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Labor Market Analysis

Drive Train Technicians



Prepared by Central Valley/Mother Lode Center of Excellence



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Table of Contents

Summary.....	2
Key Findings	2
Recommendation.....	2
Introduction	3
Employment.....	4
Wages.....	5
Job Postings.....	5
Top Employers.....	6
Top Job Titles	6
Salaries.....	7
Education	7
Baseline, Specialized, and Software Skills	7
Certifications	8
Education, Work Experience, & Training	8
Supply.....	9
Student Outcomes	10
Recommendation	11
Appendix: Methodology & Data Sources.....	12

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Summary

The Central Valley/Mother Lode Center of Excellence developed this report for Columbia College to determine whether there is demand in the local labor market that is not being met by the supply from postsecondary programs. This report summarizes labor market demand, wages, skills, and postsecondary supply for *Drive Train Technicians*, which includes:

- Electrical and Electronics Installers and Repairers, Transportation Equipment (SOC 49-2093)
- Electronic Equipment Installers and Repairers, Motor Vehicles (SOC 49-2096)
- Automotive Service Technicians and Mechanics (SOC 49-3023)

Key Findings

- **Occupational Demand** — Occupations related to *Drive Train Technicians* have a labor market demand of 385 annual job openings in the North Central Valley/Northern Mother Lode (NCV/NML) subregion. Between 2022 and 2027, automotive service technicians and mechanics are projected to have the most demand with 377 annual job openings and with a growth rate of 11%.
- **Wages** — Average entry-level earnings of \$20.60/hour for *Drive Train Technicians* occupations are higher than the living wage in the NCV/NML subregion, which is \$12.65/hour for a single adult.¹ Electrical and electronics installers and repairers, transportation equipment earn the highest entry-level wage, \$30.61/hour.
- **Employers and Occupational Titles** — Employers in the NCV/NML subregion include Les Schwab Tire Center, Pep Boys, and Jiffy Lube. The most common job title is lube technicians.
- **Skills and Certifications** — The top baseline skill is customer service, the top specialized skill is automotive services, and the top software skill is Microsoft Office. The most in-demand certification is an Automotive Service Excellence (ASE) Certification.
- **Education** — A high school diploma or equivalent is typically required for electronic equipment installers and repairers, motor vehicles. A postsecondary nondegree award is typically required for automotive service technicians and mechanics and electrical and electronics installers and repairers, transportation equipment.
- **Supply and Demand Analysis** — An analysis of supply and demand reveals that there are 385 annual openings (i.e., demand) and 125 average annual postsecondary degrees awarded (i.e., supply) in the NCV/NML subregion. This suggests an undersupply of 260 workers. In the CVML region, there are 949 annual openings and 480 average annual awards conferred suggesting an undersupply of 469 workers.

Recommendation

Based on a comparison of demand and supply, there is an undersupply of *Drive Train Technicians* in the NCV/NML subregion and the CVML region. The Center of Excellence recommends that Columbia College work with the regional directors, the college's advisory board, and local industry in the expansion of programs to address the shortage of *Drive Train Technicians*.

¹ The term "living wage" in Center of Excellence reports is calculated by averaging the self-sufficiency wages from the Insight Center's California Family Needs Calculator for each county in the subregion: <https://insightccd.org/tools-metrics/self-sufficiency-standard-tool-for-california/>.

Introduction

The Central Valley/Mother Lode Center of Excellence developed this report to provide Columbia College with labor market information for *Drive Train Technicians*. The geographical focus for this report is the North Central Valley/Northern Mother Lode (NCV/NML) subregion, but regional demand and supply data has been included for broader applicability and use. Analysis of the program and occupational data related to *Drive Train Technicians* is included in the report. The Standard Occupational Classification (SOC) System codes and occupational titles used in this report from the Bureau of Labor Statistics and O*NET OnLine are shown below.

