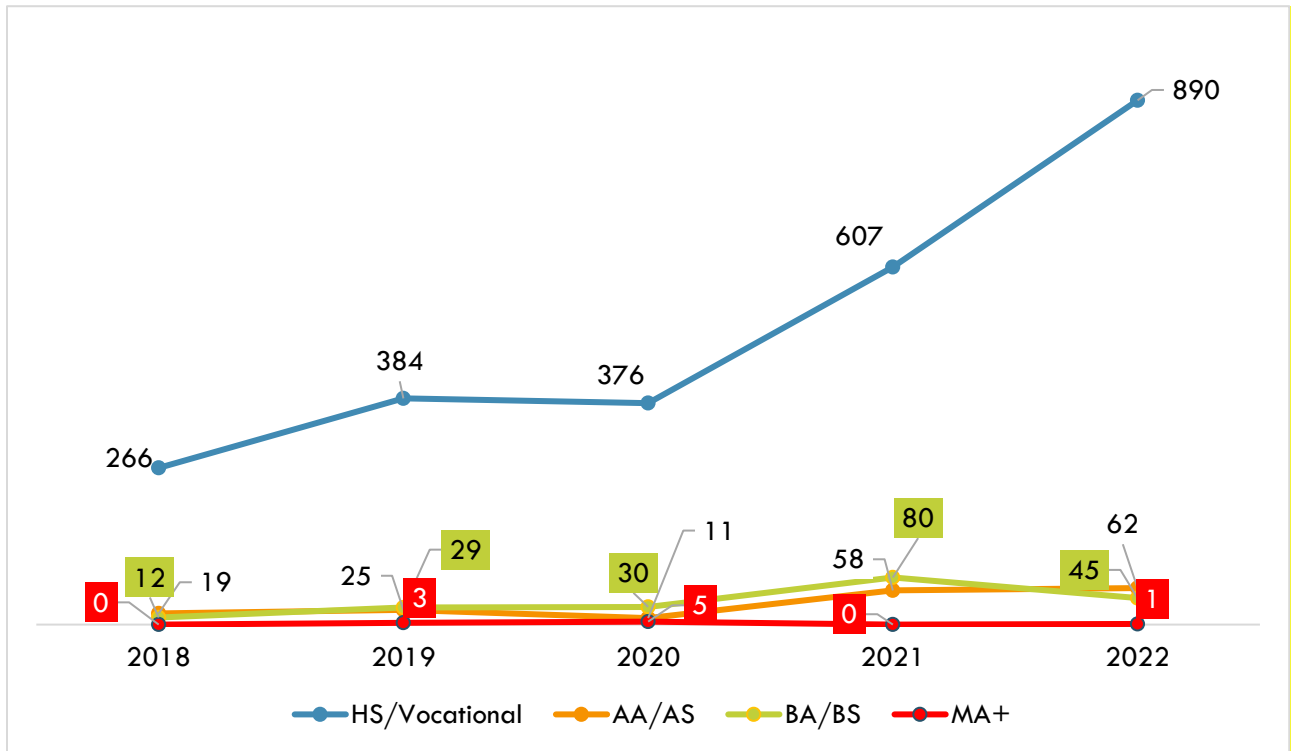
<b>Certifications</b>	<b>Job Postings, Full Year 2022</b>
Automotive Service Excellence (ASE) Certification	420
Commercial Driver's License (CDL)	92
CDL Class A License	50
CDL Class B License	29
Security Clearance	24

Source: Labor Insight/Jobs (Burning Glass)

### Job Postings - Minimum Educational Attainment Over Time

Exhibit 10 displays the change in job advertisements over the last five years for Diesel Technology, according to the minimum advertised education. In 2022, there were 998 total job ads posted with a minimum advertised education, with 890 of them requiring a high school diploma or vocational training.

**Exhibit 10 – Educational Demand, Minimum Advertised**



Source: Labor Insight / Jobs (Burning Glass)

### Job Postings – Proportion of Job Postings by Minimum Educational Attainment Required

To gauge employer preference for candidates with particular education levels, the proportion of job postings by minimum advertised education appears in Exhibit 11. Employers posting job ads for Diesel Technology have frequently sought candidates with a high school diploma or vocational training.

