

June 2022

Environmental Scan

West Hills College Lemoore



Prepared by the Central Valley/Mother Lode Center of Excellence



California
Community
Colleges



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CENTERS OF EXCELLENCE
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COVID-19 Statement: This report includes employment projection data by EMSI. EMSI’s projections are modeled on recorded (historical) employment figures and incorporate several underlying assumptions, including the assumption that the economy during the projection period will be at approximately full employment or potential output. To the extent that a recession or labor shock, such as the economic effects of COVID-19, can cause long-term structural change, they may impact the projections. At this time, it is not possible to quantify the impact of COVID-19 on projections of industry and occupational employment. Other measures such as unemployment rates and monthly industry employment estimates will reflect the most recent information on employment and jobs in the state and, in combination with input from local employers, may help validate current and future employment needs as depicted here.

If for any reason this document is not accessible or if you have specific needs for readability, please contact us and we will do our utmost to accommodate you with a modified version. To make a request, contact Nora Seronello by phone at (209) 575-6894 or by email seronellon@mjc.edu.

Introduction

This report prepared by the Central Valley/Mother Lode Center of Excellence examines labor market demand and postsecondary supply in Fresno, Kings, and Tulare Counties.

The report focuses on occupations in the (10) sectors that align with career education (CE) programs designated by the California Community Colleges Chancellor's Office (CCCCO).¹

Within each sector, this analysis focuses on middle-skill occupations, those occupations that require more education and training than a high school diploma, but less than a bachelor's degree at the state-level. For each occupation, data is presented on current employment, projected demand, entry-level wages, and educational attainment.

The average living wage for a single adult in Fresno, Kings, and Tulare is \$11.53/hour.² Top specialized skills were determined by analyzing job postings for all occupations in a related sector using Burning Glass. Postsecondary supply is presented for average annual awards (degrees and certificates) by program.

Please note: The analysis in this report only includes occupations with 25 or more annual openings. In the wage charts for each sector, entry-level wages represent 25th percentile wages. In addition, Current Population Survey (CPS) results are provided in the educational attainment tables. An occupation in which at least 30% of its workforce or higher possesses less than a bachelor's degree is considered a middle-skill occupation that is relevant to community college education.

More information on the report's methodology can be found in Appendix A.

CCCCO Sectors

- Advanced Manufacturing
- Advanced Transportation & Logistics
- Agriculture, Water & Environmental Technologies
- Business & Entrepreneurship
- Education
- Energy, Construction & Utilities
- Health
- ICT/Digital Media
- Public Safety
- Retail, Hospitality & Tourism

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/>.

Summary of Findings

The Central Valley/Mother Lode Center of Excellence was asked by West Hills Community College District to provide labor market information for the (10) CCCCCO sectors that are critical to the economic vitality of Fresno and Kings Counties.

In the following report sections, occupational wages, educational attainment, and postsecondary supply are shown for each CCCCCO sector. Analysis by the Center of Excellence examined whether postsecondary institutions are supplying enough students to meet workforce demand. This analysis identified sectors with substantial projected growth and job openings and compared those sectors with postsecondary programs preparing students to enter occupations within those sectors.

Key finding:

In Fresno and Kings Counties, the 10 sectors are expected to offer 39,521 middle-skill job openings annually. Postsecondary institutions in the service area currently supply 12,198 awards (degrees and certificates) to students entering related fields on average each year. When postsecondary supply and projected annual openings are compared, an undersupply of 27,322 workers appears to exist in the district service area (Exhibit 1).

Sectors with the most jobs in 2021 are health, business and entrepreneurship, and energy, construction & utilities. These sectors also are projected to offer the greatest number of annual job openings. The smallest sectors in terms of 2021 employment are public safety, advanced manufacturing, and retail, hospitality, and tourism. These sectors also are projected to offer the smallest number of annual job openings.

Exhibit 1. Comparison of workforce demand and postsecondary supply for the 10 industry sectors

SECTOR	DEMAND (ANNUAL OPENINGS)	SUPPLY (AVERAGE ANNUAL AWARDS)	GAP
Health	10,213	4,945	5,267
Business & Entrepreneurship	7,021	1,502	5,518
Energy, Construction & Utilities	3,725	656	3,068
Education	3,456	1,219	2,238
Agriculture, Water & Environmental Technologies	3,378	612	2,766
Advanced Transportation & Logistics	3,284	711	2,573
Retail, Hospitality & Tourism	3,131	813	2,318
ICT/Digital Media	2,675	477	2,198
Advanced Manufacturing	1,710	680	1,031
Public Safety	928	583	345
TOTAL	39,521	12,198	27,322

In addition to addressing the sectors with the largest undersupply of workers, planning efforts by the district could also consider occupations with strong workforce demand.

Occupations that have the most annual job openings and that are generally well paid in Fresno, Kings, and Tulare Counties are:

- **Heavy and Tractor-Trailer Truck Drivers, 1,629 job openings**
- **Office Clerks, General, 1,474 job opening**
- **Customer Service Representatives, 898 job openings,**
- **Registered Nurses, 835 job openings**
- **Secretaries and Administrative Assistants, Except Legal, Medical, and Executive, 748 job openings**
- **Bookkeeping, Accounting, and Auditing Clerks, 720 job openings**
- **Maintenance and Repair Workers, General, 664 job openings**
- **General and Operations Managers, 643 job openings**

Despite home health and personal care aides is projected to offer 5,757 annual job openings, this occupation pays a fairly low entry-level wage, only \$13.02 per hour. In addition, 1,162 annual job openings are projected for farmers, ranchers, and other agricultural managers, but this occupation pays an entry-level wage of \$12.03.

Occupations that pose a concern for training are those projected to contract over the next five years. These occupations will continue to offer annual openings, due to replacement jobs, but may be areas warranting attention since contraction may affect the future hiring of students.

These occupations include:

- **Tellers**, a loss of 235 positions, a 21% decline
- **Childcare Workers**, a loss of 218 positions, a 4% decline
- **Executive Secretaries and Executive Administrative Assistants**, a loss of 72 positions, a 7% decline

It is also important to keep in mind occupations that offer solid wages in conjunction with moderate to strong workforce demand. Sectors with these types of jobs include ICT/digital media; education, and business & entrepreneurship.

Within health care, occupations that have a promising outlook and that can lead to improved quality of life for students include dental hygienists, registered nurses, radiologic technologists and technicians, and physical therapist assistants. Within advanced transportation & logistics, occupations include airline pilots, copilots, and flight engineers. Within business and entrepreneurship, general and operations managers and sales representatives, wholesale and manufacturing, technical and scientific products are occupations that pay relatively high entry-level wages and have significant annual openings. Within the energy, construction, and utilities sector, occupations include administrative services and facilities managers and telecommunications line installers and repairers.

ADVANCED MANUFACTURING

Exhibit 2. Advanced manufacturing employment and occupational projections

OCCUPATION	2021 JOBS	2026 JOBS	5-YEAR CHANGE	5-YEAR % CHANGE	ANNUAL OPENINGS
Packaging and Filling Machine Operators and Tenders	3,664	3,604	(60)	(2%)	394
First-Line Supervisors of Production and Operating Workers	2,245	2,326	81	4%	239
Inspectors, Testers, Sorters, Samplers, and Weighers	1,857	1,823	(34)	(2%)	219
Welders, Cutters, Solderers, and Brazers	1,720	1,795	75	4%	199
Industrial Machinery Mechanics	1,522	1,699	177	12%	171
Machinists	903	957	54	6%	105
Weighers, Measurers, Checkers, and Samplers, Recordkeeping	508	530	22	4%	53
Mixing and Blending Machine Setters, Operators, and Tenders	420	441	22	5%	51
Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	405	447	42	10%	51
Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders	390	408	18	5%	44
Industrial Production Managers	546	568	22	4%	42
Cutting and Slicing Machine Setters, Operators, and Tenders	282	280	(2)	(1%)	34
Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	284	292	8	3%	31
Crushing, Grinding, and Polishing Machine Setters, Operators, and Tenders	231	235	4	2%	26
Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders	226	232	6	3%	25
Stationary Engineers and Boiler Operators	189	196	7	4%	25

Exhibit 3. Advanced manufacturing wages

OCCUPATION	25TH PERCENTILE HOURLY WAGES	MEDIAN HOURLY
Industrial Production Managers	\$36.51	\$43.05
Stationary Engineers and Boiler Operators	\$27.47	\$36.77
First-Line Supervisors of Production and Operating Workers	\$22.08	\$29.86
Industrial Machinery Mechanics	\$19.81	\$26.61
Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders	\$17.63	\$24.16
Crushing, Grinding, and Polishing Machine Setters, Operators, and Tenders	\$17.20	\$19.28
Welders, Cutters, Solderers, and Brazers	\$16.28	\$18.96
Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders	\$16.25	\$20.47
Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	\$15.38	\$19.13
Mixing and Blending Machine Setters, Operators, and Tenders	\$15.10	\$17.31
Machinists	\$14.94	\$18.41
Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	\$14.65	\$17.35
Cutting and Slicing Machine Setters, Operators, and Tenders	\$14.26	\$17.06
Inspectors, Testers, Sorters, Samplers, and Weighers	\$13.51	\$17.64
Weighers, Measurers, Checkers, and Samplers, Recordkeeping	\$13.41	\$15.10
Packaging and Filling Machine Operators and Tenders	\$13.39	\$15.16

Exhibit 4. Advanced manufacturing educational attainment

OCCUPATION	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training	CPS
Packaging and Filling Machine Operators and Tenders	High school diploma or equivalent	None	Moderate-term	21.1%
First-Line Supervisors of Production and Operating Workers	High school diploma or equivalent	Less than 5 years	None	35.2%
Inspectors, Testers, Sorters, Samplers, and Weighers	High school diploma or equivalent	None	Moderate-term	38.0%
Welders, Cutters, Solderers, and Brazers	High school diploma or equivalent	None	Moderate-term	32.2%
Industrial Machinery Mechanics	High school diploma or equivalent	None	Long-term	40.9%
Machinists	High school diploma or equivalent	None	Long-term	41.2%
Weighers, Measurers, Checkers, and Samplers, Recordkeeping	High school diploma or equivalent	None	Short-term	35.9%
Mixing and Blending Machine Setters, Operators, and Tenders	High school diploma or equivalent	None	Moderate-term	28.5%
Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	High school diploma or equivalent	None	Moderate-term	28.6%
Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders	High school diploma or equivalent	None	Moderate-term	34.5%
Industrial Production Managers	Bachelor's degree	5 years or more	None	29.2%
Cutting and Slicing Machine Setters, Operators, and Tenders	High school diploma or equivalent	None	Moderate-term	20.9%
Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	High school diploma or equivalent	None	Moderate-term	27.8%
Crushing, Grinding, and Polishing Machine Setters, Operators, and Tenders	High school diploma or equivalent	None	Moderate-term	28.5%
Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders	High school diploma or equivalent	None	Moderate-term	26.2%
Stationary Engineers and Boiler Operators	High school diploma or equivalent	None	Long-term	38.2%

Exhibit 5. Top specialized skills in job postings for advanced manufacturing (n = 1,381)

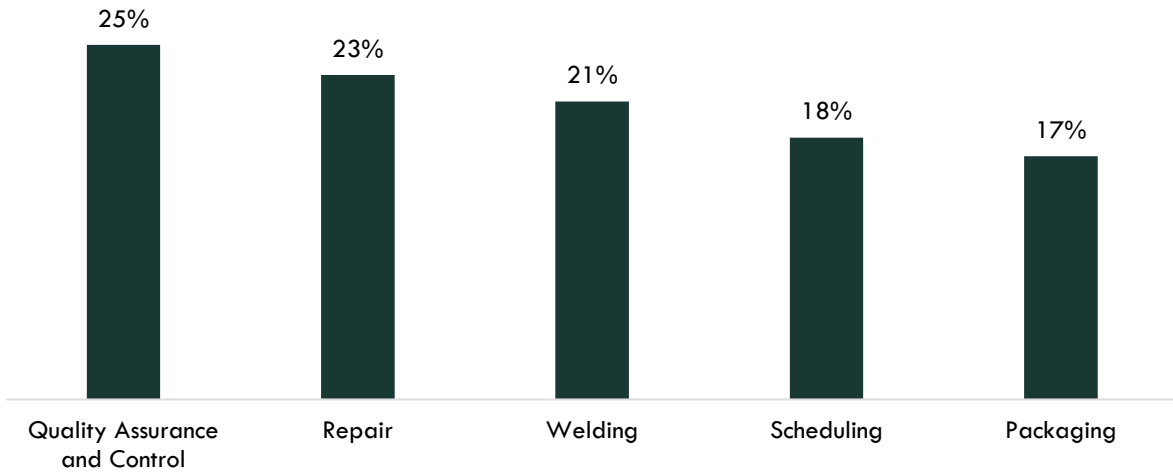
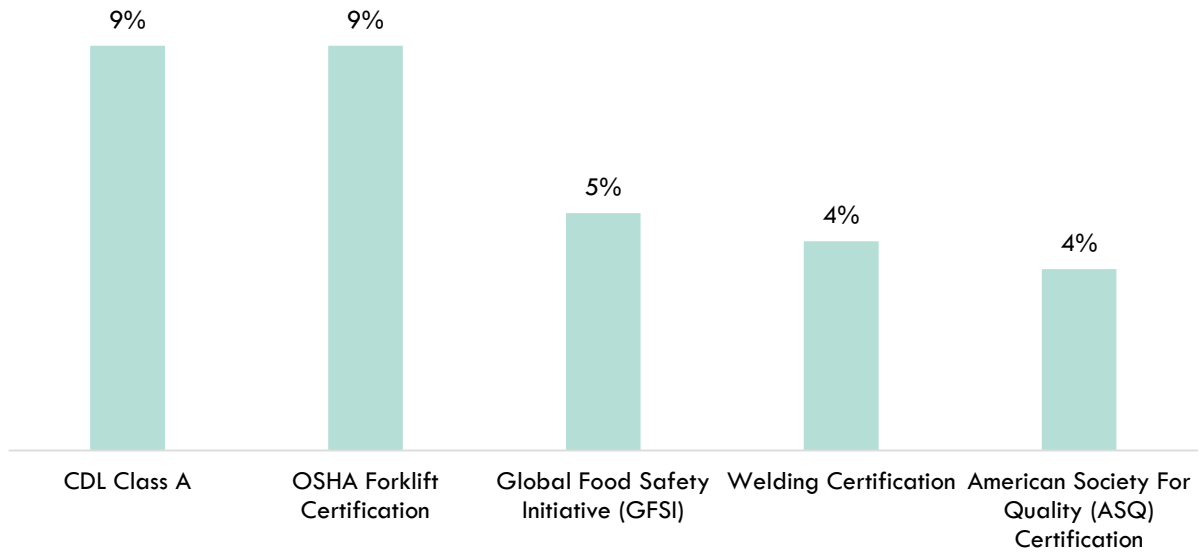
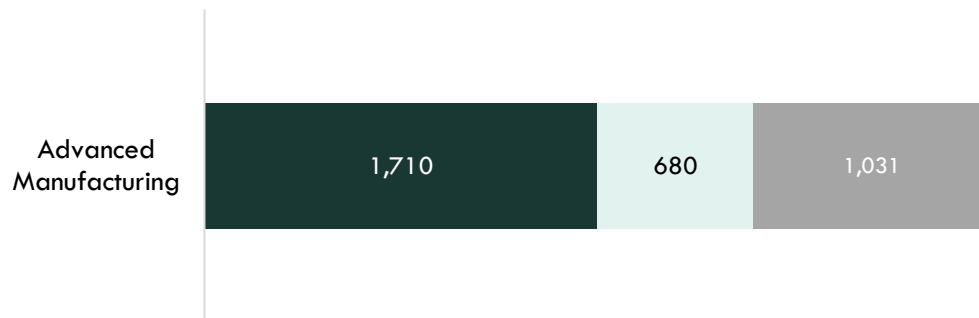