Electrical and Electronics Installers and Repairers, Transportation Equipment (SOC 49-2093)

- **Job Description:** Install, adjust, or maintain mobile electronics communication equipment, including sound, sonar, security, navigation, and surveillance systems on trains, watercraft, or other mobile equipment.
- **Knowledge:** Engineering and Technology, Computers and Electronics, Mathematics, Public Safety and Security, Mechanical
- **Skills:** Critical Thinking, Active Listening, Operations Monitoring, Quality Control Analysis, Complex Problem Solving

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

- **Job Description:** Install, diagnose, or repair communications, sound, security, or navigation equipment in motor vehicles.
- **Knowledge:** Mechanical, Computers and Electronics, Customer and Personal Service, Mathematics, English Language
- **Skills:** Repairing, Troubleshooting, Critical Thinking, Operations Monitoring, Active Listening

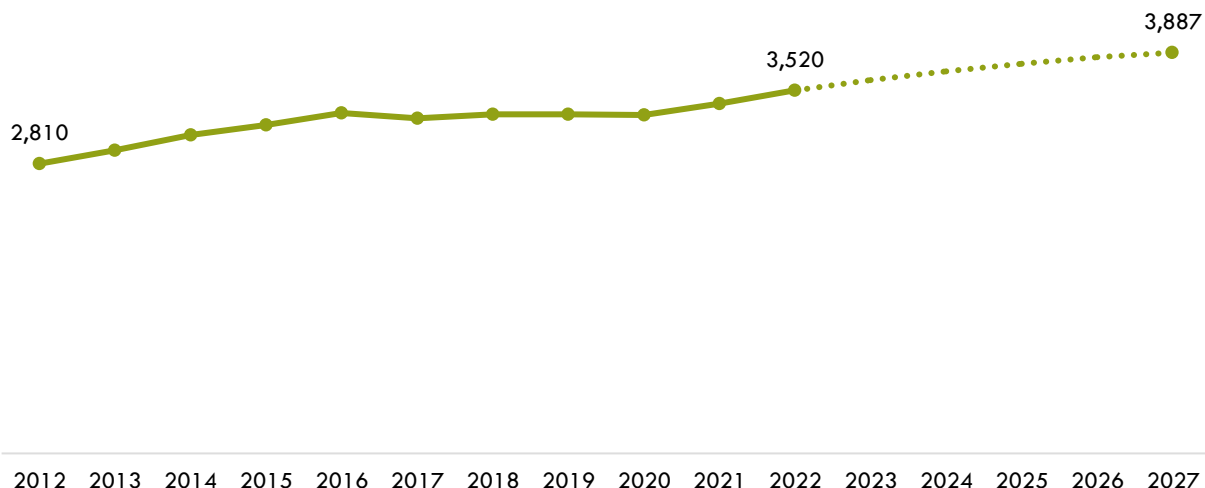
Automotive Service Technicians and Mechanics (SOC 49-3023)

- **Job Description:** Diagnose, adjust, repair, or overhaul automotive vehicles.
- **Knowledge:** Mechanical, Computers and Electronics, Customer and Personal Service, Engineering and Technology
- **Skills:** Repairing, Troubleshooting, Critical Thinking, Operations Monitoring, Equipment Maintenance

Employment

Exhibit 1a shows trends for *Drive Train Technicians* in the NCV/NML subregion. Between 2022 to 2027, the number of jobs for occupations related to *Drive Train Technicians* is projected to increase by 367, a growth rate of 10%.

Exhibit 1a. Historical employment and projected occupational demand for occupations related to *Drive Train Technicians* in the NCV/NML subregion, 2012-2027



Occupations related to *Drive Train Technicians* in the NCV/NML subregion employed 3,520 workers in 2022 (Exhibit 1b). Automotive service technicians and mechanics are projected to have 377 annual openings.

