

Labor Market Analysis for Program Review:

Industrial and Manufacturing
Engineering Technicians in Greater
Sacramento

Prepared by the North Far North Center of Excellence
February 2026



POWERED BY



CENTER OF EXCELLENCE
FOR LABOR MARKET RESEARCH
NORTH FAR NORTH

Summary

The North Far North Center of Excellence for Labor Market Research (NFN COE) prepared this report to provide an analysis of occupational demand and educational supply for selected occupations employed across the 22-county North Far North region. This report aims to determine if demand in the local labor market is unmet by the supply from existing community college programs and other postsecondary training providers, with a primary focus on training that leads to living wage jobs in middle-skilled occupations.¹

Key Findings

- **Industrial and manufacturing engineering technician jobs are projected to grow at a faster rate in Greater Sacramento compared to California.** Industrial and manufacturing engineering technician jobs are projected to grow by 9% in Greater Sacramento by 2029, compared to 3% in California.
- **Entry-level wages for industrial and manufacturing engineering technicians exceed the living wage threshold for a single working adult.** Entry-level wages range between \$24.14 to \$44.94 per hour, which exceeds the living wage for a working family in Sierra college's service district of \$23.92 per hour.
- **While a majority of job openings are for industrial production managers, which has typically entry-level education of a bachelor's degree, there are multiple educational pathways into this occupation.** Sixty-six percent of the job openings are for industrial production managers; 34% of incumbent industrial production managers have a bachelor's degree, while 31% have education consistent with community college offerings at their highest level of educational attainment.
- **A supply gap exists for industrial and manufacturing engineering technicians.** There are 140 projected job openings in the Greater Sacramento subregion and only an average of 33 awards conferred per year, with 26 of these awards coming from community college programs.

Recommendation

Based on the findings, the North Far North COE recommends that community colleges **proceed** when developing new industrial and manufacturing engineering technician programs. Key considerations include:

- All occupations in industrial and manufacturing engineering have entry-level wages that exceed the living wage.
- A significant supply gap exists. There are 140 projected job openings in the Greater Sacramento subregion and only an average of 33 awards conferred per year, with 26 of these awards coming from community college programs.
- Programs preparing students for careers as Industrial Production Managers should align curriculum with employer demand and the range of educational backgrounds observed

¹ Pursuant to California Education Code §78015, labor market information (LMI) is required for all new career education certificate and degree program proposals, and the North Far North Regional Consortium (NFNRC) requires LMI to come from the NFN COE. This report should serve to satisfy those requirements.

among incumbents. This may include associate degree programs, certificates, and clearly defined transfer pathways for students who choose to pursue a bachelor's degree, recognizing that multiple educational routes lead into this occupation.

Introduction

The North Far North Center of Excellence (COE) was asked to provide labor market data to support a proposed new career education program or modifications to existing programs at a regional community college (see Appendix A for methodology and data sources).

This report focuses on the following Standard Occupational Classification (SOC) occupations and codes:

- Industrial Production Managers (11-3051)
- Industrial Engineering Technologists and Technicians (17-3026)
- Calibration Technologists and Technicians (17-3028)
- Engineering Technologists and Technicians, Except Drafters, All Other (17-3029)

A review of related programs revealed the following Taxonomy of Programs (TOP) title(s) and code(s) are appropriate for inclusion in this report:

- Manufacturing and industrial technology (0956.00)

The corresponding Classification of Instructional Program (CIP) title(s) and code(s) are:

- Industrial Technology/Technician (15.0612)
- Manufacturing engineering technology/technician (15.0613)
- Industrial Production Technologies/Technicians, Other (15.0699)

Occupational Demand

Exhibit 1 summarizes the five-year projected job growth for the targeted occupational groups in the Greater Sacramento subregion, the 22-county North Far North region, and California.²