Exhibit 6. Top certifications in job postings for advanced manufacturing (n = 340)



TOP/ CIP Code- Title	College	Associate Degree	Award < 1 Academic Year	Award 1 < 2 Academic Years	Certificate 12 < 18 Semester Units	Certificate 16 < 30 Semester Units	Certificate 18 < 30 Semester Units	Certificate 30 < 60 Semester Units	Certificate 6 < 18 Semester Units	Credit Award, < 6 Semester Units	Noncredit Award 192 < 288 Hours	Noncredit Award 480 < 960 Hours	Subtotal
Maintenance Technology													
48.0508 - Welding	Advanced Career Institute		89										89
Technology/Welder	Institute of Technology			3									3
TOTAL		62	89	144	27	81	85	92	29	17	31	22	680

Exhibit 8. Advanced manufacturing annual demand and supply



ADVANCED TRANSPORTATION & LOGISTICS

Exhibit 9. Advanced transportation & logistics employment and occupational projections

OCCUPATION	2021 JOBS	2026 JOBS	5-YEAR CHANGE	5-YEAR % CHANGE	ANNUAL OPENINGS
Heavy and Tractor-Trailer Truck Drivers	11,572	13,027	1,455	13%	1,629
Automotive Service Technicians and Mechanics	3,287	3,366	78	2%	344
Shipping, Receiving, and Inventory Clerks	2,938	2,946	9	0%	288
First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	1,990	2,200	210	11%	264
First-Line Supervisors of Mechanics, Installers, and Repairers	1,751	1,874	123	7%	184
Bus and Truck Mechanics and Diesel Engine Specialists	1,355	1,475	120	9%	152
Aircraft Mechanics and Service Technicians	751	846	95	13%	84
Automotive Body and Related Repairers	587	645	58	10%	68
Logisticians	557	639	82	15%	67
Bus Drivers, Transit and Intercity	393	463	70	18%	63
Transportation, Storage, and Distribution Managers	629	676	47	7%	58
Airline Pilots, Copilots, and Flight Engineers	235	255	19	8%	30
Cargo and Freight Agents	214	246	32	15%	29
Commercial Pilots	183	203	19	11%	24

Exhibit 10. Advanced transportation & logistics wages

OCCUPATION	25TH PERCENTILE HOURLY WAGES	MEDIAN HOURLY
Airline Pilots, Copilots, and Flight Engineers	\$62.89	\$106.68
Commercial Pilots	\$33.59	\$51.49
Transportation, Storage, and Distribution Managers	\$32.34	\$42.27
Aircraft Mechanics and Service Technicians	\$29.26	\$33.29
Logisticians	\$28.57	\$36.16
First-Line Supervisors of Mechanics, Installers, and Repairers	\$26.59	\$33.99
Bus Drivers, Transit and Intercity	\$21.47	\$25.70
First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	\$19.93	\$26.79
Bus and Truck Mechanics and Diesel Engine Specialists	\$17.87	\$23.30
Heavy and Tractor-Trailer Truck Drivers	\$16.09	\$20.60
Cargo and Freight Agents	\$15.57	\$22.47
Shipping, Receiving, and Inventory Clerks	\$14.23	\$15.84
Automotive Body and Related Repairers	\$14.15	\$19.14
Automotive Service Technicians and Mechanics	\$14.04	\$18.80

Exhibit 11. Advanced transportation & logistics educational attainment

OCCUPATION	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training	CPS
Heavy and Tractor-Trailer Truck Drivers	Postsecondary nondegree award	None	Short-term	29.8%
Automotive Service Technicians and Mechanics	Postsecondary nondegree award	None	Short-term	35.7%
Shipping, Receiving, and Inventory Clerks	High school diploma or equivalent	None	Short-term	33.8%
First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	High school diploma or equivalent	Less than 5 years	None	39.4%
First-Line Supervisors of Mechanics, Installers, and Repairers	High school diploma or equivalent	Less than 5 years	None	41.7%
Bus and Truck Mechanics and Diesel Engine Specialists	High school diploma or equivalent	None	Long-term	36.4%
Aircraft Mechanics and Service Technicians	Postsecondary nondegree award	None	None	58.4%
Automotive Body and Related Repairers	High school diploma or equivalent	None	Long-term	26.2%
Logisticians	Bachelor's degree	None	None	35.9%
Bus Drivers, Transit and Intercity	High school diploma or equivalent	None	Moderate-term	39.5%
Transportation, Storage, and Distribution Managers	High school diploma or equivalent	5 years or more	None	34.7%
Airline Pilots, Copilots, and Flight Engineers	Bachelor's degree	Less than 5 years	Moderate-term	22.0%
Cargo and Freight Agents	High school diploma or equivalent	None	Short-term	40.7%
Commercial Pilots	High school diploma or equivalent	None	Moderate-term	22.0%
Heavy and Tractor-Trailer Truck Drivers	Postsecondary nondegree award	None	Short-term	29.8%
Automotive Service Technicians and Mechanics	Postsecondary nondegree award	None	Short-term	35.7%

Exhibit 12. Top specialized skills in job postings for advanced transportation & logistics (n = 2,154)

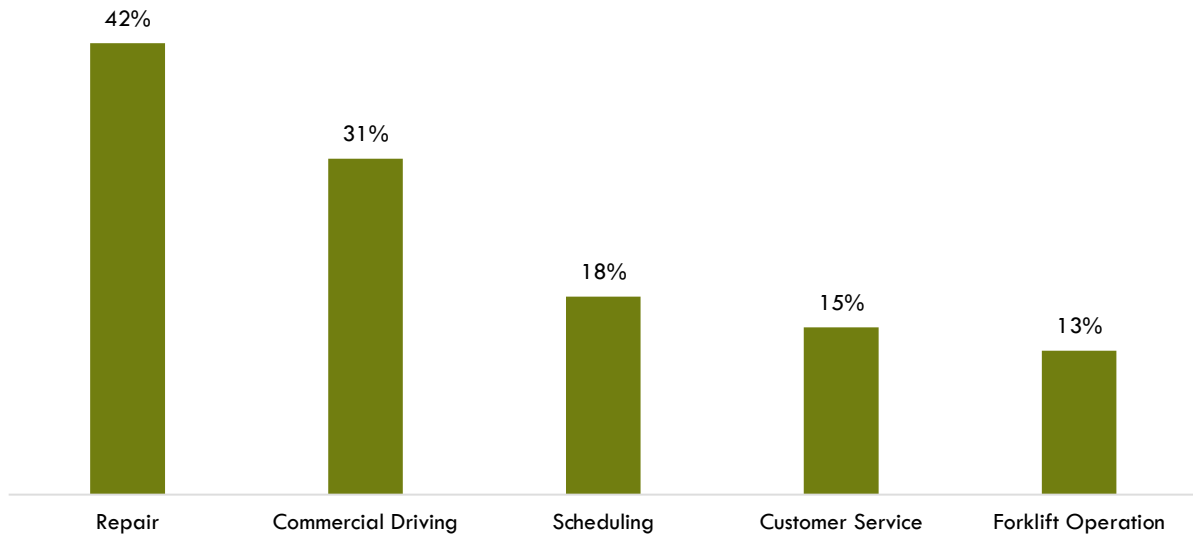


Exhibit 13. Top certifications in job postings for advanced transportation & logistics (n = 2,650)

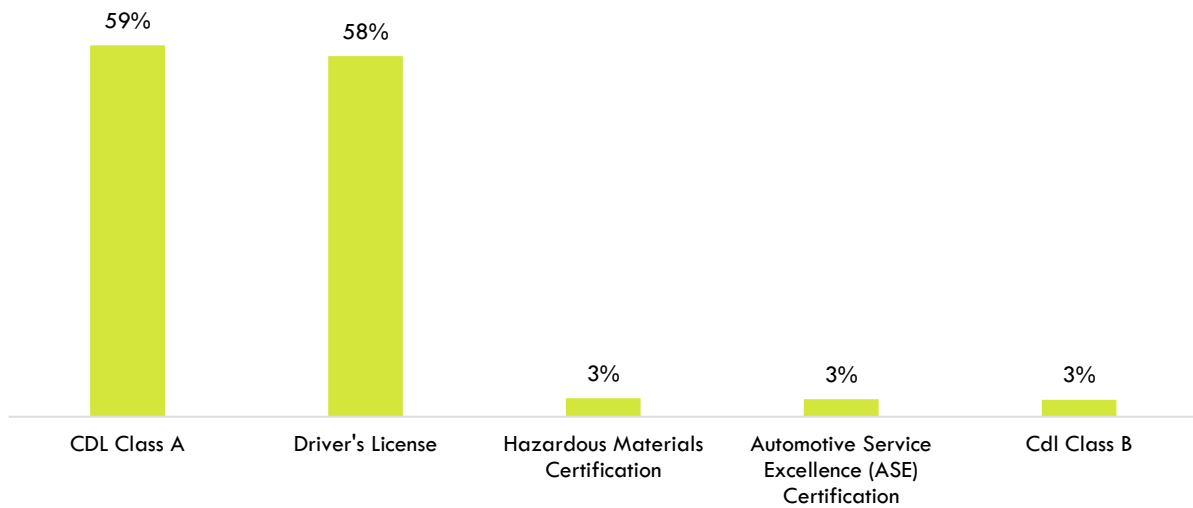


Exhibit 14. Advanced transportation & logistics postsecondary supply

TOP / CIP Code- Title	College	Associate Degree	Award < 1 Academic Year	Award 1 < 2 Academic Years	Award 2 < 4 Academic Years	Certificate 12 < 18 Semester Units	Certificate 16 < 30 Semester Units	Certificate 30 < 60 Semester Units	Certificate 6 < 18 Semester Units	Certificate 60+ Semester Units	Certificate 8 < 16 Semester Units	Noncredit Award 192 < 288 Hours	Noncredit Award 480 < 960 Hours	Noncredit Award 960+ Hours	Subtotal
051000 - Logistics and Materials Transportation	Fresno City											17			17
094730 - Heavy Equipment Operation	West Hills Coalinga						4								4
094750 - Truck and Bus Driving	West Hills Coalinga						1								1
094800 - Automotive Technology	Fresno City	12								1				6	19
	Reedley College	9						43							51
	Sequoias	6						1	37						43
094900 - Automotive Collision Repair	Fresno City	2						6					12	20	
095000 - Aeronautical and Aviation Technology	Reedley College	5								10				15	
095340 - Mechanical Drafting	Sequoias	0				3					0			3	
15.0406 - Automation Engineer Technology/Technician	Institute of Technology	10													10
47.0607 - Airframe Mechanics and Aircraft Maintenance Technology/Technician	San Joaquin Valley College-Visalia	33		1	3										38
49.0205 - Truck and Bus Driver/Commercial Vehicle Operator and Instructor	Advanced Career Institute		489												489
TOTAL		77	489	1	3	3	5	50	37	11	0	17	12	6	711

Exhibit 15. Advanced transportation & logistics annual demand and supply



AGRICULTURE, WATER, AND ENVIRONMENTAL TECHNOLOGIES

Exhibit 16. Agriculture, water and environmental technologies employment and occupational projections

OCCUPATION	2021 JOBS	2026 JOBS	5-YEAR CHANGE	5-YEAR % CHANGE	ANNUAL OPENINGS
Farmers, Ranchers, and Other Agricultural Managers	11,858	11,810	(48)	(0%)	1,165
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	4,369	4,598	229	5%	482
Agricultural Equipment Operators	3,016	3,025	9	0%	481
First-Line Supervisors of Farming, Fishing, and Forestry Workers	2,128	2,070	(59)	(3%)	298
Buyers and Purchasing Agents	958	962	4	0%	94
Mobile Heavy Equipment Mechanics, Except Engines	849	889	40	5%	92
Cost Estimators	885	932	47	5%	90
Farm Equipment Mechanics and Service Technicians	798	820	22	3%	83
Compliance Officers	903	958	55	6%	82
Agricultural Inspectors	463	455	(8)	(2%)	74
Pest Control Workers	480	499	20	4%	68
Agricultural and Food Science Technicians	470	479	9	2%	64
Animal Trainers	378	382	4	1%	48
Forest and Conservation Technicians	332	348	16	5%	44
Veterinary Assistants and Laboratory Animal Caretakers	231	258	26	11%	44
Forest and Conservation Workers	263	269	6	2%	44
Biological Technicians	279	286	6	2%	38
Veterinary Technologists and Technicians	349	389	40	12%	34
Environmental Science and Protection Technicians, Including Health	197	208	11	6%	27
Pesticide Handlers, Sprayers, and Applicators, Vegetation	201	194	(6)	(3%)	26

Exhibit 17. Agriculture, water, and environmental technologies wages

OCCUPATION	25TH PERCENTILE HOURLY WAGES	MEDIAN HOURLY
Compliance Officers	\$27.23	\$34.64
Cost Estimators	\$25.85	\$37.27
Buyers and Purchasing Agents	\$22.43	\$28.51
Mobile Heavy Equipment Mechanics, Except Engines	\$22.22	\$28.41
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	\$21.85	\$30.76
Agricultural Inspectors	\$20.02	\$21.98
Environmental Science and Protection Technicians, Including Health	\$16.21	\$21.31
Farm Equipment Mechanics and Service Technicians	\$15.86	\$20.24
Forest and Conservation Technicians	\$15.01	\$17.88
Agricultural and Food Science Technicians	\$14.98	\$18.82
Biological Technicians	\$14.88	\$16.92
Pest Control Workers	\$14.48	\$16.81
Veterinary Technologists and Technicians	\$14.45	\$17.29
First-Line Supervisors of Farming, Fishing, and Forestry Workers	\$14.32	\$18.14
Pesticide Handlers, Sprayers, and Applicators, Vegetation	\$13.72	\$14.99
Veterinary Assistants and Laboratory Animal Caretakers	\$13.53	\$15.15
Forest and Conservation Workers	\$12.55	\$14.47
Agricultural Equipment Operators	\$12.32	\$14.00
Farmers, Ranchers, and Other Agricultural Managers	\$12.03	\$16.62
Animal Trainers	\$11.81	\$13.88

Exhibit 18. Agriculture, water, and environmental technologies educational attainment