**Exhibit 11 – Occupational Demand by Education, Minimum Advertised**

Minimum Education Requirement	2018	2019	2020	2021	2022
HS Diploma / Vocational Training	90%	87%	89%	81%	89%
Associate Degree	6%	6%	3%	8%	6%
Bachelor's Degree	4%	7%	7%	11%	5%
Graduate Degree	0%	1%	1%	0%	0%

Source: Labor Insight/Jobs (Burning Glass)

## Education and Training

Exhibit 12 shows the typical entry-level education requirement for the occupations of interest, along with the typical on-the-job training needed to attain competency in the occupation.

**Exhibit 12 – Education and Training Requirements**

<b>SOC</b>	<b>Occupation</b>	<b>Typical entry-level education</b>	<b>Typical on-the-job training</b>
49-3023	<b>Automotive Service Technicians and Mechanics</b>	Postsecondary nondegree award	Short-term on-the-job training
49-3031	<b>Bus and Truck Mechanics and Diesel Engine Specialists</b>	High school diploma or equivalent	Long-term on-the-job training

Source: Bureau of Labor Statistics Employment Projections (Educational Attainment)

### Regional Completions and Openings

There were 213 regional completions (2021) and 612 regional openings (2021) in the South Central Coast region for programs related to the occupations in this report.

#### Exhibit 13 – Completions and Openings

<b>7</b> Regional Institutions had Related Programs (2021)	<b>213</b> Regional Completions (2021)	<b>612</b> Annual Openings (2021)
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Source: Economic Modeling Specialists International (EMSI)

### Related Programs

CIP Code	Program	Completions (2021)
47.0604	Automobile/Automotive Mechanics Technology/Technician	167
47.0605	Diesel Mechanics Technology/Technician	23
47.0603	Autobody/Collision and Repair Technology/Technician	23

Source: Economic Modeling Specialists International (EMSI)

## CCC and Non-CCC Awards

Exhibit 14 lists the number of completers from programs related to Diesel Technology in the South Central Coast region.

**Exhibit 14 – CCC and Non-CCC Awards the South Central Coast, 2021**

CCC Programs	Completers
Oxnard College	81
Ventura College	48
Allan Hancock College	38
Cuesta College	26
Santa Barbara City College	11
College of the Canyons	5
Antelope Valley College	4
Non-CCC Programs	Completers
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Source: Economic Modeling Specialists International (EMSI)

## Student Outcomes

The CTE LaunchBoard provides student outcome data on the effectiveness of CTE programs. The following student outcome information was collected from exiters of the regional Diesel Technology Programs (TOP: 0947.00) for the 2019-2020 academic year.

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**Sources**

O\*Net Online, Labor Insight/Jobs (Burning Glass), Economic Modeling Specialists International (EMSI), MIT Living Wage Calculator, Bureau of Labor Statistics (BLS) Education Attainment, California Community Colleges Chancellor's Office Management Information Systems (MIS) Data Mart, CTE LaunchBoard, Statewide CTE Outcomes Survey, Employment Development Department Unemployment Insurance Dataset

**Notes**

Data included in this analysis represent the labor market demand for relevant positions most closely related to Diesel Technology. Traditional labor market information was used to show current and projected employment based on data trends, as well as annual average awards granted by regional community colleges. Real-time labor market information captures job post advertisements for occupations relevant to the field of study and can signal demand and show what employers are looking for in potential employees, but is not a perfect measure of the quantity of open positions. All representations have been produced from primary research and/or secondary review of publicly and/or privately available data and/or research reports. The most recent data available at the time of the analysis was examined; however, data sets are updated regularly and may not be consistent with previous reports. Efforts have been made to qualify and validate the accuracy of the data and findings; however, neither the Centers of Excellence for Labor Market Research (COE), COE host district, nor California Community Colleges Chancellor's Office are responsible for the applications or decisions made by individuals and/or organizations based on this study or its recommendations.