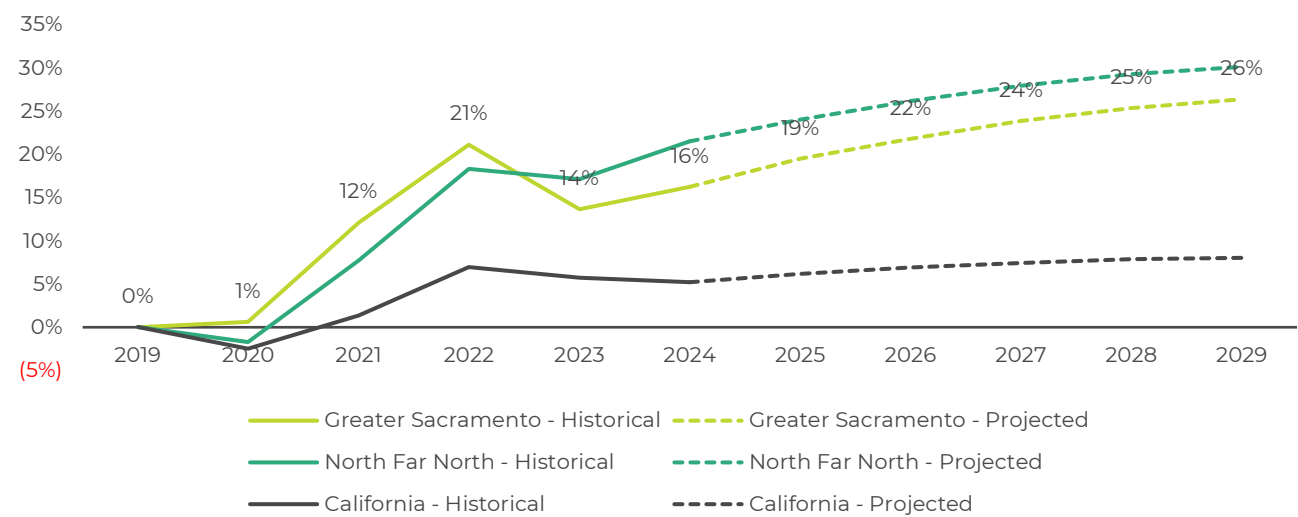
Exhibit 1. Current employment and projected occupational demand, 2024-2029

Occupational Group	2024 Jobs	2024-2029 Change	2024-2029 % Change	2024-2029 Annual Openings
Industrial Production Managers	1,041	86	8%	93
Industrial Engineering Technologists and Technicians	109	16	15%	13
Calibration Technologists and Technicians	47	7	15%	5
Engineering Technologists and Technicians, Except Drafters, All Other	283	20	7%	29
Greater Sacramento	1,480	129	9%	140
Industrial Production Managers	1,494	107	7%	130
Industrial Engineering Technologists and Technicians	127	20	16%	16
Calibration Technologists and Technicians	165	5	3%	15
Engineering Technologists and Technicians, Except Drafters, All Other	342	19	6%	34
North Far North	2,128	151	7%	195
Industrial Production Managers	26,178	464	2%	2,001
Industrial Engineering Technologists and Technicians	4,322	309	7%	440
Calibration Technologists and Technicians	1,379	62	4%	134
Engineering Technologists and Technicians, Except Drafters, All Other	8,580	249	3%	788
California	40,459	1,084	3%	3,363

² The 22-county North Far North is a dual region. It is represented by the North (Greater Sacramento) subregion that covers seven counties, including El Dorado, Nevada, Placer, Sacramento, Sutter, Yolo, and Yuba, and the 15-county Far North subregion which includes Butte, Colusa, Del Norte, Glenn, Humboldt, Lake, Lassen, Mendocino, Modoc, Plumas, Shasta, Sierra, Siskiyou, Tehama, and Trinity.

Exhibit 2 compares historical and projected annual change in employment for the period 2019 to 2029 with the base number of jobs in 2019 for Greater Sacramento, the 22-county North Far North region, and California.