OCCUPATION	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training	CPS
Farmers, Ranchers, and Other Agricultural Managers	High school diploma or equivalent	5 years or more	None	30.2%
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	High school diploma or equivalent	None	Moderate-term	32.1%
Agricultural Equipment Operators	No formal educational credential	None	Moderate-term	14.9%
First-Line Supervisors of Farming, Fishing, and Forestry Workers	High school diploma or equivalent	Less than 5 years	None	21.9%
Buyers and Purchasing Agents	Bachelor's degree	None	Moderate-term	33.6%
Mobile Heavy Equipment Mechanics, Except Engines	High school diploma or equivalent	None	Long-term	35.2%
Cost Estimators	Bachelor's degree	None	Moderate-term	37.4%
Farm Equipment Mechanics and Service Technicians	High school diploma or equivalent	None	Long-term	35.2%
Compliance Officers	Bachelor's degree	None	Moderate-term	25.5%
Agricultural Inspectors	Bachelor's degree	None	Moderate-term	41.1%
Pest Control Workers	High school diploma or equivalent	None	Moderate-term	35.9%
Agricultural and Food Science Technicians	Associate's degree	None	Moderate-term	40.5%
Animal Trainers	High school diploma or equivalent	None	Moderate-term	32.0%
Forest and Conservation Technicians	Associate's degree	None	None	37.1%
Veterinary Assistants and Laboratory Animal Caretakers	High school diploma or equivalent	None	Short-term	44.0%
Forest and Conservation Workers	High school diploma or equivalent	None	Moderate-term	24.4%
Biological Technicians	Bachelor's degree	None	None	29.4%
Veterinary Technologists and Technicians	Associate's degree	None	None	56.9%
Environmental Science and Protection Technicians, Including Health	Associate's degree	None	None	33.0%
Pesticide Handlers, Sprayers, and Applicators, Vegetation	High school diploma or equivalent	None	Moderate-term	32.8%

Exhibit 19. Top specialized skills in job postings for agriculture, water, and environmental technologies (n = 2,665)

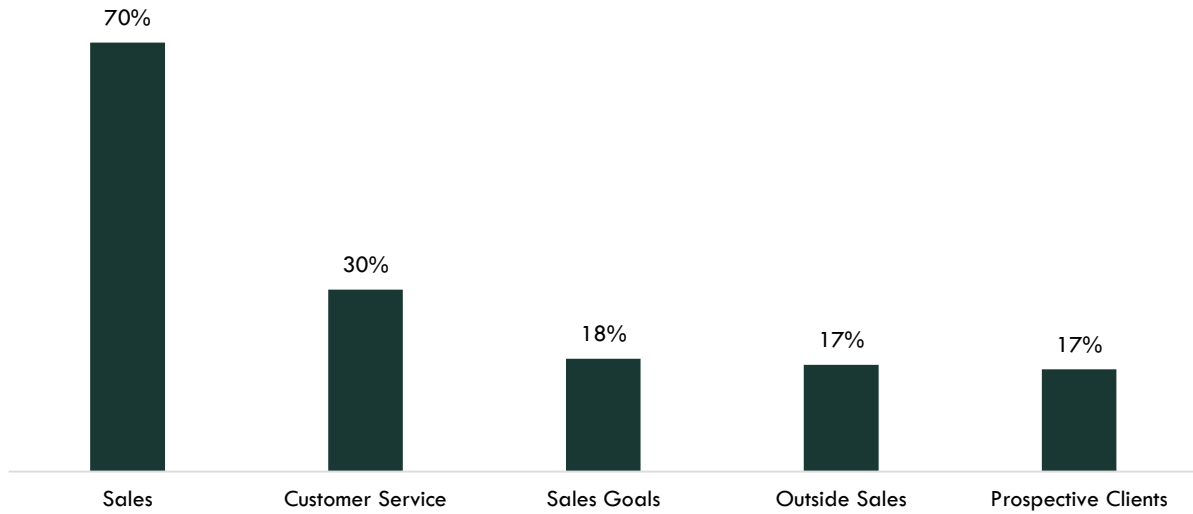


Exhibit 20. Top certifications in job postings for agriculture, water, and environmental technologies (n = 1,039)

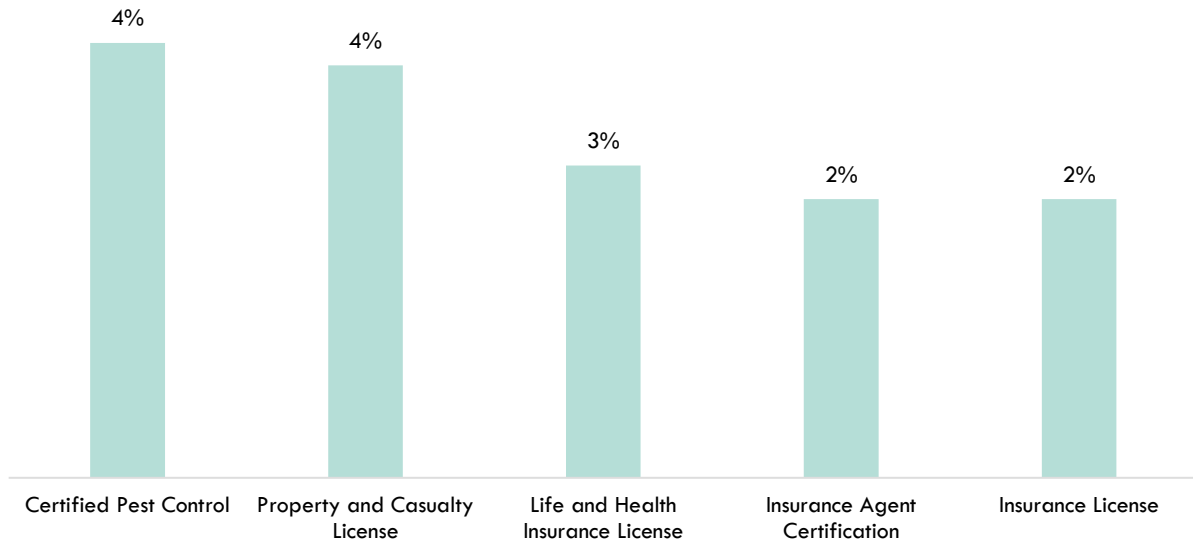
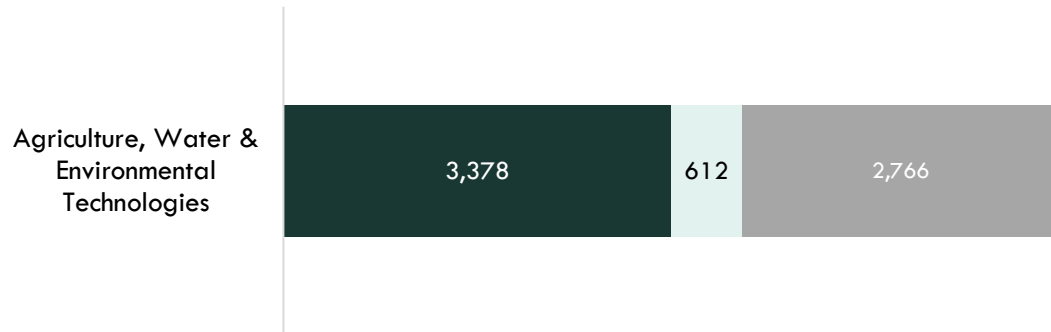


Exhibit 21. Agriculture, water, and environmental technologies postsecondary supply

TOP/ CIP Code- Title	College	Associate Degree	Associate for Transfer Degree	Award 1 < 2 Academic Years	Certificate 12 < 18 Semester Units	Certificate 16 < 30 Semester Units	Certificate 18 < 30 Semester Units	Certificate 30 < 60 Semester Units	Certificate 6 < 18 Semester Units	Certificate 8 < 16 Semester Units	Subtotal
010100 - Agriculture Technology and Sciences, General	Porterville	9									9
	Reedley College	1					1				2
	West Hills Coalinga	2					1		1		4
010200 - Animal Science	Reedley College	1	11		4	5					22
	Sequoias	5	10					3			18
010210 - Veterinary Technician (Licensed)	Sequoias						0				0
010230 - Dairy Science	Sequoias	0							3		3
010240 - Equine Science	Reedley College					3	2				5
	Sequoias					1	2				3
010300 - Plant Science	Reedley College	1	26		10	9	15	3			63
	Sequoias	2	8				1		2		13
	West Hills Coalinga		34								34
010310 - Agricultural Pest Control Adviser and Operator (Licensed)	Sequoias					0	1	0			2
	West Hills Coalinga					1	2				3
010400 - Viticulture, Enology, and Wine Business	Reedley College					1					1
010900 - Horticulture	Sequoias	1					2				3
010910 - Landscape Design and Maintenance	Sequoias	1					2		3		5
011200 - Agriculture Business, Sales and Service	Porterville		3								3
	Reedley College	0	18		1					5	25
	Sequoias	3	5			3	7				18
011300 - Food Processing and Related Technologies	Clovis						4				4
011400 - Forestry	Reedley College	10				5	9				23
011500 - Natural Resources	Fresno City					0	0				1
	Reedley College	5				5	13				23
011510 - Parks and Outdoor Recreation	Reedley College					1	2				3

TOP/ CIP Code- Title	College	Associate Degree	Associate for Transfer Degree	Award 1 < 2 Academic Years	Certificate 12 < 18 Semester Units	Certificate 16 < 30 Semester Units	Certificate 18 < 30 Semester Units	Certificate 30 < 60 Semester Units	Certificate 6 < 18 Semester Units	Certificate 8 < 16 Semester Units	Subtotal
011600 - Agricultural Power Equipment Technology	Reedley College	18				92	81	27			218
	Sequoias	1					0		0		2
51.0808 - Veterinary/Animal Health Technology/Technician and Veterinary Assistant	San Joaquin Valley College-Visalia	88		14							102
TOTAL		149	115	14	15	126	148	31	9	5	612

Exhibit 22. Agriculture, water, and environmental technologies annual demand and supply



BUSINESS & ENTREPRENEURSHIP

Exhibit 23. Business & entrepreneurship employment and occupational projections

OCCUPATION	2021 JOBS	2026 JOBS	5-YEAR CHANGE	5-YEAR % CHANGE	ANNUAL OPENINGS
Customer Service Representatives	6,964	6,974	10	0%	898
Bookkeeping, Accounting, and Auditing Clerks	6,412	6,443	31	0%	720
General and Operations Managers	6,330	6,852	522	8%	643
First-Line Supervisors of Office and Administrative Support Workers	4,854	4,946	92	2%	500
Project Management Specialists and Business Operations Specialists, All Other	5,514	5,825	311	6%	470
Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	2,310	2,467	157	7%	300
Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other	2,887	3,072	186	6%	251
Eligibility Interviewers, Government Programs	2,467	2,588	120	5%	249
Insurance Sales Agents	2,426	2,548	122	5%	247
Billing and Posting Clerks	1,841	1,919	78	4%	208
Human Resources Specialists	1,716	1,840	124	7%	191
Tax Examiners and Collectors, and Revenue Agents	1,858	1,897	39	2%	165
Office and Administrative Support Workers, All Other	1,182	1,218	36	3%	140
Production, Planning, and Expediting Clerks	1,138	1,211	74	6%	133
Information and Record Clerks, All Other	1,150	1,182	32	3%	133
Real Estate Sales Agents	1,285	1,359	74	6%	128
Insurance Claims and Policy Processing Clerks	1,330	1,270	(60)	(5%)	127
Sales and Related Workers, All Other	814	843	29	4%	111
Paralegals and Legal Assistants	895	953	58	6%	109
Property, Real Estate, and Community Association Managers	1,242	1,288	46	4%	106
Tellers	1,109	874	(235)	(21%)	103
Training and Development Specialists	826	891	65	8%	91
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific	753	809	56	7%	87

OCCUPATION	2021 JOBS	2026 JOBS	5-YEAR CHANGE	5-YEAR % CHANGE	ANNUAL OPENINGS
Products					
First-Line Supervisors of Non-Retail Sales Workers	931	924	(7)	(1%)	87
Claims Adjusters, Examiners, and Investigators	1,056	1,016	(40)	(4%)	82
First-Line Supervisors of Personal Service and Entertainment and Recreation Workers, Except Gambling Services	575	645	70	12%	80
Interviewers, Except Eligibility and Loan	572	577	5	1%	72
Tax Preparers	536	557	21	4%	64
Loan Officers	837	767	(70)	(8%)	61
Bill and Account Collectors	544	515	(29)	(5%)	57
Payroll and Timekeeping Clerks	561	534	(27)	(5%)	56
Order Clerks	471	455	(16)	(3%)	50
Court, Municipal, and License Clerks	450	467	17	4%	49
Human Resources Assistants, Except Payroll and Timekeeping	430	429	(1)	(0%)	43
Legal Secretaries and Administrative Assistants	386	354	(32)	(8%)	40
Real Estate Brokers	387	409	21	5%	38
Meeting, Convention, and Event Planners	256	294	38	15%	36
Loan Interviewers and Clerks	419	381	(38)	(9%)	35
Fundraisers	269	296	27	10%	32
Advertising Sales Agents	232	215	(18)	(8%)	28

Exhibit 24. Business & entrepreneurship wages

OCCUPATION	25TH PERCENTILE HOURLY WAGES	MEDIAN HOURLY
General and Operations Managers	\$33.24	\$44.45
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	\$31.87	\$42.20
Training and Development Specialists	\$23.41	\$29.63
Real Estate Brokers	\$22.74	\$40.22
Fundraisers	\$22.28	\$27.81
Human Resources Specialists	\$21.70	\$28.52
First-Line Supervisors of Office and Administrative Support Workers	\$21.68	\$27.39
Claims Adjusters, Examiners, and Investigators	\$20.95	\$30.57
Legal Secretaries and Administrative Assistants	\$20.32	\$26.91
Court, Municipal, and License Clerks	\$19.65	\$22.45
Advertising Sales Agents	\$19.43	\$30.63
Project Management Specialists and Business Operations Specialists, All Other	\$19.27	\$29.64
Eligibility Interviewers, Government Programs	\$19.26	\$23.58
Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other	\$19.09	\$36.27
First-Line Supervisors of Non-Retail Sales Workers	\$18.93	\$29.38
Loan Officers	\$18.74	\$26.10
Payroll and Timekeeping Clerks	\$18.63	\$24.73
Paralegals and Legal Assistants	\$18.17	\$22.36
Real Estate Sales Agents	\$17.48	\$28.62
Loan Interviewers and Clerks	\$17.37	\$21.60
Insurance Claims and Policy Processing Clerks	\$17.31	\$20.71
Insurance Sales Agents	\$17.21	\$25.00
Human Resources Assistants, Except Payroll and Timekeeping	\$16.97	\$20.80
Tax Examiners and Collectors, and Revenue Agents	\$16.84	\$21.61
Property, Real Estate, and Community Association Managers	\$16.67	\$26.72
Production, Planning, and Expediting Clerks	\$16.52	\$20.99
Meeting, Convention, and Event Planners	\$16.46	\$22.37
Interviewers, Except Eligibility and Loan	\$16.45	\$20.33

OCCUPATION	25TH PERCENTILE HOURLY WAGES	MEDIAN HOURLY
Bill and Account Collectors	\$16.35	\$19.07
Bookkeeping, Accounting, and Auditing Clerks	\$16.17	\$20.71
Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	\$15.90	\$21.05
Billing and Posting Clerks	\$15.73	\$18.23
Information and Record Clerks, All Other	\$15.38	\$19.10
Customer Service Representatives	\$14.36	\$16.46
Order Clerks	\$14.22	\$17.11
First-Line Supervisors of Personal Service and Entertainment and Recreation Workers, Except Gambling Services	\$13.88	\$16.34
Sales and Related Workers, All Other	\$13.85	\$15.23
Tellers	\$13.69	\$15.63
Tax Preparers	\$13.61	\$18.40
Office and Administrative Support Workers, All Other	\$13.61	\$15.91