Exhibit 1b. Current employment and projected occupational demand for occupations related to *Drive Train Technicians* in the NCV/NML subregion, 2022-2027

Occupation	2022 Jobs	2027 Jobs	5-Year Change	5-Year % Change	Annual Openings
Automotive Service Technicians and Mechanics	3,439	3,804	365	11%	377
Electrical and Electronics Installers and Repairers, Transportation Equipment	36	39	3	10%	4
Electronic Equipment Installers and Repairers, Motor Vehicles	46	44	(2)	(4%)	4
TOTAL	3,520	3,887	367	10%	385

Wages

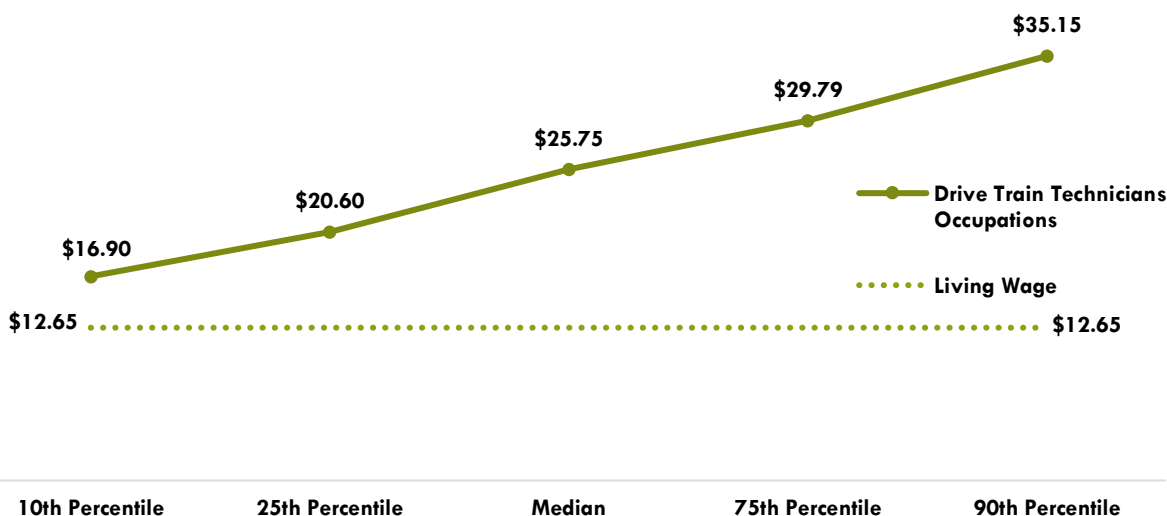
The average living wage for a single adult in the NCV/NML subregion is \$12.65/hour.² Exhibit 2a shows the highest entry-level hourly wages for electrical and electronics installers and repairers, transportation equipment, a *Drive Train Technicians Occupation*, which has an entry-level wage of \$30.61/hour.³

Exhibit 2a. Hourly wages for occupations related to *Drive Train Technicians* in the NCV/NML subregion

Occupation	25 th Percentile Hourly Earnings	Median Hourly Earnings	75 th Percentile Hourly Earnings
Electrical and Electronics Installers and Repairers, Transportation Equipment	\$30.61	\$39.04	\$44.72
Automotive Service Technicians and Mechanics	\$16.45	\$23.47	\$29.88
Electronic Equipment Installers and Repairers, Motor Vehicles	\$14.73	\$14.75	\$14.76

Exhibit 2b shows the average hourly wages for *Drive Train Technician* occupations; the average entry-level wage is more than the living wage for the NCV/NML subregion.

Exhibit 2b. Average hourly wages for occupations related to *Drive Train Technicians* in the NCV/NML subregion



Job Postings

² The term “living wage” in Center of Excellence reports is calculated by averaging the self-sufficiency wages from the Insight Center’s California Family Needs Calculator for each county in the subregion: <https://insightccd.org/tools-metrics/self-sufficiency-standard-tool-for-california/>.

³ Note: 10th and 25th percentiles are considered entry-level wages while 75th and 90th are considered experienced wages, which may be obtained through long-term employment or extra training, etc.

There were 368 unique job postings for occupations related to *Drive Train Technicians* in the NCV/NML subregion from May 2023 to October 2023.⁴

Top Employers

The top employers with the most job postings are listed in Exhibit 3. The top employers in online job postings were Les Schwab Tire Center, Pep Boys, and Jiffy Lube.

Exhibit 3. Top employers of *Drive Train Technicians* in job postings

Employer
Les Schwab Tire Center
Pep Boys
Jiffy Lube
Sunrun
JB Hunt
Honda
Ford
Goodyear
Dodge Ridge Ski Resort
Toyota Motors

Top Job Titles

Exhibit 4 shows the most common job titles for *Drive Train Technicians* in the NCV/NML subregion.