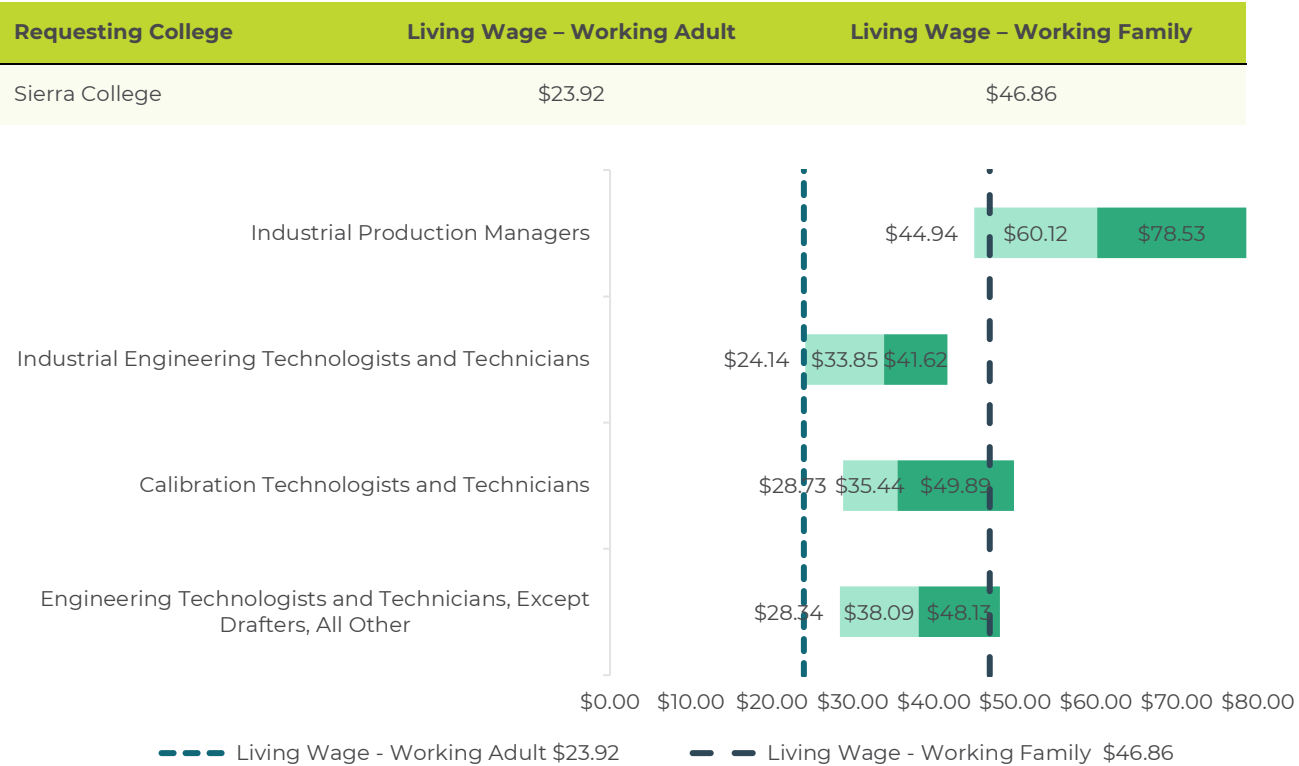
Exhibit 2. Changes in employment, 2019-2029



Earnings

Exhibit 3 compares the percentile hourly earnings for the selected occupations to the living wage for a single working adult and a working family residing in the county of the community college district that requested this report.^{3,4} Earnings data includes wages from employed and self-employed workers. Also, it's important to note that living wage thresholds vary by county, and in the Greater Sacramento subregion, range from \$17 to \$24 per hour for a single working adult.

Exhibit 3. Hourly earnings compared to the community college district's living wage



³ A “living wage” is defined as the level of income one working adult with no children must earn to meet basic needs, including food, housing, transportation, healthcare, taxes, and other miscellaneous basic needs. Please note that the 25th-percentile and 75th-percentile hourly wages are used as proxies for entry-level and experienced-level wages.

⁴ A “working family” is defined as one working adult and one infant (between the ages of 0 and 2 years).

Job Postings

Analysis of online job postings can offer additional insights into recent labor market changes not reflected in historical trends. However, it is important to note that job postings do not equate to actual labor market demand, which is based on projected annual job openings.

There are several limitations to interpreting online job postings. Employers may repost the same position multiple times to attract more applicants, or job postings may remain active even if the position is no longer being filled. Additionally, a single job posting can be used to hire for multiple openings, and not all job opportunities are advertised online. Despite these limitations, job posting analyses can be valuable for guiding community college curriculum development and identifying potential employers for targeted experiential learning opportunities.

The North Far North COE identified 414 online job postings for the selected occupations across the Greater Sacramento subregion. Job posting data comes from and represents unique advertisements posted online during the last 12 months, from January 2025 to December 2025.