Exhibit 25. Business & Entrepreneurship educational attainment

OCCUPATION	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training	CPS
Customer Service Representatives	High school diploma or equivalent	None	Short-term	41.9%
Bookkeeping, Accounting, and Auditing Clerks	Some college, no degree	None	Moderate-term	50.1%
General and Operations Managers	Bachelor's degree	5 years or more	None	34.3%
First-Line Supervisors of Office and Administrative Support Workers	High school diploma or equivalent	Less than 5 years	None	41.4%
Project Management Specialists and Business Operations Specialists, All Other	Bachelor's degree	None	None	22.2%
Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	High school diploma or equivalent	None	Moderate-term	29.2%
Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other	Bachelor's degree	Less than 5 years	None	24.8%
Eligibility Interviewers, Government Programs	High school diploma or equivalent	None	Moderate-term	40.2%
Insurance Sales Agents	High school diploma or equivalent	None	Moderate-term	36.5%
Billing and Posting Clerks	High school diploma or equivalent	None	Moderate-term	49.1%
Human Resources Specialists	Bachelor's degree	None	None	24.6%
Tax Examiners and Collectors, and Revenue Agents	Bachelor's degree	None	Moderate-term	32.6%
Office and Administrative Support Workers, All Other	High school diploma or equivalent	None	Short-term	40.7%
Production, Planning, and Expediting Clerks	High school diploma or equivalent	None	Moderate-term	39.8%
Information and Record Clerks, All Other	High school diploma or equivalent	None	Short-term	44.1%
Real Estate Sales Agents	High school diploma or equivalent	None	Moderate-term	35.0%
Insurance Claims and Policy Processing Clerks	High school diploma or equivalent	None	Moderate-term	45.2%

OCCUPATION	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training	CPS
Sales and Related Workers, All Other	High school diploma or equivalent	None	None	28.1%
Paralegals and Legal Assistants	Associate's degree	None	None	43.2%
Property, Real Estate, and Community Association Managers	High school diploma or equivalent	Less than 5 years	None	34.1%
Tellers	High school diploma or equivalent	None	Short-term	45.4%
Training and Development Specialists	Bachelor's degree	Less than 5 years	None	31.0%
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	Bachelor's degree	None	Moderate-term	32.1%
First-Line Supervisors of Non-Retail Sales Workers	High school diploma or equivalent	Less than 5 years	None	33.0%
Claims Adjusters, Examiners, and Investigators	High school diploma or equivalent	None	Long-term	33.8%
First-Line Supervisors of Personal Service and Entertainment and Recreation Workers, Except Gambling Services	High school diploma or equivalent	Less than 5 years	None	39.2%
Interviewers, Except Eligibility and Loan	High school diploma or equivalent	None	Short-term	43.7%
Tax Preparers	High school diploma or equivalent	None	Moderate-term	32.2%
Loan Officers	Bachelor's degree	None	Moderate-term	32.3%
Bill and Account Collectors	High school diploma or equivalent	None	Moderate-term	50.1%
Payroll and Timekeeping Clerks	High school diploma or equivalent	None	Moderate-term	50.0%
Order Clerks	Some college, no degree	None	Short-term	38.1%
Court, Municipal, and License Clerks	High school diploma or equivalent	None	Long-term	44.4%
Human Resources Assistants, Except Payroll and Timekeeping	Associate's degree	None	None	35.5%
Legal Secretaries and Administrative Assistants	High school diploma or equivalent	None	Moderate-term	53.2%
Real Estate Brokers	High school diploma or	Less than 5	None	35.0%

OCCUPATION	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training	CPS
	equivalent	years		
Meeting, Convention, and Event Planners	Bachelor's degree	None	None	24.6%
Loan Interviewers and Clerks	High school diploma or equivalent	None	Short-term	45.6%
Fundraisers	Bachelor's degree	None	None	9.2%
Advertising Sales Agents	High school diploma or equivalent	None	Moderate-term	26.8%

Exhibit 26. Top specialized skills in job postings for business & entrepreneurship (n = 9,938)

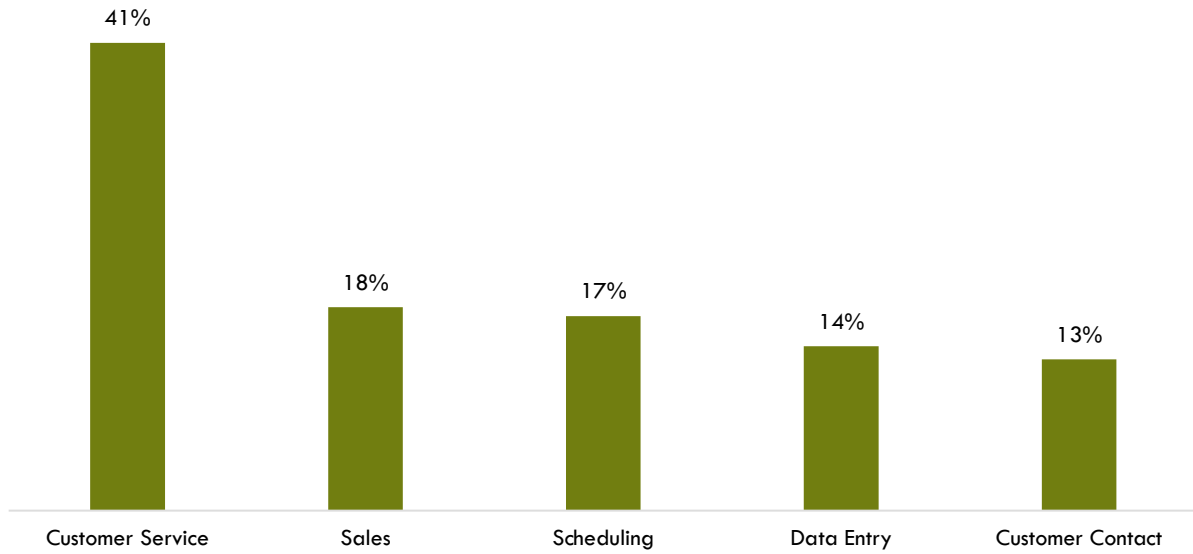
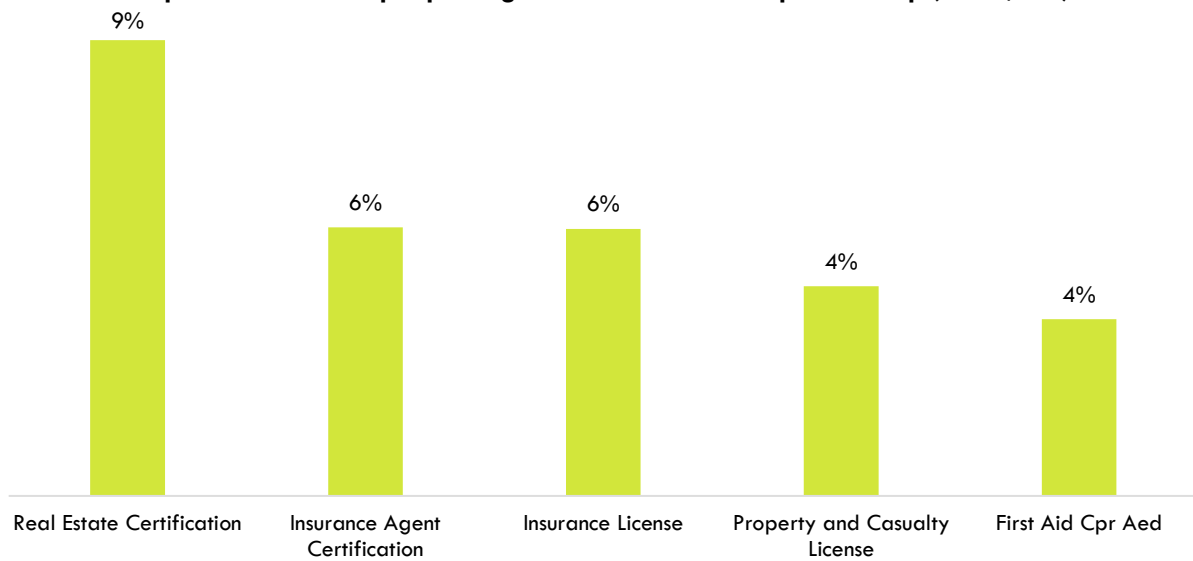
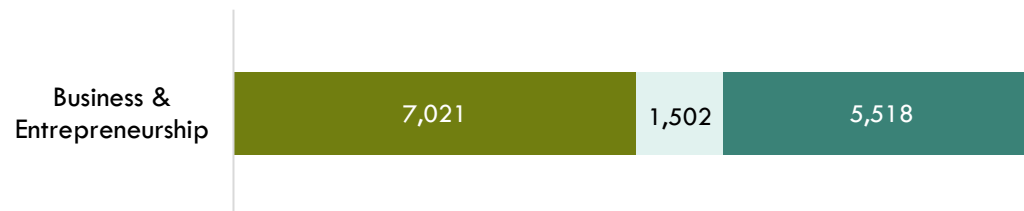


Exhibit 27. Top certifications in job postings for business & entrepreneurship (n = 2,781)



TOP/ CIP Code- Title	College	Associate Degree	Associate for Transfer Degree	Award < 1 Academic Year	Award 1 < 2 Academic Years	Certificate 12 < 18 Semester Units	Certificate 16 < 30 Semester Units	Certificate 18 < 30 Semester Units	Certificate 30 < 60 Semester Units	Certificate 6 < 18 Semester Units	Certificate 8 < 16 Semester Units	Subtotal
050640 - Small Business and Entrepreneurship	Reedley College	1					0	1				2
050900 - Marketing and Distribution	Fresno City	4										4
051410 - Legal Office Technology	Fresno City	1					1		1			2
	Sequoias									1		1
051800 - Customer Service	Porterville									3		3
140200 - Paralegal	Fresno City	23							31			54
	Sequoias	13							4			17
52.0302 - Accounting Technology/Technician and Bookkeeping	Institute of Technology	7										7
52.0399 - Accounting and Related Services, Other	Milan Institute-Visalia			10								10
	Clovis Adult Education			18								18
52.0401 - Administrative Assistant and Secretarial Science, General	Institute of Technology				1							1
	Milan Institute-Visalia			15								15
52.0408 - General Office Occupations and Clerical Services	San Joaquin Valley College-Visalia	111			100							211
	UEI College-Fresno				62							62
52.1001 - Human Resources Management/Personnel Administration, General	Institute of Technology	17			1							18
	San Joaquin Valley College-Visalia	16			24							40
TOTAL		298	652	42	186	19	157	78	57	5	7	1502

Exhibit 29. Business & entrepreneurship annual demand and supply



EDUCATION

Exhibit 30. Education employment and occupational projections

OCCUPATION	2021 JOBS	2026 JOBS	5-YEAR CHANGE	5-YEAR % CHANGE	ANNUAL OPENINGS
Teaching Assistants, Except Postsecondary	10,395	10,802	407	4%	1,041
Childcare Workers	5,887	5,669	(218)	(4%)	809
Substitute Teachers, Short-Term	5,075	5,353	278	5%	641
Recreation Workers	2,161	2,393	232	11%	394
Preschool Teachers, Except Special Education	2,026	2,211	184	9%	245
Teaching Assistants, Postsecondary	1,346	1,355	9	1%	131
Library Technicians	412	402	(10)	(3%)	59
Education and Childcare Administrators, Preschool and Daycare	598	633	35	6%	51
Interpreters and Translators	388	428	40	10%	46
Library Assistants, Clerical	257	251	(6)	(2%)	39

Exhibit 31. Education wages

OCCUPATION	25TH PERCENTILE HOURLY WAGES	MEDIAN HOURLY
Interpreters and Translators	\$20.00	\$26.37
Education and Childcare Administrators, Preschool and Daycare	\$18.24	\$25.93
Library Technicians	\$17.93	\$21.00
Substitute Teachers, Short-Term	\$15.52	\$17.73
Teaching Assistants, Postsecondary	\$13.99	\$15.04
Preschool Teachers, Except Special Education	\$13.96	\$15.91
Teaching Assistants, Except Postsecondary	\$13.80	\$16.41
Recreation Workers	\$13.16	\$14.25
Library Assistants, Clerical	\$13.11	\$16.25
Childcare Workers	\$12.85	\$13.09

Exhibit 32. Education educational attainment

OCCUPATION	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training	CPS
Teaching Assistants, Except Postsecondary	Some college, no degree	None	None	38.6%
Childcare Workers	High school diploma or equivalent	None	Short-term	35.1%
Substitute Teachers, Short-Term	Bachelor's degree	None	None	25.4%
Recreation Workers	High school diploma or equivalent	None	Short-term	35.7%
Preschool Teachers, Except Special Education	Associate's degree	None	None	31.6%
Teaching Assistants, Postsecondary	Bachelor's degree	None	None	38.6%
Library Technicians	Postsecondary nondegree award	None	None	25.9%
Education and Childcare Administrators, Preschool and Daycare	Bachelor's degree	Less than 5 years	None	11.4%
Interpreters and Translators	Bachelor's degree	None	None	35.5%
Library Assistants, Clerical	High school diploma or equivalent	None	Short-term	37.0%

Exhibit 33. Top specialized skills in job postings for education (n= 627)

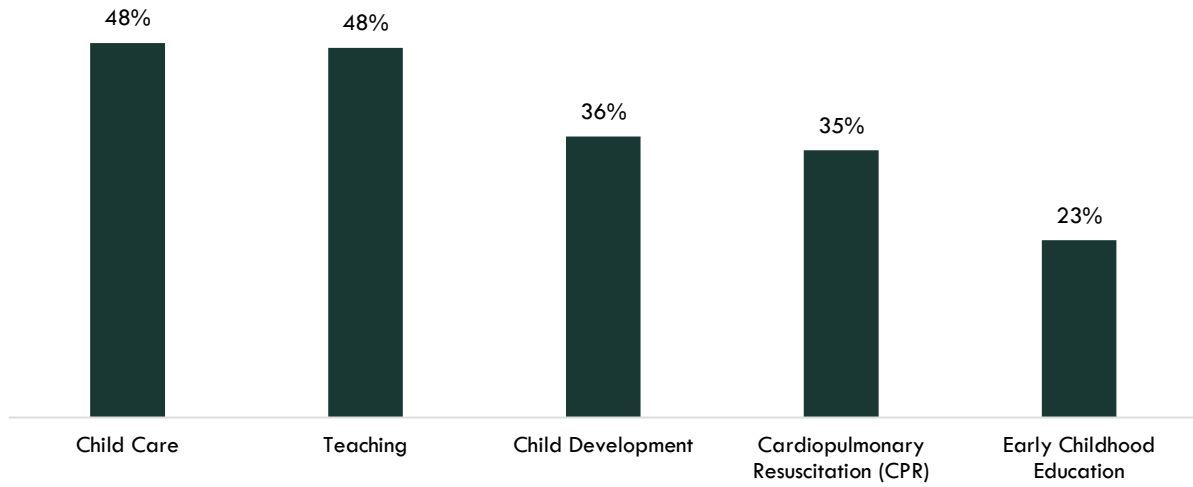


Exhibit 34. Top certifications in job postings for education (n = 425)