Exhibit 4. Top job titles in job postings for *Drive Train Technicians*

Job Title
Lube Technicians
Service Technicians
Automotive Technicians

⁴ Other than occupational titles and job titles, the categories below can be counted one or multiple times per job posting, and across several areas in a single posting. For example, a skill can be counted in two different skill types, and an employer can indicate more than one education level.

Salaries

Exhibit 5 shows the “Market Salaries” for *Drive Train Technicians*. These are calculated by Lightcast using a machine learning model built from millions of job postings every year. This accounts for adjustments based on location, industry, skills, experience, education, among other variables.

Exhibit 5. Market salaries for *Drive Train Technicians*

Market Salary	Job Postings
\$40,000-\$44,999	65
\$35,000-\$39,999	57
\$75,000-\$187,000	47
\$55,000-\$59,999	42
\$30,000-\$34,999	35

Education

Of the 368 unique job postings, 171 listed a preferred or minimum educational requirement for the position being filled. Among those, 89% requested high school or GED, 4% requested a bachelor’s degree, and 4% requested a master’s degree (Exhibit 6).

Exhibit 6. Education levels requested in job postings for *Drive Train Technicians*

Education Level	Job Postings	% of Job Postings
High school or GED	152	89%
Bachelor's degree	7	4%
Master's degree	6	4%
Associate degree	4	2%
Ph.D. or professional degree	2	1%

Baseline, Specialized, and Software Skills

Exhibit 7 depicts the top baseline, specialized, and software skills in job postings. The most commonly requested baseline skill is customer service. The most commonly requested specialized skill is automotive service. The most commonly requested software skill is Microsoft Office.

Exhibit 7. In-demand baseline, specialized, and software skills for *Drive Train Technicians* in job postings

Baseline Skills	Specialized Skills	Software Skills
Customer Service	Automotive Services	Microsoft Office
Communication	Brakes	Microsoft Excel
Troubleshooting (Problem Solving)	Mechanics	Linux
Management	Oil and Gas	Inventory Control Systems
Good Driving Record	Hand Tools	Spreadsheets

Certifications

Of the 368 job postings, there were six certifications listed. Among those, 25% indicated a need for a Automotive Service Excellence (ASE) Certification. The next top certification is a Commercial Driver's License (CDL) (Exhibit 8).

Exhibit 8. Top Drive Train Technicians certifications requested in job postings

Certifications	% of Job Postings
Automotive Service Excellence (ASE) Certification	25%
Commercial Driver's License (CDL)	13%
DOT Certification	8%
30-Hour OSHA General Industry Card	5%
10-Hour OSHA General Industry Card	5%

Education, Work Experience, & Training

A high school diploma or equivalent is typically required for electronic equipment installers and repairers, motor vehicles. A postsecondary nondegree award is typically required for automotive service technicians and mechanics and electrical and electronics installers and repairers, transportation equipment. (Exhibit 9).

Exhibit 9. Education, work experience, training, and Current Population Survey results for occupations related to Drive Train Technicians⁵

Occupation	Typical Entry-level Education	Work Experience Required	Typical On-The-Job Training	CPS
Automotive Service Technicians and Mechanics	Postsecondary nondegree award	None	Short-term	35.7%
Electrical and Electronics Installers and Repairers, Transportation Equipment	Postsecondary nondegree award	None	Long-term	44.4%
Electronic Equipment Installers and Repairers, Motor Vehicles	High school diploma or equivalent	None	Moderate-term	44.4%

⁵ "Labor Force Statistics from the Current Population Survey," Bureau of Labor Statistics, <https://www.bls.gov/cps/>.

Supply

An analysis of program data from the Integrated Postsecondary Education Data System (IPEDS) for the last three program years shows that, on average, 125 awards were conferred in the NCV/NML subregion (Exhibits 10 and 11).