Exhibit 4. Job postings by occupation

Occupation	Number of Job Postings	Share of Postings	Median Advertised Salary
Industrial Production Managers	211	51%	\$50.09
Industrial Engineering Technologists and Technicians	131	32%	\$24.00
Calibration Technologists and Technicians	25	6%	\$28.18
Engineering Technologists and Technicians, Except Drafters, All Other	47	11%	\$27.94
Total	414	100%	\$35.08

Top employers

Exhibit 5 shows the employers with the most job postings for the selected occupations across Greater Sacramento.

Exhibit 5. Employers with the most job postings

Employer	Number of Job Postings
Siemens	21
Keysight	9
Teledyne Technologies	8
Danaher	7

Employer	Number of Job Postings
Nidec	7
Rinker Materials	6
Broadridge Financial Solutions	6
Primo Water	5
Keurig Dr Pepper	5
Hensel Phelps	5

Top titles

Exhibit 6 shows the job titles with the most job postings for the selected occupations across Greater Sacramento.

Exhibit 6. Job titles with the most job postings

Job title	Number of Job Postings
Production Technicians	27
Quality Assurance Managers	19
Plant Managers	19
Quality Managers	17
Production Managers	16
Quality Control Managers	16
Construction Equipment Technicians	13
Calibration Technicians	12
Test Technicians	11
Manufacturing Technicians	8

Skills and qualifications

Exhibit 7 shows the most requested skills in job postings by occupation in Greater Sacramento.⁵

⁵ Specialized skills are those primarily required to perform specific tasks in an occupation. Common skills are typically related to employability; these are skills that are prevalent across many occupations and usually include a mix of interpersonal attributes and soft skills. Software skills are specific to any software tool or programming component used to accomplish tasks in a job.

Exhibit 7. Most requested in-demand skills in job postings

Specialized Skills	Common or Employability Skills	Software and Technology Skills
• Continuous Improvement Process • Quality Management • Auditing • Lifting Ability • Lean Manufacturing • Packaging and Labeling • Key Performance Indicators (KPIs) • Project Management • Good Manufacturing Practices • Automation	• Communication • Management • Operations • Quality Assurance • Problem Solving • Detail Oriented • Planning • Time Management • Computer Literacy • Writing	• Microsoft Office • SAP Applications • Spreadsheets • Operational Databases • Productivity Software • AutoCAD • Python • Microsoft Project • Inventory Control Systems

Exhibit 8 shows the employer-preferred minimum level of education in job postings related to the selected occupations in Greater Sacramento. Amongst those postings requiring a Bachelor’s degree, 95% of job postings were for Industrial Production managers.