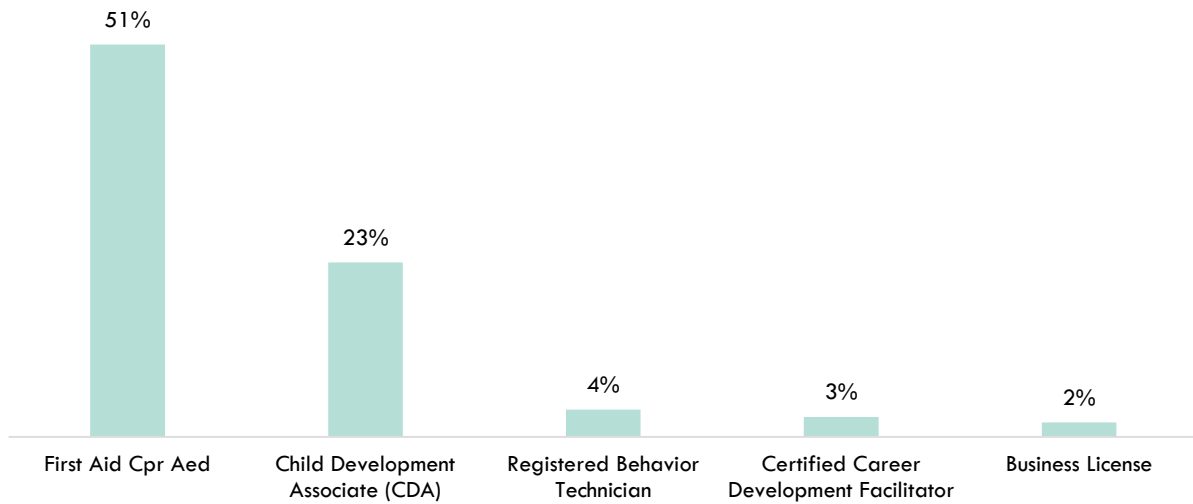
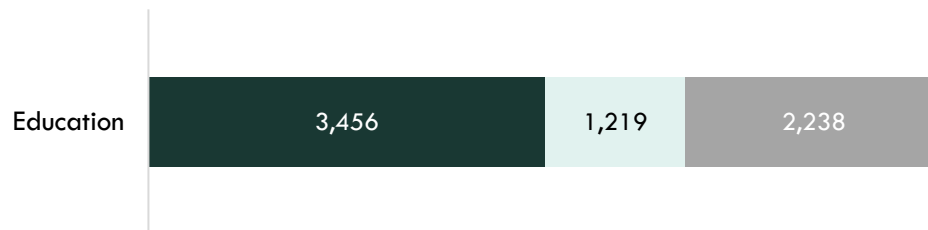


Exhibit 35. Education postsecondary supply

TOP/ CIP Code- Title	College	Associate Degree	Associate for Transfer Degree	Certificate 12 < 18 Semester Units	Certificate 16 < 30 Semester Units	Certificate 18 < 30 Semester Units	Certificate 30 < 60 Semester Units	Certificate 6 < 18 Semester Units	Certificate 8 < 16 Semester Units	Subtotal
080200 - Educational Aide (Teacher Assistant)	Fresno City	1				1				2
080900 - Special Education	Fresno City						3			3
085010 - Sign Language Interpreting	Fresno City				2	2				5
130500 - Child Development/Early Care and Education	Clovis	5	18		4	10				38
	Fresno City	16	44	10	15	71			5	162
	Porterville	31	12				22			65
	Reedley College	24	38	36	52	71			8	230
	Sequoias	38	52		18	39		292		440
	West Hills Coalinga	5	4			4		71		84
	West Hills Lemoore	19	9		2	10		95		134
	Fresno City	2						3		5
130520 - Children with Special Needs	Reedley College				1	1				2
	Sequoias					5				5
	Clovis				4	6				10
130550 - The School Age Child	Reedley College				1	9				9
	Fresno City			1					1	2
130570 - Foster and Kinship Care	Fresno City			1						2
130590 - Infants and Toddlers	Fresno City			6	2					8
160200 - Library Technician (Aide)	Fresno City	4			2	8				15
TOTAL		145	178	53	105	237	28	458	14	1,219

Exhibit 36. Education annual demand and supply



ENERGY, CONSTRUCTION & UTILITIES

Exhibit 37. Energy, construction & utilities employment and occupational projections

OCCUPATION	2021 JOBS	2026 JOBS	5-YEAR CHANGE	5-YEAR % CHANGE	ANNUAL OPENINGS
Maintenance and Repair Workers, General	6,219	6,547	328	5%	664
Industrial Truck and Tractor Operators	4,172	4,365	193	5%	499
Carpenters	3,731	3,923	193	5%	391
Electricians	2,826	3,215	389	14%	385
Plumbers, Pipefitters, and Steamfitters	1,881	2,105	224	12%	246
First-Line Supervisors of Construction Trades and Extraction Workers	2,009	2,143	134	7%	225
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	1,385	1,566	180	13%	175
Operating Engineers and Other Construction Equipment Operators	1,252	1,329	77	6%	150
Construction Managers	1,396	1,561	165	12%	137
Telecommunications Equipment Installers and Repairers, Except Line Installers	1,117	1,100	(17)	(2%)	124
Installation, Maintenance, and Repair Workers, All Other	887	923	36	4%	101
Administrative Services and Facilities Managers	974	1,032	58	6%	93
Telecommunications Line Installers and Repairers	687	690	3	0%	76
Sheet Metal Workers	464	500	36	8%	52
Water and Wastewater Treatment Plant and System Operators	556	553	(2)	(0%)	51
Solar Photovoltaic Installers	292	357	65	22%	50
Construction and Building Inspectors	373	382	9	2%	46
Electrical Power-Line Installers and Repairers	401	418	18	4%	39
Structural Iron and Steel Workers	316	340	24	8%	38
Civil Engineering Technologists and Technicians	334	353	19	6%	35
Woodworkers, All Other	285	308	23	8%	33
Glaziers	254	276	23	9%	32
Computer, Automated Teller, and Office Machine Repairers	263	260	(3)	(1%)	30
Architectural and Civil Drafters	250	266	15	6%	27
Security and Fire Alarm Systems Installers	187	216	28	15%	26

Exhibit 38. Energy, construction & utilities employment wages

OCCUPATION	25TH PERCENTILE HOURLY WAGES	MEDIAN HOURLY
Telecommunications Line Installers and Repairers	\$38.80	\$44.74
Electrical Power-Line Installers and Repairers	\$35.18	\$44.37
Administrative Services and Facilities Managers	\$32.57	\$43.22
Construction and Building Inspectors	\$26.28	\$35.21
Telecommunications Equipment Installers and Repairers, Except Line Installers	\$26.23	\$30.16
Civil Engineering Technologists and Technicians	\$25.98	\$33.16
First-Line Supervisors of Construction Trades and Extraction Workers	\$25.03	\$34.33
Operating Engineers and Other Construction Equipment Operators	\$22.43	\$28.49
Water and Wastewater Treatment Plant and System Operators	\$21.96	\$27.68
Architectural and Civil Drafters	\$21.30	\$24.94
Construction Managers	\$20.96	\$34.87
Security and Fire Alarm Systems Installers	\$19.72	\$23.96
Electricians	\$19.50	\$27.82
Solar Photovoltaic Installers	\$19.10	\$22.43
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	\$18.96	\$27.27
Sheet Metal Workers	\$18.64	\$24.90
Plumbers, Pipefitters, and Steamfitters	\$18.17	\$25.06
Structural Iron and Steel Workers	\$18.03	\$23.94
Glaziers	\$17.28	\$21.73
Carpenters	\$16.31	\$22.41
Maintenance and Repair Workers, General	\$15.38	\$19.95
Computer, Automated Teller, and Office Machine Repairers	\$15.37	\$18.85
Installation, Maintenance, and Repair Workers, All Other	\$15.22	\$19.21
Industrial Truck and Tractor Operators	\$14.74	\$17.74
Woodworkers, All Other	\$13.55	\$17.99

Exhibit 39. Energy, construction & utilities educational attainment

OCCUPATION	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training	CPS
Maintenance and Repair Workers, General	High school diploma or equivalent	None	Moderate-term	37.4%
Industrial Truck and Tractor Operators	No formal educational credential	None	Short-term	26.4%
Carpenters	High school diploma or equivalent	None	Apprenticeship	25.1%
Electricians	High school diploma or equivalent	None	Apprenticeship	45.8%
Plumbers, Pipefitters, and Steamfitters	High school diploma or equivalent	None	Apprenticeship	32.9%
First-Line Supervisors of Construction Trades and Extraction Workers	High school diploma or equivalent	5 years or more	None	29.2%
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	Postsecondary nondegree award	None	Long-term	44.0%
Operating Engineers and Other Construction Equipment Operators	High school diploma or equivalent	None	Moderate-term	24.5%
Construction Managers	Bachelor's degree	None	Moderate-term	31.5%
Telecommunications Equipment Installers and Repairers, Except Line Installers	Postsecondary nondegree award	None	Moderate-term	53.0%
Installation, Maintenance, and Repair Workers, All Other	High school diploma or equivalent	None	Long-term	36.8%
Administrative Services and Facilities Managers	Bachelor's degree	Less than 5 years	None	34.8%
Telecommunications Line Installers and Repairers	High school diploma or equivalent	None	Long-term	46.3%
Sheet Metal Workers	High school diploma or equivalent	None	Apprenticeship	32.3%
Water and Wastewater Treatment Plant and System Operators	High school diploma or equivalent	None	Long-term	47.0%
Solar Photovoltaic Installers	High school diploma or equivalent	None	Moderate-term	51.6%
Construction and Building Inspectors	High school diploma or equivalent	5 years or more	Moderate-term	40.5%
Electrical Power-Line Installers and Repairers	High school diploma or equivalent	None	Long-term	47.4%

OCCUPATION	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training	CPS
Structural Iron and Steel Workers	High school diploma or equivalent	None	Apprenticeship	35.7%
Civil Engineering Technologists and Technicians	Associate's degree	None	None	50.7%
Woodworkers, All Other	High school diploma or equivalent	None	Moderate-term	35.1%
Glaziers	High school diploma or equivalent	None	Apprenticeship	32.6%
Computer, Automated Teller, and Office Machine Repairers	Some college, no degree	None	Short-term	53.5%
Architectural and Civil Drafters	Associate's degree	None	None	53.4%
Security and Fire Alarm Systems Installers	High school diploma or equivalent	None	Moderate-term	49.2%

Exhibit 40. Top specialized skills in job postings for energy, construction & utilities (n = 2,793)

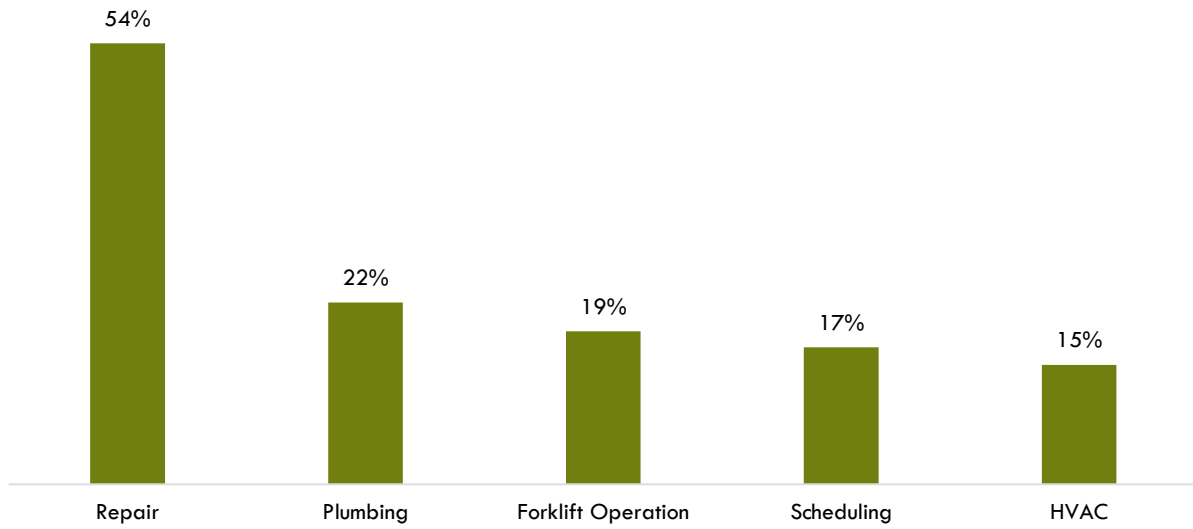


Exhibit 41. Top certifications in job postings for energy, construction & utilities (n = 1,582)

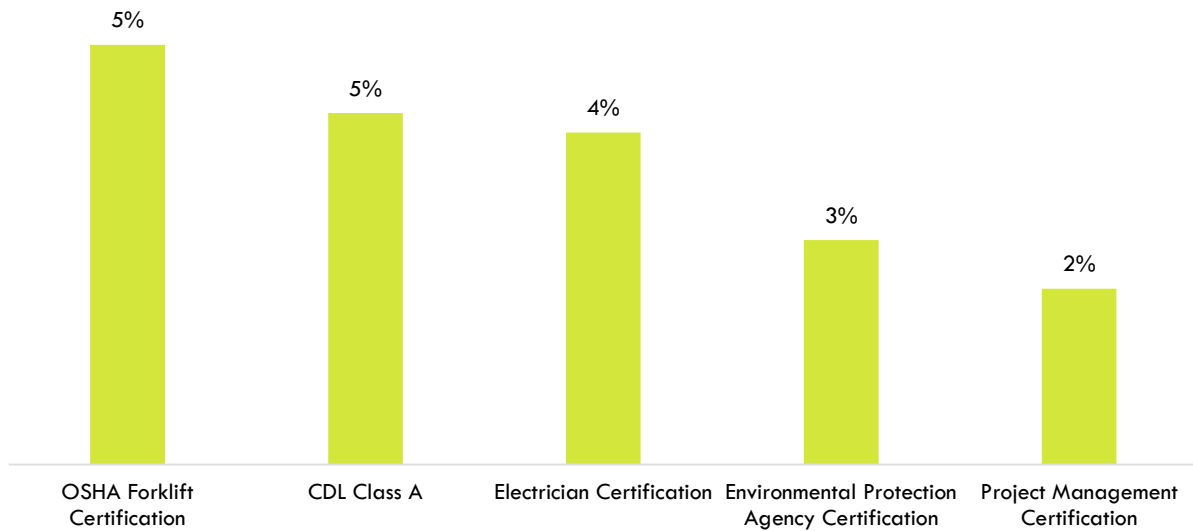


Exhibit 42. Energy, construction & utilities postsecondary supply

TOP/ CIP Code- Title	College	Associate Degree	Award 1 < 2 Academic Years	Certificate 12 < 18 Semester Units	Certificate 16 < 30 Semester Units	Certificate 18 < 30 Semester Units	Certificate 30 < 60 Semester Units	Certificate 6 < 18 Semester Units	Certificate 60+ Semester Units	Certificate 8 < 16 Semester Units	Subtotal
020100 - Architecture and Architectural Technology	Fresno City	7					5				12
	Sequoias	3		9	0		3	10		1	28
094600 - Environmental Control Technology	Fresno City	7		34			11		1	1	54
	Sequoias	2					24	2			28
	West Hills Coalinga				2						2
095200 - Construction Crafts Technology	Fresno City	1					1				2
	Sequoias	2					3	4			9
095220 - Electrical	Sequoias			16	1					2	19
095300 - Drafting Technology	Fresno City	4					6				10
095500 - Laboratory Science Technology	Fresno City				0	2					2
095630 - Machining and Machine Tools	Reedley College	3			8	5	7				24
095720 - Construction Inspection	Sequoias	1			1	1	1				4
095800 - Water and Wastewater Technology	Clovis				1	3					4
	Sequoias							2			2
46.0302 - Electrician	San Joaquin Valley College-Visalia	7	64								72
47.0201 - Heating, Air Conditioning, Ventilation and Refrigeration Maintenance Technology/	Institute of Technology		105								105
	San Joaquin Valley College-Visalia	54	157								211
	UEI College-Fresno		29								29
52.2001 - Construction Management	San Joaquin Valley College-Visalia	40									40
TOTAL		133	356	60	13	11	61	18	1	3	656