Exhibit 10. TOP and CIP codes for *Drive Train Technicians*

TOP Titles	CIP Titles
0948.00 - Automotive Technology	47.0604 - Automobile/Automotive Mechanics Technology/Technician

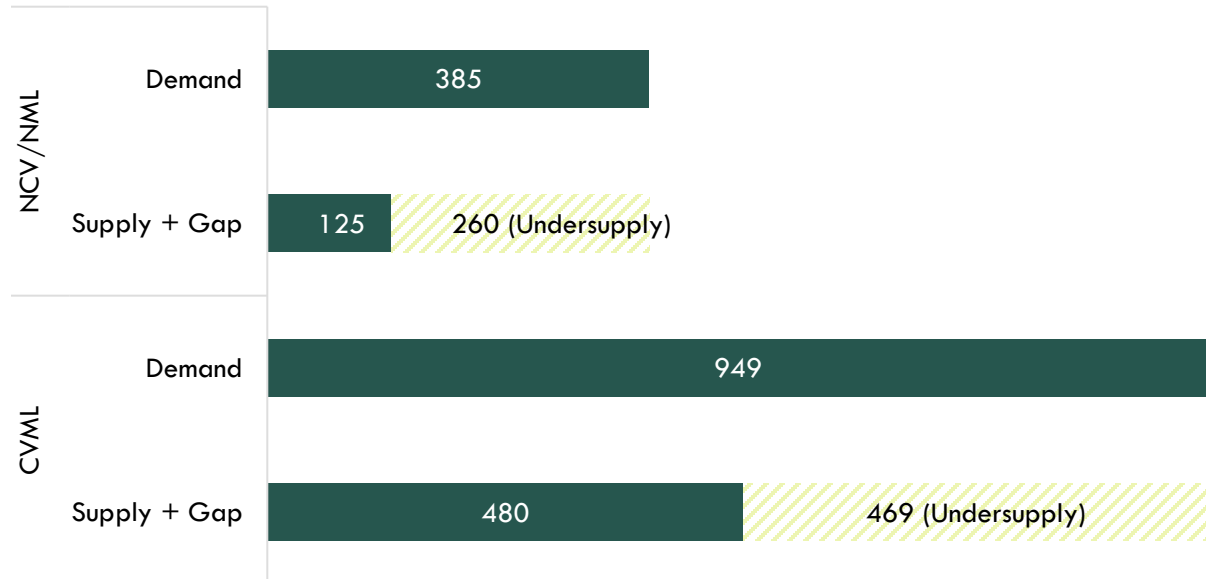
Exhibit 11. Postsecondary supply for *Drive Train Technicians* for Program Years 2019-20 through 2021-22

TOP/CIP Code- Title	College	Associate Degree	Certificate 60+ Semester Units	Noncredit Award 960+ Hours	Certificate 30 < 60 Semester Units	Certificate 16 < 30 Semester Units	Certificate 8 < 16 Semester Units	Certificate 6 < 18 Semester Units	Certificates of at Least 1 but Less Than 2 years	TOTAL
0948.00 - Automotive Technology	Bakersfield	17			18	54				89
	Columbia	2			2		4	3		11
	Fresno City	12	1	7						20
	Merced	6			33	22				61
	Modesto	9			2	9	2			22
	Reedley College	9			27					36
	San Joaquin Delta	8			9	14				31
	Sequoias	10							67	77
47.0604 - Automobile/Automotive Mechanics Technology/Technician	UEI College-Bakersfield								133	133
NCV/NML TOTAL		25	0	0	46	45	6	3	0	125
CVML TOTAL		73	1	7	91	99	6	70	133	480

*NCV/NML awards

There is an undersupply of 260 *Drive Train Technicians* in the NCV/NML subregion and an undersupply of 469 in the region (Exhibit 12).