Exhibit 8. Employer-preferred education levels for the studied occupations

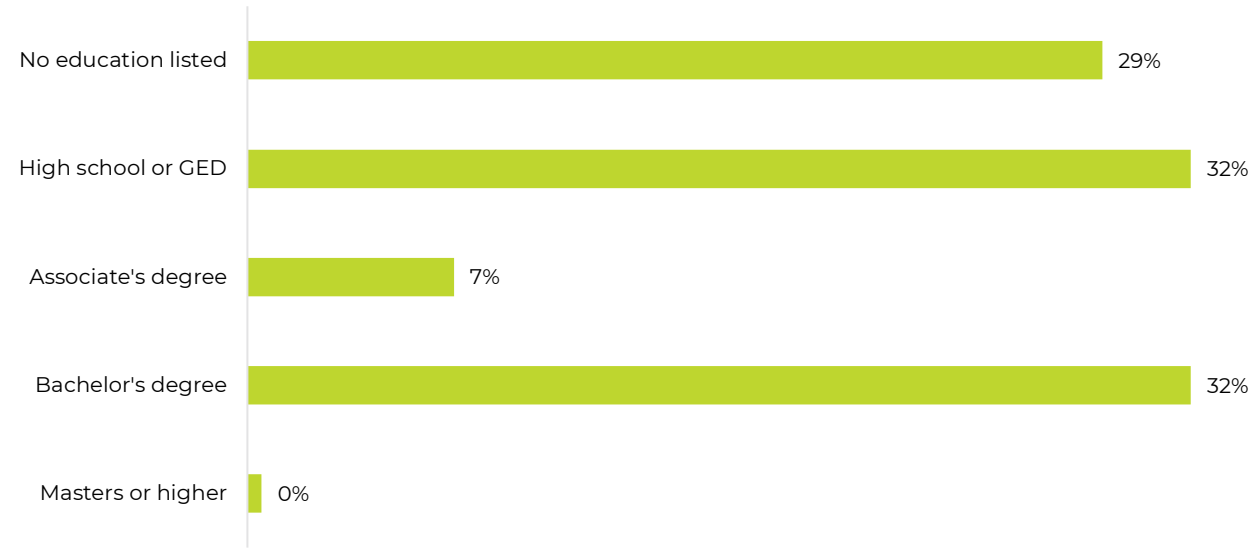
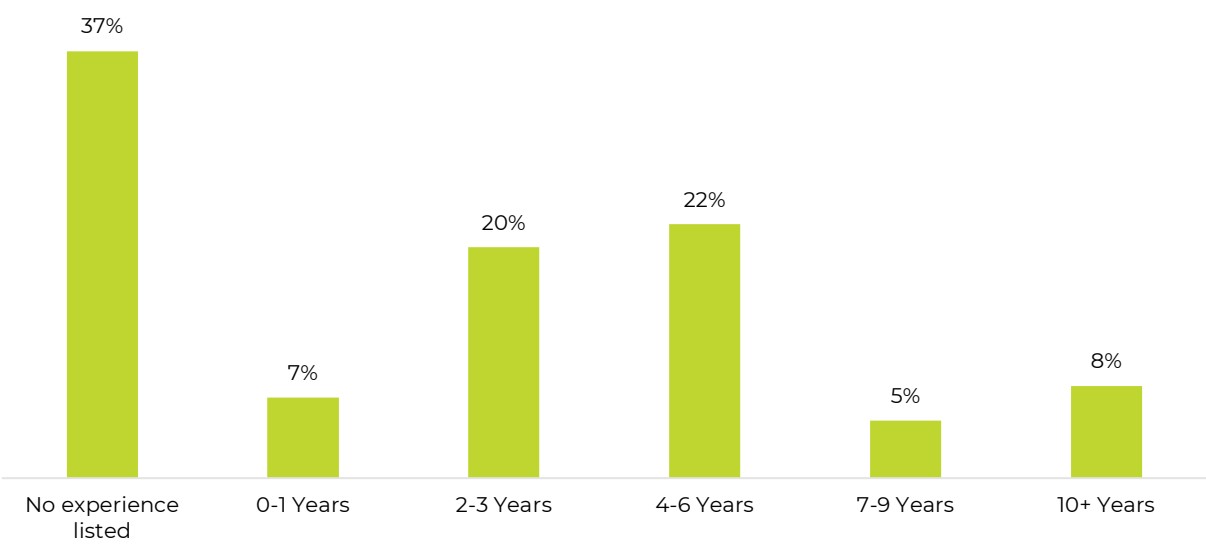


Exhibit 9 shows the employer-preferred minimum level of experience in job postings related to the selected occupations in Greater Sacramento.

