

Program Endorsement Brief: 0934.80 – Laser and Optical Technology Laser Technology (AS; Certificate)

Los Angeles/Orange County Center of Excellence, December 2021

Summary Analysis

Program Endorsement:	Endorsed: All Criteria Met	<input checked="" type="checkbox"/>	Endorsed: Some Criteria Met	<input type="checkbox"/>	Not Endorsed	<input type="checkbox"/>
Program Endorsement Criteria						
Supply Gap:	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>		
Living Wage: (Entry-Level, 25 th)	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>		
Education:	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>		
Emerging Occupation(s)						
Yes		<input checked="" type="checkbox"/>	No		<input type="checkbox"/>	

The Los Angeles/Orange County Center of Excellence for Labor Market Research (COE) prepared this report to provide Los Angeles/Orange County regional labor market supply and demand data related to one middle-skill occupation: *photonics technicians* (17-3029.08). Middle-skill occupations typically require some postsecondary education, but less than a bachelor's degree.¹ This report is intended to help determine whether there is demand in the local labor market that is not being met by the supply from community college programs that align with the relevant occupations.

Based on the available data, there appears to be a supply gap for middle-skill occupations related to laser technology in the region. Furthermore, typical entry-level wages exceed the self-sufficiency standard wage in both Los Angeles and Orange counties, and the typical entry-level education level is an associate degree. **Therefore, due to all the criteria being met, the COE endorses this proposed program.** Detailed reasons include:

Demand:

- **Supply Gap Criteria** – Over the next five years, there is projected to be **326 jobs available annually** in the region due to retirements and workers leaving the field, **which is less than the 16 awards conferred annually** by educational institutions in the region.
 - However, the *calibration technologists and technicians and engineering technologists and technicians, except drafters, all other* (17-3098) SOC code includes two emerging occupations, including *photonics technicians* (17-3029.08).

¹ The COE classifies middle-skill jobs as the following:

- All occupations that require an educational requirement of some college, associate degree or apprenticeship;
- All occupations that require a bachelor's degree, but also have more than one-third of their existing labor force with an educational attainment of some college or associate degree; or
- All occupations that require a high school diploma or equivalent or no formal education, but also require short- to long-term on-the-job training where multiple community colleges have existing programs.

Since the SOC code does not solely represent *photonics technicians*, **the number of annual job openings is likely overstated.**

- Over the past 12 months, there were **157 online job postings related to middle-skill laser technology occupations**. The highest number of job postings were for laser technicians, optical technicians, optical laboratory technicians, doctor's assistants/optical technicians, and surgical laser technicians.
- **Living Wage Criteria** – Within Los Angeles County, **typical entry-level hourly wages** for *calibration technologists and technicians and engineering technologists and technicians, except drafters, all other* are **\$23.19, which is higher than the self-sufficiency standard** hourly wage (living wage) for one adult in the region (\$18.10 in Los Angeles County).²
- **Educational Criteria** – The Bureau of Labor Statistics (BLS) lists an **associate degree** as the **typical entry-level education for engineering technologists and technicians, except drafters, all other**.
 - Furthermore, the national-level educational attainment data indicates **50.8% of workers in the field have completed some college or an associate degree.**

Supply:

- There is **1 community college** in the LA/OC region that issues awards related to laser and optical technology, conferring an average of **16 awards annually** between 2017 and 2020.
- Currently, there are **no non-community college institutions** in the LA/OC region that have conferred awards for laser and optical technology in the past three years.

Occupational Demand

Exhibit 1 shows the five-year occupational demand projections for middle-skill occupations related to laser technology. In Los Angeles/Orange County, the number of jobs related to these occupations is projected to decrease by 1% through 2025. However, there will be more than 300 job openings per year through 2025 due to retirements and workers leaving the field. It is important to note that the *calibration technologists and technicians and engineering technologists and technicians, except drafters, all other* (17-3098) SOC code includes two emerging technician occupations and not solely photonics technicians. Therefore, the data in Exhibit 1 is likely overstated.

This report includes employment projection data by Emsi which uses EDD information. 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. To the extent that a recession or labor shock, such as the economic effects of COVID-19, can cause long-term structural change, it may impact the projections. At this time, it is not possible to quantify the full impact of COVID-19 on projections of industry and

² Self-Sufficiency Standard wage data was pulled from The Self-Sufficiency Standard Tool for California on 12/1/2021. For more information, visit: <http://selfsufficiencystandard.org/california>.

occupational employment. Therefore, the projections included in this report do not take the full impacts of COVID-19 into account.