Exhibit 12. *Drive Train Technicians* workforce demand (annual job openings), postsecondary awards (supply), and additional students needed to fill gap in the NCV/NML subregion and region



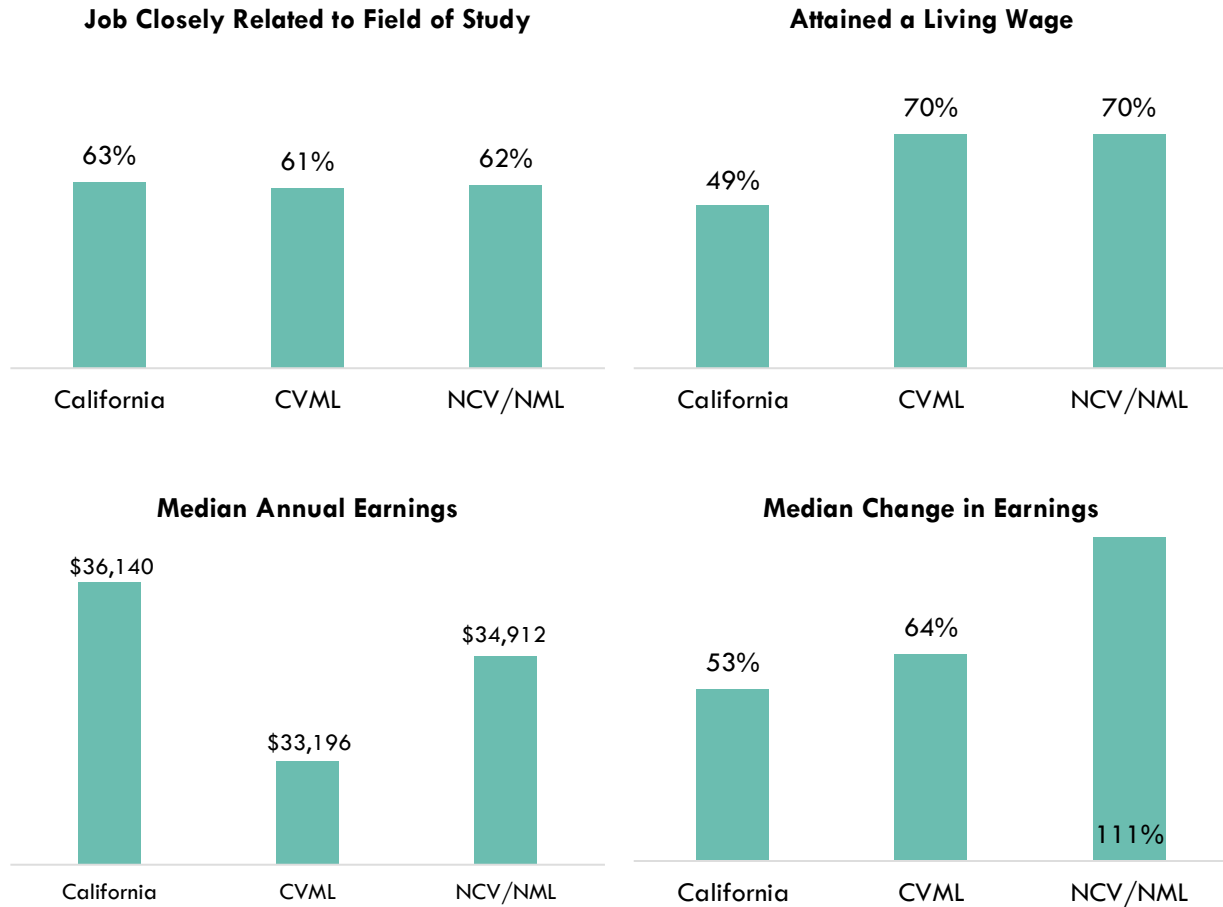
Student Outcomes

Exhibits 13a- 13b summarize outcomes from California Community College Chancellor’s LaunchBoard for TOP codes related to *Drive Train Technicians*. Notably, 62% of students obtained a job closely related to their field of study, and 70% of students attained a living wage in the subregion.

Exhibit 13a. LaunchBoard Metrics for TOP 0948.00 - Automotive Technology in the subregion

Metric	
Students Who Got a Degree or Certificate or Attained Apprenticeship Journey Status	54

Exhibit 13. LaunchBoard Metrics for TOP 0948.00 - Automotive Technology in California, CVML region, and NCV/NML subregion



Recommendation

This report suggests there is a shortage of 260 workers in the NCV/NML subregion and a shortage of 469 workers in the CVML region for *Drive Train Technicians*. Based on these findings, it is recommended that Columbia College work with the regional directors, the college's advisory board, and local industry in the expansion of programs to address the shortage of *Drive Train Technicians* in the region.