Exhibit 9. Employer-preferred experience levels for the studied occupations



Education and Training Requirements

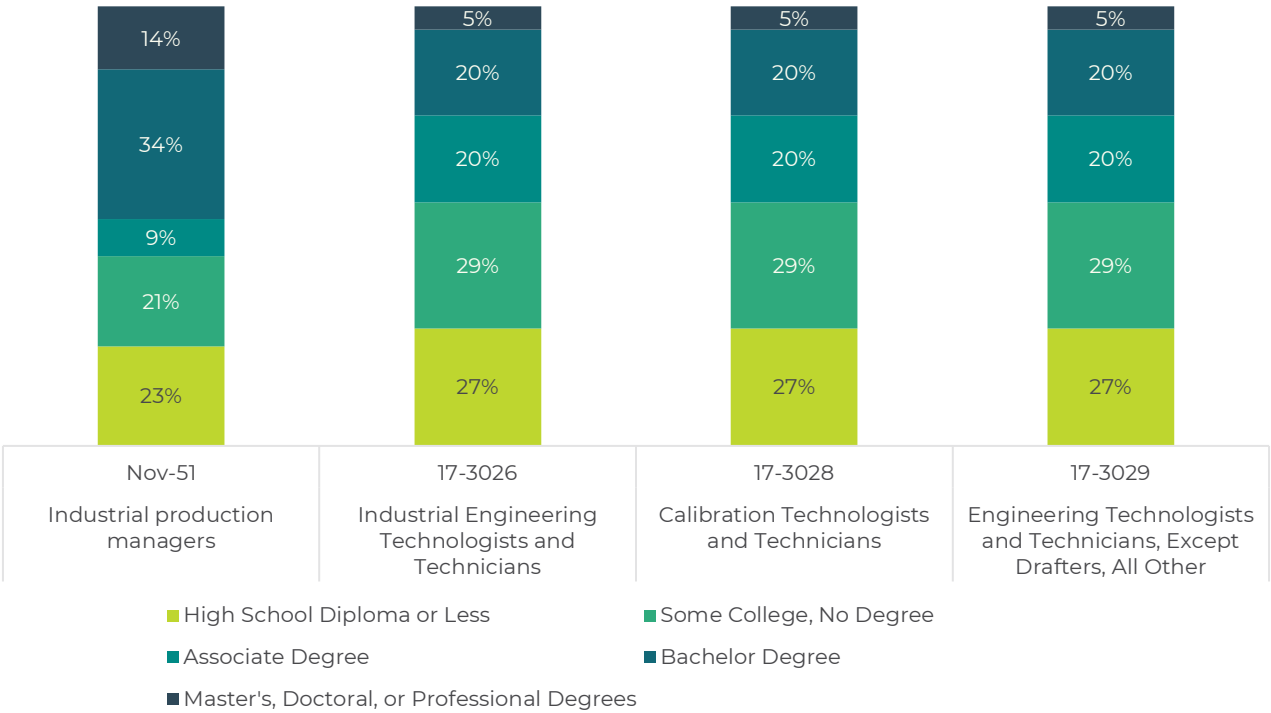
The U.S. Bureau of Labor Statistics (BLS) assigns each occupation a typical entry-level education, related work experience, and on-the-job training category in its projection data. Exhibit 10 summarizes these requirements by occupation.

Exhibit 10. Typical entry-level job requirements for the studied occupations

Occupation	Entry-Level Education	Work Experience	On-The-Job Training
Industrial Production Managers	Bachelor's degree	5 years or more	None
Industrial Engineering Technologists and Technicians	Associate's degree	None	None
Calibration Technologists and Technicians	Associate's degree	None	None
Engineering Technologists and Technicians, Except Drafters, All Other	Associate's degree	None	None

The U.S. Census Bureau tracks the highest education level attained by workers in all occupations. Exhibit 11 presents this data for the current U.S. workforce in the studied occupations.

Exhibit 11. Educational attainment for workers 25 years and older by occupation, 2021-22



Educational Supply

Educational supply for an occupation can be estimated by analyzing the number of awards issued in related Taxonomy of Programs (TOP) or Classification of Instructional Programs (CIP) codes.

Community college supply

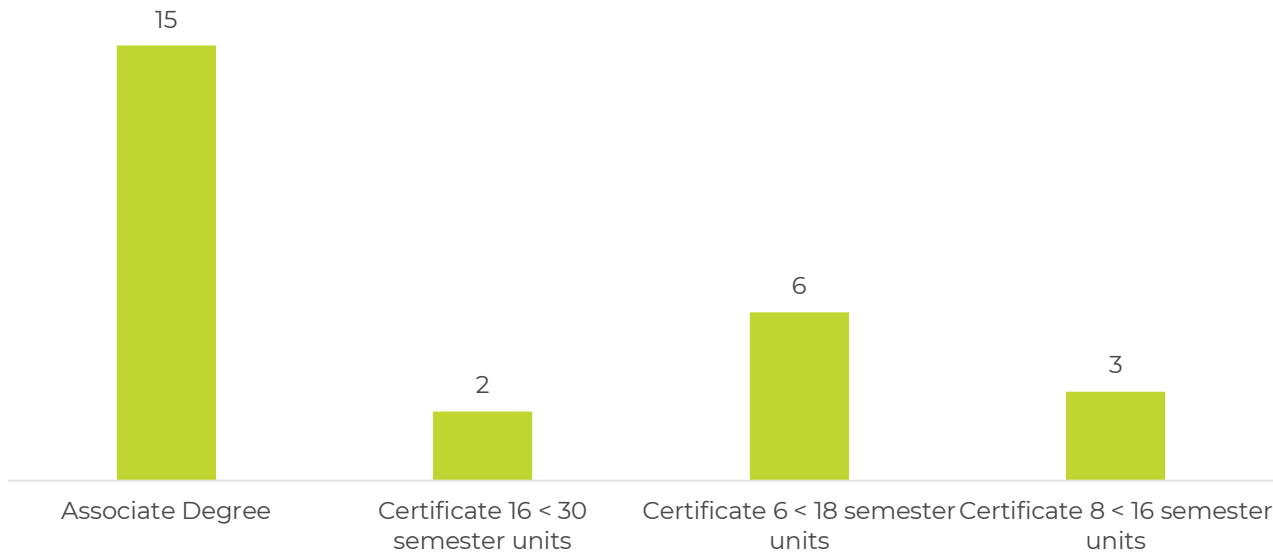
Exhibits 12 and 13 summarize the three-year average of awards (certificates and degrees) conferred by the Greater Sacramento community college programs relevant to the occupations studied.