Exhibit 1: Occupational demand in Los Angeles and Orange Counties³

Geography	2020 Jobs	2025 Jobs	2020-2025 Change	2020-2025 % Change	Annual Openings
Los Angeles	2,579	2,533	(46)	(2%)	215
Orange	1,294	1,309	16	1%	111
Total	3,873	3,843	(30)	(1%)	326

Wages

The labor market endorsement in this report considers the entry-level hourly wages for middle-skill occupations related to laser technology in Los Angeles County as they relate to the county's self-sufficiency standard wage. Orange County wages are included below in order to provide a complete analysis of the LA/OC region. Detailed wage information, by county, is included in Appendix A.

Los Angeles County— The typical entry-level hourly wages for middle-skill occupations related to laser technology are \$23.19, which is above the self-sufficiency standard wage for one adult (\$18.10 in Los Angeles County).⁴ Experienced workers can expect to earn wages of \$38.74, which is higher than the self-sufficiency standard.

Orange County— The typical entry-level hourly wages for middle-skill occupations related to laser technology are \$23.49, which is above the self-sufficiency standard wage for one adult (\$20.63 in Orange County).⁵ Experienced workers can expect to earn wages of \$38.87, which is higher than the self-sufficiency standard.

Job Postings

There were 157 online job postings related to laser technology listed in the past 12 months. The highest number of job postings were for laser technicians, optical technicians, optical laboratory technicians, doctor's assistants/optical technicians, and surgical laser technicians. The top skills were customer service, surgery, cleaning, repair, and quality assurance and control. The top three employers, by number of job postings, in the region were Reynard Corporation, Universal Hospital Services Incorporated, and Fortec Medical.

It is important to note that the job postings data included in this section reflects online job postings listed in the past 12 months and does not yet demonstrate the full impact of COVID-19. While employers have generally posted fewer online job postings since the beginning of the pandemic, the long-term effects are currently unknown.

³ Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

⁴ Self-Sufficiency Standard wage data was pulled from The Self-Sufficiency Standard Tool for California on 12/1/2021. For more information, visit: <http://selfsufficiencystandard.org/california>.

⁵ Ibid.

Educational Attainment

The Bureau of Labor Statistics (BLS) lists an associate degree as the typical entry-level education for *engineering technologists and technicians, except drafters, all other*. Furthermore, the national-level educational attainment data indicates 50.8% of workers in the field have completed some college or an associate degree. Of the 55% of laser technician job postings listing a minimum education requirement in Los Angeles/Orange County, 84% (73) requested a high school diploma and 16% (14) requested an associate degree.

Educational Supply

Community College Supply—Exhibit 2 shows the three-year average number of awards conferred by community colleges in the related TOP code: Laser and Optical Technology (0934.80). The only college in the region with completions in past three years is Irvine Valley. Over the past 12 months, there were no other related program recommendation requests from regional community colleges.

Currently, there are no non-community college institutions in the LA/OC region that have conferred awards for laser and optical technology in the past three years.

Exhibit 2: Regional community college awards (certificates and degrees), 2017-2020

			2017- 2018 Awards	2018- 2019 Awards	2019- 2020 Awards	3-Year Award Average
TOP Code	Program	College				
0934.80	Laser and Optical Technology	Irvine Valley	18	17	12	16
		OC Total	18	17	12	16
Supply Total/Average			18	17	12	16

Appendix A: Occupational demand and wage data by county

Exhibit 4. Los Angeles County

Occupation (SOC)	2020 Jobs	2025 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry- Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)
Calibration Technologists and Technicians and Engineering Technologists and Technicians, Except Drafters, All Other (17-3098)	2,579	2,533	(46)	(2%)	215	\$23.19	\$29.43	\$38.67

Exhibit 5. Orange County

Occupation (SOC)	2020 Jobs	2025 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry- Level Hourly Earnings (25th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75th Percentile)
Calibration Technologists and Technicians and Engineering Technologists and Technicians, Except Drafters, All Other (17-3098)	1,294	1,309	16	1%	111	\$23.49	\$29.67	\$38.87

Exhibit 6. Los Angeles and Orange Counties

Occupation (SOC)	2020 Jobs	2025 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Typical Entry- Level Education
Calibration Technologists and Technicians and Engineering Technologists and Technicians, Except Drafters, All Other (17-3098)	3,873	3,843	(30)	(1%)	326	Associate degree

Appendix B: Sources

- O*NET Online
- Labor Insight/Jobs (Burning Glass)
- Economic Modeling Specialists, International (Emsi)
- Bureau of Labor Statistics (BLS)
- Employment Development Department, Labor Market Information Division, OES
- California Community Colleges Chancellor's Office Management Information Systems (MIS)
- California Family Needs Calculator, Insight Center for Community Economic Development
- Chancellor's Office Curriculum Inventory (COCI 2.0)

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