Exhibit 43. Energy, construction & utilities annual demand and supply



HEALTH

Exhibit 44. Health employment and occupational projections

OCCUPATION	2021 JOBS	2026 JOBS	5-YEAR CHANGE	5-YEAR % CHANGE	ANNUAL OPENINGS
Home Health and Personal Care Aides	26,901	34,379	7,478	28%	5,757
Registered Nurses	11,163	12,281	1,119	10%	835
Medical Assistants	4,578	5,072	494	11%	656
Nursing Assistants	4,128	4,647	519	13%	632
Medical Secretaries and Administrative Assistants	3,333	3,608	275	8%	426
Social and Human Service Assistants	2,563	2,879	315	12%	375
Dental Assistants	2,029	2,186	156	8%	275
Licensed Practical and Licensed Vocational Nurses	2,676	2,960	284	11%	268
Medical Dosimetrists, Medical Records Specialists, and Health Technologists and Technicians, All Other	1,524	1,681	158	10%	144
Pharmacy Technicians	1,579	1,645	66	4%	126
Psychiatric Technicians	1,247	1,312	65	5%	105
Massage Therapists	616	711	95	15%	92
Respiratory Therapists	711	812	101	14%	56
Dental Hygienists	628	697	69	11%	54
Radiologic Technologists and Technicians	499	570	71	14%	52
Phlebotomists	276	326	50	18%	45
Physical Therapist Aides	267	317	50	19%	44
Physical Therapist Assistants	219	291	71	33%	44
Medical Equipment Preparers	248	270	21	9%	36
Community Health Workers	238	278	40	17%	35
Surgical Technologists	335	377	42	13%	33
Social Science Research Assistants	255	262	7	3%	33
Health Education Specialists	247	273	25	10%	32
Pharmacy Aides	249	231	(18)	(7%)	31
Health Information Technologists, Medical Registrars, Surgical Assistants, and Healthcare Practitioners and Technical Workers,	316	344	27	9%	29

Exhibit 45. Health wages

OCCUPATION	25TH PERCENTILE HOURLY WAGES	MEDIAN HOURLY
Dental Hygienists	\$41.00	\$44.59
Registered Nurses	\$37.52	\$45.21
Radiologic Technologists and Technicians	\$34.45	\$39.99
Physical Therapist Assistants	\$30.22	\$36.38
Psychiatric Technicians	\$27.06	\$30.04
Surgical Technologists	\$26.50	\$32.24
Licensed Practical and Licensed Vocational Nurses	\$21.97	\$25.15
Health Education Specialists	\$20.37	\$25.67
Respiratory Therapists	\$19.57	\$21.86
Health Information Technologists, Medical Registrars, Surgical Assistants, and Healthcare Practitioners and Technical Workers,	\$19.12	\$25.80
Medical Equipment Preparers	\$18.96	\$24.61
Phlebotomists	\$17.35	\$19.81
Community Health Workers	\$16.95	\$19.68
Social Science Research Assistants	\$15.90	\$19.74
Pharmacy Technicians	\$15.78	\$18.96
Medical Dosimetrists, Medical Records Specialists, and Health Technologists and Technicians, All Other	\$15.69	\$19.37
Dental Assistants	\$15.30	\$18.37
Social and Human Service Assistants	\$15.08	\$17.82
Medical Secretaries and Administrative Assistants	\$15.01	\$17.74
Medical Assistants	\$14.47	\$16.70
Pharmacy Aides	\$13.98	\$15.50
Nursing Assistants	\$13.77	\$15.00
Physical Therapist Aides	\$13.42	\$14.55
Massage Therapists	\$13.05	\$16.78
Home Health and Personal Care Aides	\$13.02	\$13.17

Exhibit 46. Health educational attainment

OCCUPATION	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training	CPS
Home Health and Personal Care Aides	High school diploma or equivalent	None	Short-term	34.9%
Registered Nurses	Bachelor's degree	None	None	33.3%
Medical Assistants	Postsecondary nondegree award	None	None	63.4%
Nursing Assistants	Postsecondary nondegree award	None	None	44.7%
Medical Secretaries and Administrative Assistants	High school diploma or equivalent	None	Moderate-term	53.6%
Social and Human Service Assistants	High school diploma or equivalent	None	Short-term	34.4%
Dental Assistants	Postsecondary nondegree award	None	None	55.9%
Licensed Practical and Licensed Vocational Nurses	Postsecondary nondegree award	None	None	73.3%
Medical Dosimetrists, Medical Records Specialists, and Health Technologists and Technicians, All Other	Postsecondary nondegree award	None	None	46.8%
Pharmacy Technicians	High school diploma or equivalent	None	Moderate-term	53.7%
Psychiatric Technicians	Postsecondary nondegree award	Less than 5 years	Short-term	37.6%
Massage Therapists	Postsecondary nondegree award	None	None	50.1%
Respiratory Therapists	Associate's degree	None	None	65.0%
Dental Hygienists	Associate's degree	None	None	60.1%
Radiologic Technologists and Technicians	Associate's degree	None	None	66.6%
Phlebotomists	Postsecondary nondegree award	None	None	59.7%
Physical Therapist Aides	High school diploma or equivalent	None	Short-term	60.2%
Physical Therapist Assistants	Associate's degree	None	None	60.2%
Medical Equipment Preparers	High school diploma or equivalent	None	Moderate-term	43.2%
Community Health Workers	High school diploma or	None	Short-term	26.7%

OCCUPATION	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training	CPS
	equivalent			
Surgical Technologists	Postsecondary nondegree award	None	None	72.6%
Social Science Research Assistants	Bachelor's degree	None	None	37.1%
Health Education Specialists	Bachelor's degree	None	None	26.7%
Pharmacy Aides	High school diploma or equivalent	None	Short-term	39.5%
Health Information Technologists, Medical Registrars, Surgical Assistants, and Healthcare Practitioners and Technical Workers,	Postsecondary nondegree award	None	None	20.2%

Exhibit 47. Top specialized skills in job postings for health (n = 8,364)

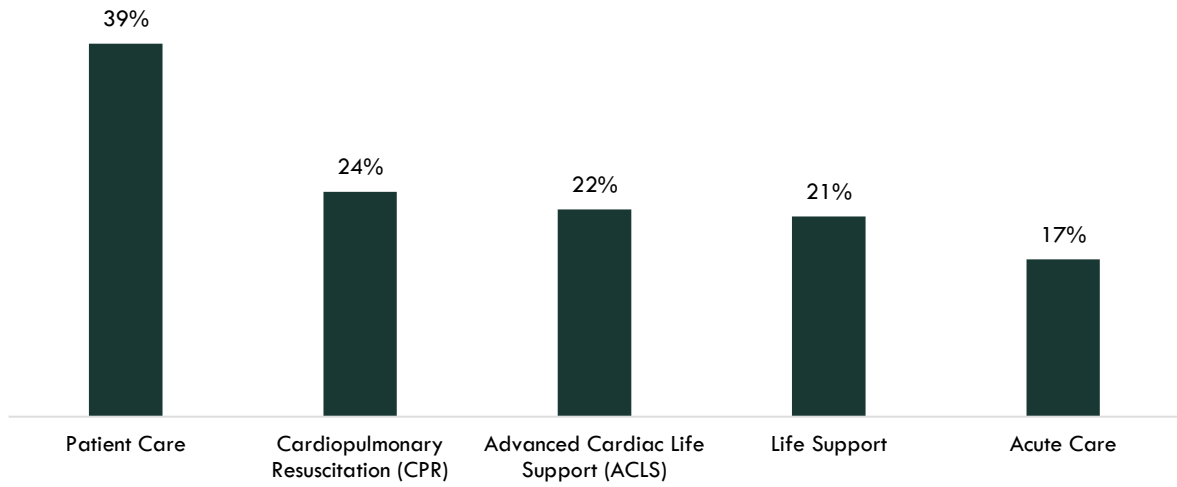


Exhibit 48. Top certifications in job postings for health (n = 8,831)

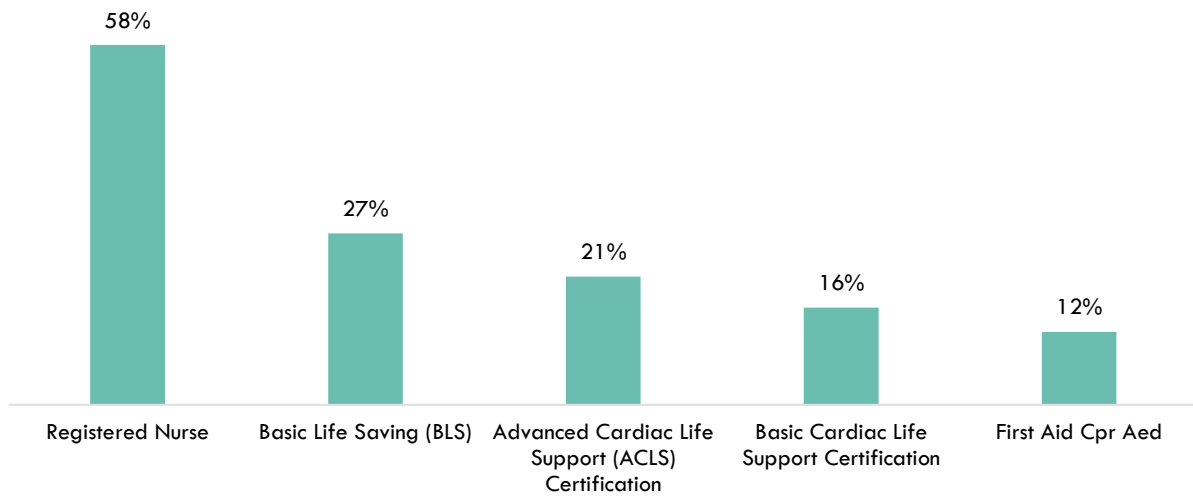
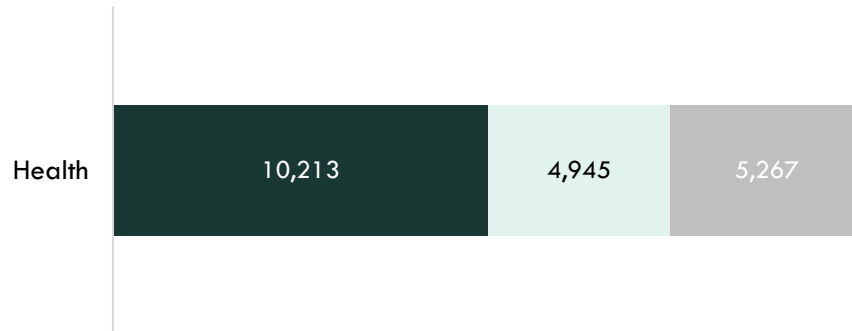


Exhibit 49. Health postsecondary supply

TOP/ CIP Code- Title	College	Associate Degree	Associate for Transfer Degree	Award < 1 Academic Year	Award 1 < 2 Academic Years	Award 2 < 4 Academic Years	Certificate 16 < 30 Semester Units	Certificate 18 < 30 Semester Units	Certificate 30 < 60 Semester Units	Certificate 6 < 18 Semester Units	Credit Award, < 6 Semester Units	Subtotal
051420 - Medical Office Technology	Fresno City	8					5	6	8			27
	Reedley College	16					5	15				36
120100 - Health Occupations, General	Clovis						0					0
	Fresno City		7				1					8
120810 - Clinical Medical Assisting	Fresno City	23					14	55				93
121000 - Respiratory Care/Therapy	Fresno City	18										18
122000 - Speech/Language Pathology and Audiology	Reedley College						0					0
122100 - Pharmacy Technology	Sequoias									14		14
122200 - Physical Therapist Assistant	Sequoias	24										24
122300 - Health Information Technology	Fresno City	11										11
122310 - Health Information Coding	Fresno City						2	5				7
122500 - Radiologic Technology	Fresno City	20										20
122800 - Athletic Training and Sports Medicine	Sequoias	7										7
123010 - Registered Nursing	Fresno City	197							34			231
	Porterville	19										19
	Reedley College	11						4				15
	Sequoias	85										85
	West Hills Lemoore	31										31
123020 - Licensed Vocational Nursing	Reedley College	9							17			26
123030 - Certified Nurse Assistant	Reedley College						1	0				1
	Sequoias									70		70
123900 - Psychiatric Technician	Porterville									31		31
	West Hills Coalinga	27								53		80
124010 - Dental Assistant	Reedley College	5							16			21

TOP/ CIP Code- Title	College	Associate Degree	Associate for Transfer Degree	Award < 1 Academic Year	Award 1 < 2 Academic Years	Award 2 < 4 Academic Years	Certificate 16 < 30 Semester Units	Certificate 18 < 30 Semester Units	Certificate 30 < 60 Semester Units	Certificate 6 < 18 Semester Units	Credit Award, < 6 Semester Units	Subtotal
51.3902 - Nursing Assistant/Aide and Patient Care Assistant/Aide	Institute of Technology			2								2
	Milan Institute-Visalia			40								40
51.3999 - Practical Nursing, Vocational Nursing and Nursing Assistants, Other	Institute of Technology				37	122						160
TOTAL		1,663	7	587	1,963	122	35	97	255	195	20	4,945

Exhibit 50. Health annual demand and supply



ICT/ DIGITAL MEDIA

Exhibit 51. ICT/digital media employment and occupational projections

OCCUPATION	2021 JOBS	2026 JOBS	5-YEAR CHANGE	5-YEAR % CHANGE	ANNUAL OPENINGS
Office Clerks, General	12,399	12,620	221	2%	1,474
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	6,974	6,908	(66)	(1%)	748
Executive Secretaries and Executive Administrative Assistants	1,086	1,014	(72)	(7%)	114
Computer User Support Specialists	1,286	1,341	55	4%	106
Computer Occupations, All Other	798	853	55	7%	70
Graphic Designers	488	505	17	3%	48
Network and Computer Systems Administrators	494	519	25	5%	38
Computer Network Support Specialists	324	337	13	4%	26
Web Developers and Digital Interface Designers	282	308	26	9%	26
Audiovisual Equipment Installers and Repairers	210	215	6	3%	24

Exhibit 52. ICT/digital media employment wages

OCCUPATION	25TH PERCENTILE HOURLY WAGES	MEDIAN HOURLY
Network and Computer Systems Administrators	\$34.26	\$42.14
Computer Occupations, All Other	\$26.66	\$35.94
Computer Network Support Specialists	\$25.11	\$33.29
Executive Secretaries and Executive Administrative Assistants	\$21.55	\$26.31
Computer User Support Specialists	\$18.04	\$24.08
Audiovisual Equipment Installers and Repairers	\$17.76	\$23.99
Web Developers and Digital Interface Designers	\$17.50	\$28.30
Graphic Designers	\$15.94	\$23.62
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	\$15.48	\$19.30
Office Clerks, General	\$13.99	\$16.77