Appendix: Methodology & Data Sources

Data Sources

Labor market and educational supply data compiled in this report derive from a variety of sources. Data were drawn from external sources, including the Economic Modeling Specialists, Inc., the California Community Colleges Chancellor's Office Management Information Systems Data Mart and the National Center for Educational Statistics (NCES) Integrated Postsecondary Education Data System (IPEDS). Below is the summary of the data sources found in this study.

Data Type	Source
Labor Market Information/Population Estimates and Projections/Educational Attainment	Economic Modeling Specialists, Intl. (Lightcast). Lightcast occupational employment data are based on final Lightcast industry data and final Lightcast staffing patterns. Wage estimates are based on Occupational Employment Statistics (QCEW and Non-QCEW Employees classes of worker) and the American Community Survey (Self-Employed and Extended Proprietors). Occupational wage estimates also affected by county-level Lightcast earnings by industry: economicmodeling.com .
Typical Education Level and On-the-job Training	Bureau of Labor Statistics (BLS) uses a system to assign categories for entry-level education and typical on-the-job training to each occupation for which BLS publishes projections data: https://www.bls.gov/emp/tables/educational-attainment.htm .
LaunchBoard	Chancellor's LaunchBoard. https://www.calpassplus.org/LaunchBoard/SWP.aspx
Labor Force, Employment and Unemployment Estimates	California Employment Development Department, Labor Market Information Division: labormarketinfo.edd.ca.gov .
Job Posting and Skills Data	Lightcast: https://lightcast.io/ .
Additional Education Requirements/ Employer Preferences	The O*NET Job Zone database includes over 900 as well as information on skills, abilities, knowledge, work activities and interests associated with specific occupations: onetonline.org .

Key Terms and Concepts

Annual Job Openings: Annual openings are calculated by dividing the number of years in the projection period by total job openings.

Education Attainment Level: The highest education attainment level of workers age 25 years or older.

Employment Estimate: The total number of workers currently employed.

Employment Projections: Projections of employment are calculated by a proprietary Economic Modeling Specialists, Intl. (LIGHTCAST) formula that includes historical employment and economic indicators along with national, state and local trends.

LaunchBoard (Attained the Living Wage): Among SWP students who exited college and did not transfer to any postsecondary institution, the proportion who attained the district county living wage for a single adult measured immediately following academic year of exit

LaunchBoard (Median Annual Earnings): Among SWP students who exited the community college system and who did not transfer to any postsecondary institution, median earnings following the academic year of exit.

LaunchBoard (Median Change in Earnings): Among SWP students who exited and who did not transfer to any postsecondary institution, median change in earnings between the second quarter prior to the beginning of the academic year of entry and the second quarter after the end of the academic year of exit from the last college attended.

LaunchBoard (Job Closely Related to Field of Study): Among SWP students who responded to the CTE Outcomes Survey and did not transfer to any postsecondary institution, the proportion who reported that they are working in a job very closely or closely related to their field of study.

Living Wage: The cost of living in a specific community or region for one adult and no children. The cost increases with the addition of children.

Occupation: An occupation is a grouping of job titles that have a similar set of activities or tasks that employees perform.

Percent Change: Rate of growth or decline in the occupation for the projected period; this does not factor in replacement openings.

Replacements: Estimate of job openings resulting from workers retiring or otherwise permanently leaving an occupation. Workers entering an occupation often need training. These replacement needs, added to job openings due to growth, may be used to assess the minimum number of workers who will need to be trained for an occupation.

Total Job Openings (New + Replacements): Sum of projected growth (new jobs) and replacement needs. When an occupation is expected to lose jobs, or retain the current employment level, number of openings will equal replacements.

Typical Education Requirement: represents the typical education level most workers need to enter an occupation.

Typical On-The-Job Training: indicates the typical on-the-job training needed to attain competency in the skills needed in the occupation.