Exhibit 12. Average annual community college awards by TOP program

TOP Program and Code	College	2022-23 Annual Awards	2023-24 Annual Awards	2024-25 Annual Awards	Three-Year Average Awards
Manufacturing and Industrial Technology (0956.00)	Yuba	1	8	6	5
	Sierra	17	9	27	18
	Sacramento	1	1	7	3
Totals		19	18	40	26

Note: Values in the table are rounded to the nearest whole number. However, subtotals and totals are calculated using unrounded values.

Exhibit 13. Average annual community college awards by award type and program area



Other postsecondary supply

Exhibit 14 summarizes the three-year average of awards conferred by postsecondary institutions outside of the community college system and located in Greater Sacramento.

Exhibit 14. Average annual community college awards by award type and program area

CIP Program and Code	Institution	Award Level	2021-2024 Average Annual Awards
Manufacturing Engineering Technology/Technician (15.0613)	Charles A Jones	Certificate	7
Totals			7

Conclusion and Recommendations

Data insights

Demand— Industrial and manufacturing engineering technician jobs are projected to grow at a faster rate in Greater Sacramento compared to California. Industrial and manufacturing engineering technician jobs are projected to grow by 9% in Greater Sacramento by 2029, compared to 3% in California.

Living Wage— Entry-level wages for industrial and manufacturing engineering technicians exceed the living wage threshold for a single working adult. Entry-level wages range between \$24.14 to \$44.94 per hour, which exceeds the living wage for a working family in Sierra college's service district of \$23.92 per hour.

Education— While a majority of job openings are for industrial production managers, which has typically entry-level education of a bachelor's degree, there are multiple educational pathways into this occupation. Sixty-six percent of the job openings are for industrial production managers; 34% of incumbent industrial production managers have a bachelor's degree, while 31% have education consistent with community college offerings at their highest level of educational attainment.

Supply Gap— A supply gap exists for industrial and manufacturing engineering technicians. There are 140 projected job openings in the Greater Sacramento subregion and only an average of 33 awards conferred per year, with 26 of these awards coming from community college programs.

Recommendation

Based on the current analysis, the North Far North COE recommends that community colleges **proceed in** creating new programs related to industrial and manufacturing engineering.

New Program Recommendation		
Proceed	Use Caution	Do Not Proceed
☒	☐	☐

Support for Program Modification	
Yes	No
☒	☐

Appendix A. Methodology and Data Sources

Labor market and educational supply data compiled in this report derive from a variety of sources. Occupations were identified by using the Center of Excellence TOP-to-CIP-to-SOC Crosswalk: <http://coeccc.net/>. This report's findings were primarily determined with labor market and educational supply data from the Bureau of Labor Statistics (BLS), the economic modeling firm and job postings aggregator Lightcast, and the California Community Colleges Chancellor's Office.

Data Sources

The following table summarizes the data sources used in this study.