Exhibit 53. ICT/digital media educational attainment

OCCUPATION	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training	CPS
Office Clerks, General	High school diploma or equivalent	None	Short-term	45.2%
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	High school diploma or equivalent	None	Short-term	45.9%
Executive Secretaries and Executive Administrative Assistants	High school diploma or equivalent	Less than 5 years	None	41.0%
Computer User Support Specialists	Some college, no degree	None	None	39.2%
Computer Occupations, All Other	Bachelor's degree	None	Moderate-term	27.2%
Graphic Designers	Bachelor's degree	None	None	26.5%
Network and Computer Systems Administrators	Bachelor's degree	None	None	37.4%
Computer Network Support Specialists	Associate's degree	None	None	39.2%
Web Developers and Digital Interface Designers	Associate's degree	None	None	23.4%

Exhibit 54. Top specialized skills in job postings for ICT/digital media (n = 3,725)

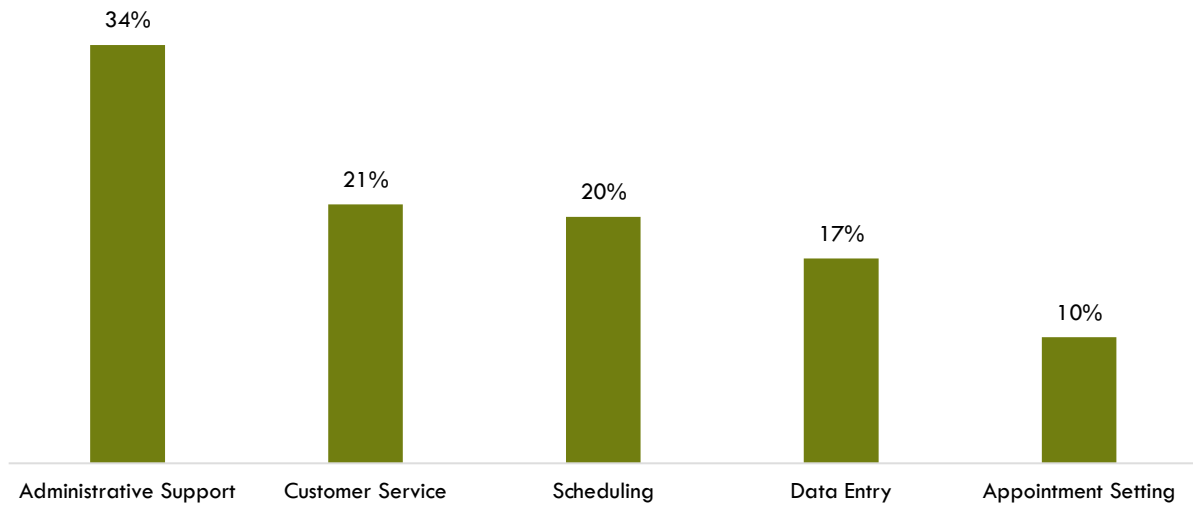


Exhibit 55. Top certifications in job postings for ICT/digital media (n = 925)

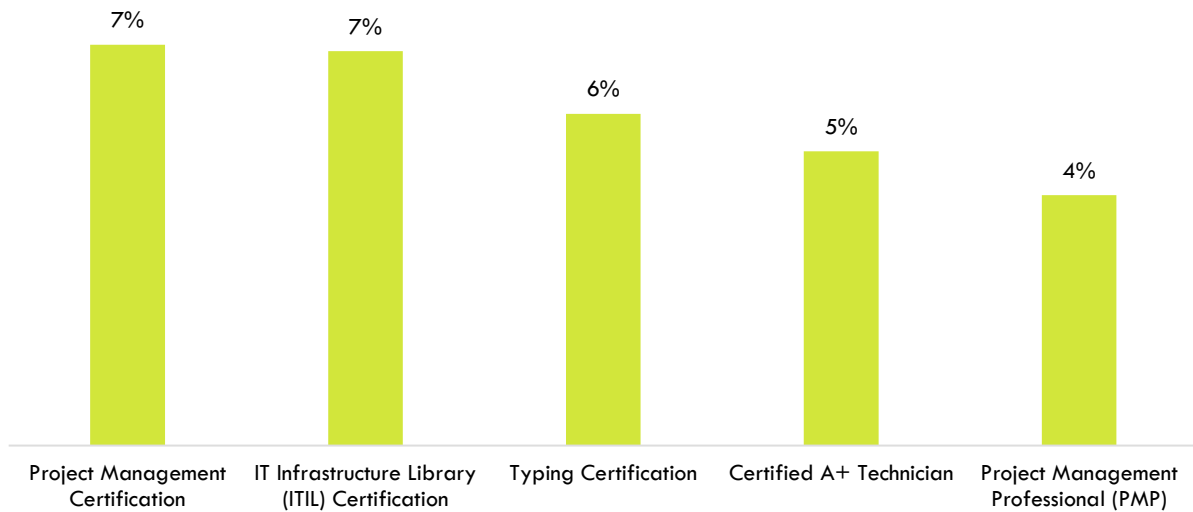


Exhibit 56. ICT/digital media postsecondary supply

TOP / CIP Code- Title	College	Associate Degree	Associate for Transfer Degree	Award 1 < 2 Academic Years	Certificate 12 < 18 Semester Units	Certificate 16 < 30 Semester Units	Certificate 18 < 30 Semester Units	Certificate 30 < 60 Semester Units	Certificate 6 < 18 Semester Units	Certificate 8 < 16 Semester Units	Noncredit Award 480 < 960 Hours	Subtotal
051400 - Office Technology/Office Computer Applications	Fresno City	16				6	19	4			8	53
	Reedley College	11			16	17	25			12		81
	Sequoias	0					1					2
	West Hills Coalinga	3				0	1					4
	West Hills Lemoore	0										0
060200 - Journalism	Fresno City		16									16
	Sequoias		4									4
061400 - Digital Media	Sequoias								0			0
061430 - Website Design and Development	Clovis	1										1
	Fresno City				1					0		1
070100 - Information Technology, General	Porterville	2							4			6
	Sequoias								0			0
070200 - Computer Information Systems	Clovis					0	1					1
	Fresno City	7				1						8
	Porterville	11							1			12
	Reedley College				10	15	7					32
	Sequoias	5						2				7
070210 - Software Applications	West Hills Coalinga	4					4					8
	West Hills Lemoore	17							15			32
070710 - Computer Programming	Reedley College	1				4	0					5
	West Hills Lemoore						2					2
070800 - Computer Infrastructure and Support	Fresno City				3	1						4
	Sequoias								2			2
070810 - Computer Networking	Clovis	2					1					3
	Fresno City	22						22				45
	Reedley College	4				9	7					20
	Sequoias	1							5			6
	West Hills Lemoore					0	1					1

TOP/ CIP Code- Title	College	Associate Degree	Associate for Transfer Degree	Award 1 < 2 Academic Years	Certificate 12 < 18 Semester Units	Certificate 16 < 30 Semester Units	Certificate 18 < 30 Semester Units	Certificate 30 < 60 Semester Units	Certificate 6 < 18 Semester Units	Certificate 8 < 16 Semester Units	Noncredit Award 480 < 960 Hours	Subtotal
070820 - Computer Support	Clovis	0				0						1
	Reedley College	4					4					8
070900 - World Wide Web Administration	Fresno City	2				1	1					3
09.0401 - Journalism	California State University-Fresno											0
093430 - Telecommunications Technology	Fresno City				18	1		5				23
101300 - Commercial Art	Porterville	4										4
	Sequoias							1				1
103000 - Graphic Art and Design	Fresno City	5						5				10
	Sequoias	2			2				9	1		15
11.0101 - Computer and Information Sciences, General	Milan Institute-Visalia			6								6
11.0103 - Information Technology	San Joaquin Valley College-Visalia	12		19								31
11.0901 - Computer Systems Networking and Telecommunications	Institute of Technology			13								13
11.1006 - Computer Support Specialist	San Joaquin Valley College-Visalia	7										7
TOTAL		143	19	38	51	55	74	40	36	14	8	477

Exhibit 57. ICT/digital media annual demand and supply



PUBLIC SAFETY

Exhibit 58. Public safety employment and occupational projections

OCCUPATION	2021 JOBS	2026 JOBS	5-YEAR CHANGE	5-YEAR % CHANGE	ANNUAL OPENINGS
Correctional Officers and Jailers	3,444	3,471	27	1%	328
Police and Sheriffs Patrol Officers	2,755	2,830	75	3%	230
Firefighters	1,227	1,266	39	3%	101
Emergency Medical Technicians and Paramedics	987	1,079	92	9%	89
Public Safety Telecommunicators	339	352	13	4%	34
Private Detectives and Investigators	340	348	8	2%	32
Detectives and Criminal Investigators	389	399	10	3%	31
Miscellaneous First-Line Supervisors, Protective Service Workers	289	294	5	2%	30
First-Line Supervisors of Correctional Officers	321	329	8	3%	28
Transportation Security Screeners	268	277	9	3%	26

Exhibit 59. Public safety wages

OCCUPATION	25TH PERCENTILE HOURLY WAGES	MEDIAN HOURLY
First-Line Supervisors of Correctional Officers	\$42.39	\$49.06
Correctional Officers and Jailers	\$30.76	\$38.70
Detectives and Criminal Investigators	\$30.01	\$42.40
Police and Sheriffs Patrol Officers	\$28.22	\$39.96
Firefighters	\$24.58	\$30.54
Miscellaneous First-Line Supervisors, Protective Service Workers	\$24.54	\$32.10
Private Detectives and Investigators	\$21.04	\$29.96
Transportation Security Screeners	\$20.04	\$32.21
Public Safety Telecommunicators	\$18.78	\$24.89
Emergency Medical Technicians and Paramedics	\$13.32	\$16.54

Exhibit 60. Public safety educational attainment

OCCUPATION	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training	CPS
Correctional Officers and Jailers	High school diploma or equivalent	None	Moderate-term	49.3%
Police and Sheriffs Patrol Officers	High school diploma or equivalent	None	Moderate-term	46.4%
Firefighters	Postsecondary nondegree award	None	Long-term	59.4%
Emergency Medical Technicians and Paramedics	Postsecondary nondegree award	None	None	66.6%
Public Safety Telecommunicators	High school diploma or equivalent	None	Moderate-term	54.0%
Private Detectives and Investigators	High school diploma or equivalent	Less than 5 years	Moderate-term	32.7%
Detectives and Criminal Investigators	High school diploma or equivalent	Less than 5 years	Moderate-term	32.0%
Miscellaneous First-Line Supervisors, Protective Service Workers	High school diploma or equivalent	Less than 5 years	None	37.8%
First-Line Supervisors of Correctional Officers	High school diploma or equivalent	Less than 5 years	None	42.4%
Transportation Security Screeners	High school diploma or equivalent	None	Short-term	46.7%

Exhibit 61. Top specialized skills in job postings for public safety (n = 313)

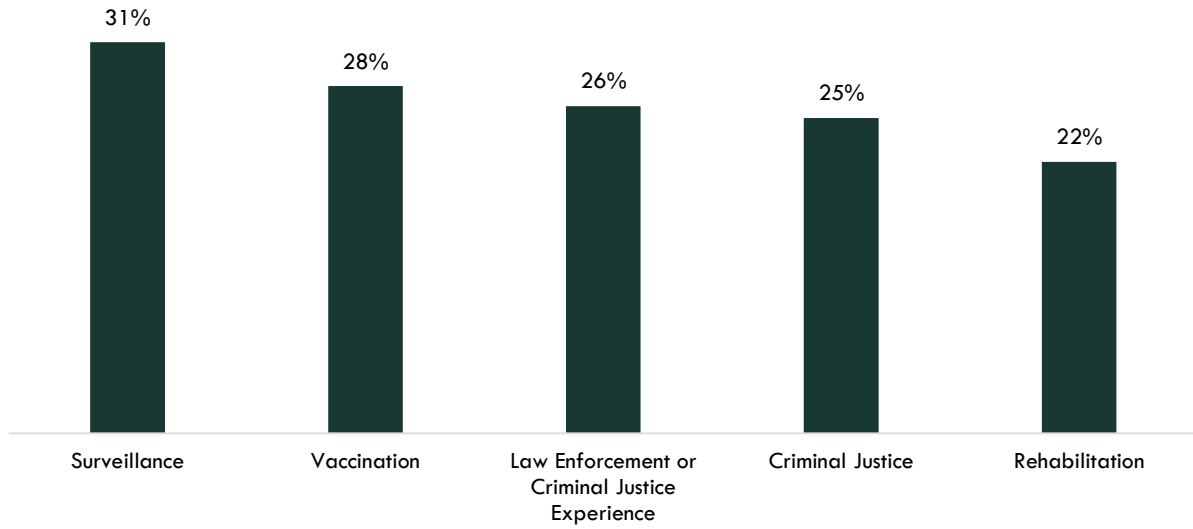


Exhibit 62. Top certifications in job postings for public safety (n = 296)

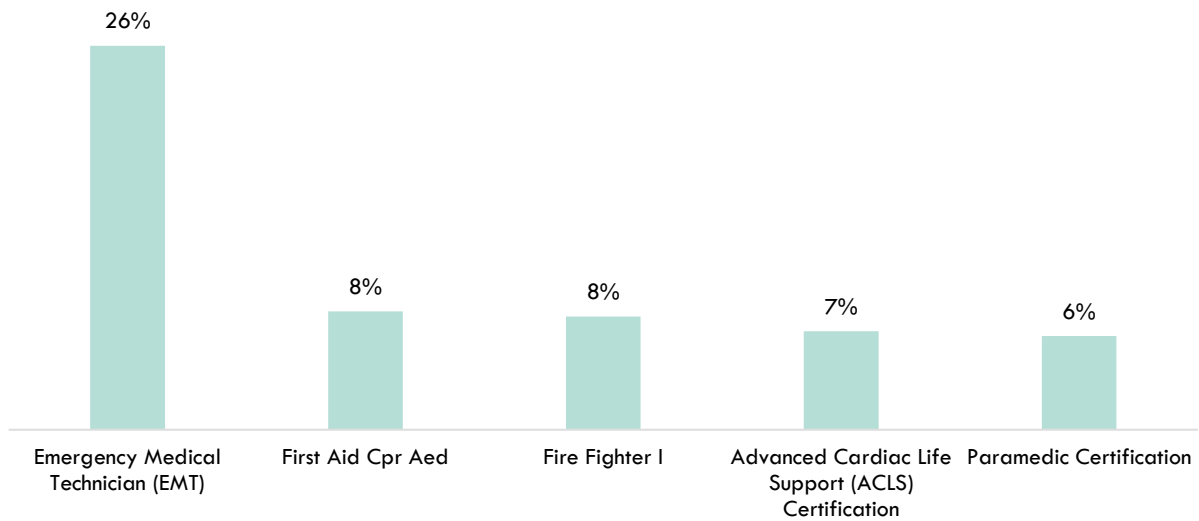
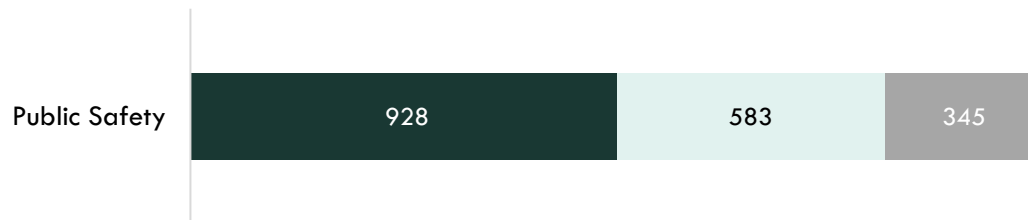


Exhibit 63. Public safety postsecondary supply

TOP/ CIP Code- Title	College	Associate Degree	Associate for Transfer Degree	Award 1 < 2 Academic Years	Certificate 16 < 30 Semester Units	Certificate 18 < 30 Semester Units	Certificate 30 < 60 Semester Units	Certificate 6 < 18 Semester Units	Subtotal
210510 - Corrections	Fresno City	3					5		8
	Reedley College	5			3	10			18
	Sequoias	3							3
	West Hills Coalinga	5							5
	West Hills Lemoore	10					3		13
210540 - Forensics, Evidence, and Investigation	Fresno City	2				3			5
210550 - Police Academy	Fresno City				0	28			28
	Sequoias						96		96
213300 - Fire Technology	Fresno City	9					1		10
	Porterville						4		4
	Sequoias	8					1		9
213310 - Wildland Fire Technology	Porterville							18	18
213350 - Fire Academy	Fresno City				7	16			24
	Sequoias							42	42
219900 - Other Public and Protective Services	Porterville	10							10
43.0102 - Corrections	San Joaquin Valley College-Visalia	181		1					182
43.0107 - Criminal Justice/Police Science	Institute of Technology	44							44
43.0109 - Security and Loss Prevention Services	UEI College-Fresno			63					63
TOTAL		281	0	64	11	57	110	60	583

Exhibit 64. Public safety annual demand and supply



RETAIL, HOSPITALITY & TOURISM

Exhibit 65. Retail, hospitality & tourism employment and occupational projections

OCCUPATION	2021 JOBS	2026 JOBS	5-YEAR CHANGE	5-YEAR % CHANGE	ANNUAL OPENINGS
Cooks, Restaurant	3,330	3,975	645	19%	643
First-Line Supervisors of Retail Sales Workers	5,575	5,654	79	1%	621
First-Line Supervisors of Food Preparation and Serving Workers	2,778	3,286	508	18%	543
Hairdressers, Hairstylists, and Cosmetologists	2,414	2,563	149	6%	300
Self-Enrichment Teachers	1,142	1,228	87	8%	150
Food Service Managers	1,120	1,209	90	8%	150
Exercise Trainers and Group Fitness Instructors	743	784	41	6%	125
Manicurists and Pedicurists	917	1,038	121	13%	125
First-Line Supervisors of Housekeeping and Janitorial Workers	662	746	83	13%	95
Chefs and Head Cooks	600	655	54	9%	90
First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers	594	613	18	3%	66
Musicians and Singers	513	522	8	2%	62
Barbers	402	451	49	12%	50
Photographers	381	418	37	10%	46
Skincare Specialists	253	289	37	15%	35
Producers and Directors	283	308	25	9%	30

Exhibit 66. Retail, hospitality & tourism employment wages

OCCUPATION	25TH PERCENTILE HOURLY WAGES	MEDIAN HOURLY
Producers and Directors	\$24.98	\$32.39
First-Line Supervisors of Housekeeping and Janitorial Workers	\$17.14	\$23.78
Exercise Trainers and Group Fitness Instructors	\$17.01	\$26.64
Musicians and Singers	\$15.85	\$20.00
First-Line Supervisors of Retail Sales Workers	\$15.08	\$19.71
Food Service Managers	\$15.01	\$19.26
First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers	\$14.87	\$22.83
Self-Enrichment Teachers	\$14.60	\$21.84
First-Line Supervisors of Food Preparation and Serving Workers	\$14.37	\$16.93
Photographers	\$13.54	\$23.25
Cooks, Restaurant	\$13.31	\$14.58
Chefs and Head Cooks	\$13.06	\$19.26
Skincare Specialists	\$13.01	\$14.21
Manicurists and Pedicurists	\$13.00	\$13.18
Hairdressers, Hairstylists, and Cosmetologists	\$11.13	\$14.81
Barbers	\$7.73	\$13.25

Exhibit 67. Retail, hospitality & tourism educational attainment

OCCUPATION	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training	CPS
Cooks, Restaurant	No formal educational credential	Less than 5 years	Moderate-term	24.3%
First-Line Supervisors of Retail Sales Workers	High school diploma or equivalent	Less than 5 years	None	38.8%
First-Line Supervisors of Food Preparation and Serving Workers	High school diploma or equivalent	Less than 5 years	None	36.7%
Hairdressers, Hairstylists, and Cosmetologists	Postsecondary nondegree award	None	None	43.0%
Self-Enrichment Teachers	High school diploma or equivalent	Less than 5 years	None	25.4%
Food Service Managers	High school diploma or equivalent	Less than 5 years	None	35.8%
Exercise Trainers and Group Fitness Instructors	High school diploma or equivalent	None	Short-term	28.6%
Manicurists and Pedicurists	Postsecondary nondegree award	None	None	23.5%
First-Line Supervisors of Housekeeping and Janitorial Workers	High school diploma or equivalent	Less than 5 years	None	31.0%
Chefs and Head Cooks	High school diploma or equivalent	5 years or more	None	35.8%
First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers	High school diploma or equivalent	Less than 5 years	None	31.0%
Musicians and Singers	No formal educational credential	None	Long-term	27.6%
Barbers	Postsecondary nondegree award	None	None	34.9%
Photographers	High school diploma or equivalent	None	Moderate-term	34.0%
Skincare Specialists	Postsecondary nondegree award	None	None	51.8%
Producers and Directors	Bachelor's degree	Less than 5 years	None	17.7%

Exhibit 68. Top specialized skills in job postings for retail, hospitality & tourism (n = 3,279)

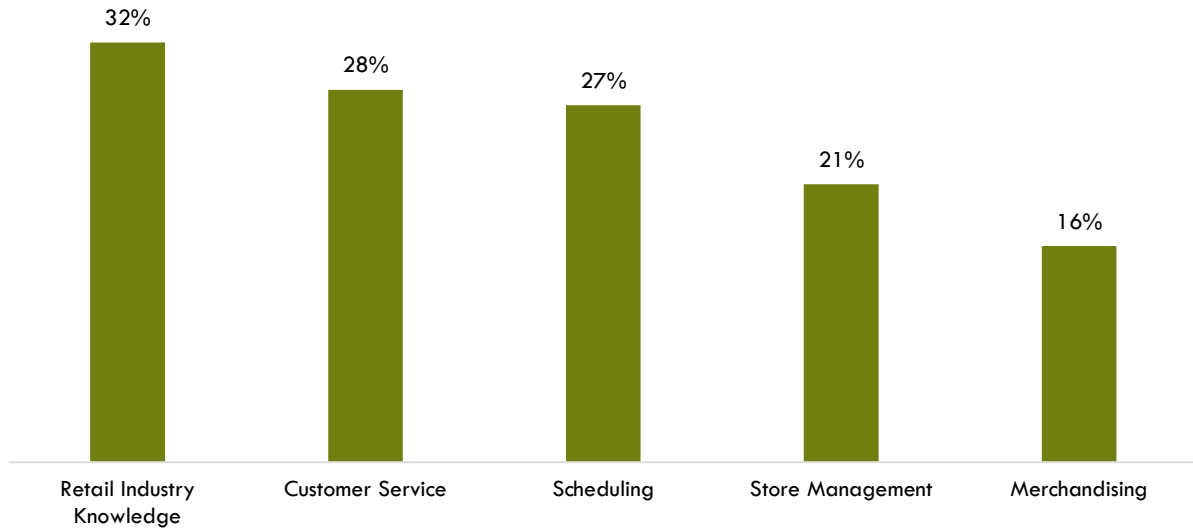


Exhibit 69. Top certifications in job postings for retail, hospitality & tourism (n = 1,275)

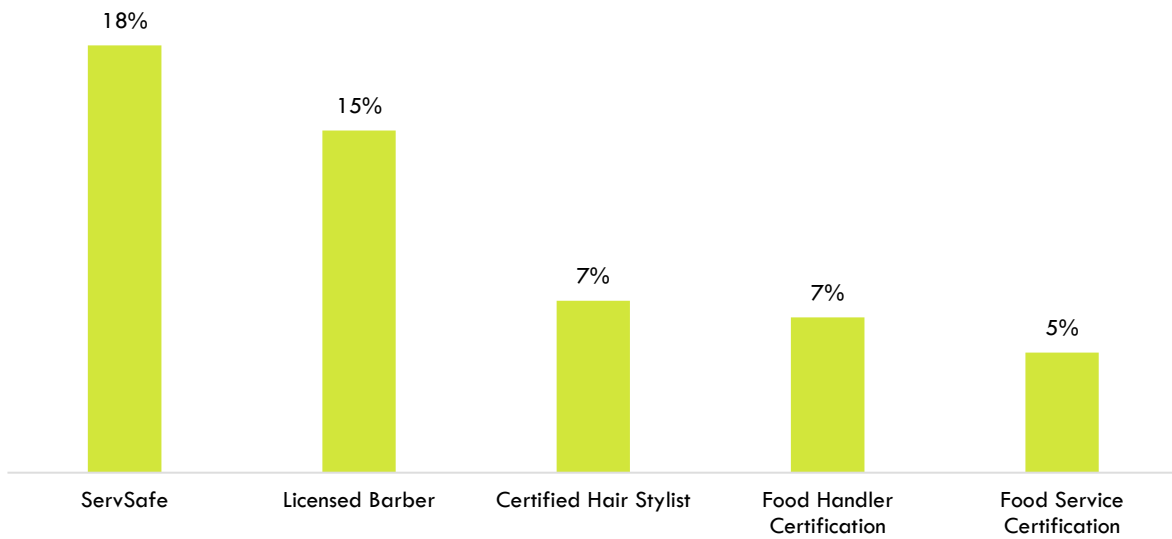


Exhibit 70. Retail, hospitality & tourism postsecondary supply

TOP/ CIP Code- Title	College	Associate Degree	Associate for Transfer Degree	Award < 1 Academic Year	Award 1 < 2 Academic Years	Certificate 12 < 18 Semester Units	Certificate 16 < 30 Semester Units	Certificate 18 < 30 Semester Units	Certificate 30 < 60 Semester Units	Certificate 6 < 18 Semester Units	Certificate 8 < 16 Semester Units	Subtotal
050650 - Retail Store Operations and Management	Fresno City	3							22			25
	West Hills Coalinga	1						1				2
	West Hills Lemoore	0				0	4			5		10
100500 - Commercial Music	Fresno City	2				3			3			8
	Sequoias									4		4
100600 - Technical Theater	Fresno City	2										2
101200 - Applied Photography	Fresno City	6				12	1		6		6	30
12.0401 - Cosmetology/Cos metologist, General	Estes Institute of Cosmetology Arts and Science				26							26
	Institute of Technology				0							0
	Lawrence & Company College of Cosmetology				43							43
	Lyle's College of Beauty				19							19
	Milan Institute of Cosmetology-Visalia (CLOSED)				75							75
	Milan Institute-Fresno				56							56
	Milan Institute- Visalia				0							0
	Paul Mitchell the School-Fresno				122							122
	Princess Institute of Beauty				7							7
	Institute of Technology				0							0
12.0402 - Barbering/Barber	Lawrence & Company College of Cosmetology				1							1
	Milan Institute-Fresno				23							23
	Paul Mitchell the School-Fresno				6							6
	Lawrence & Company College of Cosmetology			7								7
12.0409 - Aesthetician/Esthe	Lawrence & Company College of Cosmetology			7							7	

TOP/ CIP Code- Title	College	Associate Degree	Associate for Transfer Degree	Award < 1 Academic Year	Award 1 < 2 Academic Years	Certificate 12 < 18 Semester Units	Certificate 16 < 30 Semester Units	Certificate 18 < 30 Semester Units	Certificate 30 < 60 Semester Units	Certificate 6 < 18 Semester Units	Certificate 8 < 16 Semester Units	Subtotal
Esthetician and Skin Care Specialist	Lyle's College of Beauty			0								0
	Milan Institute-Fresno			98								98
	Princess Institute of Beauty			1								1
12.0410 - Nail Technician/Specialist and Manicurist	Estes Institute of Cosmetology Arts and Science			18								18
	Lawrence & Company College of Cosmetology			6								6
	Lyle's College of Beauty			14								14
	Princess Institute of Beauty			1								1
12.0413 - Cosmetology, Barber/Styling, and Nail Instructor	Lyle's College of Beauty			0								0
12.0501 - Baking and Pastry Arts/Baker/Pastry Chef	Institute of Technology				43							43
12.0503 - Culinary Arts/Chef Training	Institute of Technology	49		13	9							71
12.9999 - Personal and Culinary Services, Other	Institute of Technology				28							28
130300 - Fashion	Sequoias									0		0
130310 - Fashion Design	Sequoias	5				0	1			0		7
130320 - Fashion Merchandising	Fresno City	3							2			5
	Sequoias	4				0	1			1		5
130600 - Nutrition, Foods, and Culinary Arts	Fresno City	1	3						0			5
130710 - Restaurant and Food Services and Management	Fresno City	2							2			4
	West Hills Lemoore					2	6			26		34
130720 - Lodging Management	West Hills Lemoore							1		2		2

TOP/ CIP Code- Title	College	Associate Degree	Associate for Transfer Degree	Award < 1 Academic Year	Award 1 < 2 Academic Years	Certificate 12 < 18 Semester Units	Certificate 16 < 30 Semester Units	Certificate 18 < 30 Semester Units	Certificate 30 < 60 Semester Units	Certificate 6 < 18 Semester Units	Certificate 8 < 16 Semester Units	Subtotal
130730 - Resort and Club Management	West Hills Lemoore	3										3
300700 - Cosmetology and Barbering	Sequoias						0	0				1
TOTAL		80	3	160	458	15	4	14	35	38	6	813

Exhibit 71. Retail, hospitality & tourism annual demand and supply



APPENDIX A: SUPPLY FOR ADMINISTRATION OF JUSTICE

TOP code and title: 2105.00 – Administration of Justice applies to both the business and public safety sector. The occupations with 25 or more annual openings for public safety sector do not fully cover the Administration of Justice TOP Code. In addition, the occupations related to this TOP code typically require an academy certification.

TOP/ CIP Code- Title	College	Associate Degree	Associate for Transfer Degree	Certificate 16 < 30 Semester Units	Certificate 18 < 30 Semester Units	Certificate 30 < 60 Semester Units	Subtotal
210500 - Administration of Justice	Clovis	1	34	0	1		37
	Fresno City	13	133	2	1	23	173
	Porterville	1	46			12	58
	Reedley College	6	66	10	19		101
	Sequoias	11	86				97
	West Hills Coalinga	2	19				21
	West Hills Lemoore	23	43				67
TOTAL		57	428	13	22	35	554

APPENDIX B: 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. (EMSI). EMSI occupational employment data are based on final EMSI industry data and final EMSI 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 EMSI 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 .
Labor Force, Employment and Unemployment Estimates	California Employment Development Department, Labor Market Information Division: labormarketinfo.edd.ca.gov .
Job Posting and Skills Data	Burning Glass: burning-glass.com/ .
Additional Education Requirements/ Employer Preferences	The O*NET Job Zone database includes over 900 occupations 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. (EMSI) formula that includes historical employment and economic indicators along with national, state, and local trends.

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.