Data Type	Source
Labor Market Information and Job Postings	Traditional labor market information data is sourced from Lightcast, a labor market analytics firm. Lightcast's 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 employee classes of worker) and the American Community Survey (self-employed and extended proprietors). For more information, see https://lightcast.io/ .
Living Wage	The living wage is derived from the Insight Center's California Family Needs Calculator, which measures the income necessary for an individual or family to afford basic expenses. The data assesses the cost of housing, food, childcare, health care, transportation, and taxes. The Chancellor's Office uses wage data to calculate the percentage of students who attained a regional living wage. For more information, visit https://selfsufficiencystandard.org/California/ .
Typical Education Level, On-the-job Training, and Educational Attainment	The Bureau of Labor Statistics (BLS) provides information about education and training requirements for hundreds of occupations. BLS uses a system to assign categories for entry-level education, work experience in a related occupation, and typical on-the-job training to each occupation for which BLS publishes projections data. For more information, visit https://www.bls.gov/emp/documentation/education/tech.htm .
Emerging Occupation Descriptions, Additional Education Requirements, and Employer Preferences	The O*NET database includes information on skills, abilities, knowledge areas, work activities, and interests associated with occupations. For more information, visit https://www.onetonline.org/help/online/ .
Labor Force, Employment and Unemployment Estimates	The California Employment Development Department's Labor Market Information Division is a source of labor market and workforce data. For more information, visit labormarketinfo.edd.ca.gov .
Educational Supply	The CCCCO Management Information Systems (MIS) Data Mart provides information about students, courses, student services, outcomes, and faculty and staff. For more information, visit https://datamart.cccco.edu. The Chancellor's Office Curriculum Inventory System (COCI) collects data on courses and programs offered by the California Community Colleges. For more information, visit https://coci2.ccctechcenter.org/. The National Center for Education Statistics (NCES) Integrated Postsecondary Education Data System (IPEDS) collects data from providers of postsecondary education, including the number of postsecondary awards earned (completions). For more information, visit https://nces.ed.gov/ipeds/use-the-data/survey-components/7/completions.
Student Metrics and Demographics	DataVista, a statewide data system supported by the Chancellor's Office and hosted by Cal-PASS Plus, provides data on progress, success, employment, and earnings outcomes for California community college students. For more information, visit https://datavista.cccco.edu/ .

Living Wage

Beginning in October 2024, to determine if an occupation meets the living wage threshold, the NFN COE compared the 25th percentile hourly wage of an occupation in the subregion to the living wage for a single adult (no dependents) living in the county where the requesting community college district was located.

This change aligned with the Chancellor’s Office methodology for calculating the share of students earning a living wage after leaving the California Community College system, as reported in the Data Vista living wage metric (802S). For details, see the *DataVista Metric Definition Dictionary*.

The NFN COE updated this practice as needed to remain consistent with the Chancellor’s Office. The table below summarizes hourly living wages by community college district and county.

2024 Single Adult Living Wage			
Community College District	County	Hourly	Annual
Butte-Glenn	Butte	\$16.77	\$35,416
Feather River	Plumas	\$15.11	\$31,909
Lake Tahoe	El Dorado	\$22.11	\$46,703
Lassen	Lassen	\$14.81	\$31,274
Los Rios	Sacramento	\$21.17	\$44,709
Mendocino-Lake	Mendocino	\$17.06	\$36,039
Redwoods	Humboldt	\$16.59	\$35,046
Shasta-Tehama-Trinity Joint	Shasta	\$16.99	\$35,874
Sierra Joint	Placer	\$23.92	\$50,519
Siskiyou Joint	Siskiyou	\$14.51	\$30,639
Yuba	Sutter	\$17.08	\$36,074
California Minimum Wages			
All industries, except fast food and healthcare (Effective January 2026)		\$16.90	\$35,152
Fast food (Effective April 2024)		\$20.00	\$41,600
Healthcare (Effective July 2025)		\$18.63-\$24.00, depending on facility type	\$38,750-\$49,920

Sources: University of Washington Self Sufficiency Standard and State of California Department of Industrial Relations, “Minimum Wage,” https://www.dir.ca.gov/dlse/minimum_wage.htm

For more information, contact:

The North Far North Center of
Excellence for Labor Market Research

Anna Hoehenrieder, Research Analyst
anna.hoehenrieder@losrios.edu

Ebony J. Benzing, Co-Director
ebony.benzing@losrios.edu

**Accessibility:**

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.

Funding Acknowledgement:

This publication was supported through Strong Workforce Program funding from the North Far North Regional Consortium and the California Community Colleges Chancellor's Office Economic and Workforce Development Grant.

Important Disclaimer:

All representations included in this report have been produced from primary research and/or secondary review of publicly and/or privately available data and/or research reports. Efforts have been made to qualify and validate the accuracy of the data and the reported findings; however, neither the Centers of Excellence, the COE host district, nor the California Community Colleges Chancellor's Office is responsible for applications or decisions made by recipient community colleges, or their representatives, based upon components or recommendations contained in this study.