

Optical Technology

Inland Empire/Desert Region (Riverside and San Bernardino counties)

This workforce demand report uses state and federal job projection data developed before the economic impact of COVID-19. The COE is monitoring the situation and will provide more information as it becomes available. Please consult with local employers to understand their current employment needs.

Summary

- Community college optical technology programs provide the knowledge, skills, and abilities that may lead to two community college-level occupations.
- These occupations are projected to have 154 annual job openings through 2024, increasing employment by 30%.
- The 50th percentile hourly earnings for these occupations are between \$18.49 and \$18.52 per hour, below the regional \$21.78 per hour self-sustainable wage standard for a single adult with one child.
- Regional community colleges do not currently offer optical technology programs. Private educational institutions in the region have issued 52 awards annually over the last three academic years in the Inland Empire/Desert Region.
- The Centers of Excellence recommends developing an optical technology program to meet the regional demand for community college-level occupations in this field. See the [recommendation section](#) for further detail.

Introduction

California Community College optical technology (TOP 1219.00) programs prepare students for employment through training related to the theory of vision and lenses and techniques for the application of those principles to assisting in vision care (Taxonomy of Programs, 2012). The occupations described in this report are relevant to optical technology programs and are collectively referred to as the optical technology occupational group in this report. The knowledge, skills, and abilities trained by optical technology programs lead to the following occupations:

- Ophthalmic Medical Technicians (SOC 29-2057)
- Opticians, Dispensing (29-2081)

Job Counts and Projections

In 2019, there were 1,095 combined optical technology jobs in the Inland Empire/Desert Region. Over the next five years, these occupations are expected to have 154 annual job openings, increasing employment by 30%. Exhibit 1 displays the job counts, five-year projected job growth, job openings, and the share of incumbent workers age 55 years and greater working in the optical technology occupational group.

Exhibit 1: Five-year projections for the optical technology occupational group, 2019-2024

Occupation	2019 Jobs	2024 Jobs	5-Yr % Change (New Jobs)	5-Yr Openings (New + Replacement Jobs)	Annual Openings (New + Replacement Jobs)	% of workers age 55+
Opticians, Dispensing	806	864	7%	423	71	21%
Ophthalmic Medical Technicians	289	559	94%	499	83	11%
Total	1,095	1,423	30%	923	154	17%

Source: Emsi 2021.2

Exhibit 2 displays the number of online job ads posted over the last 12 months, along with the regional and statewide average time to fill for optical technology positions. On average, local employers fill online job postings for optical technology positions within 34 days, four days shorter than the statewide average, indicating that local employers may experience fewer challenges filling open positions than other employers in California as a whole.

Exhibit 2: Job ads and time to fill

Occupation	Job Ads	Regional Average Time to Fill (Days)	Statewide Average Time to Fill (Days)
Opticians, Dispensing	145	36	39
Ophthalmic Medical Technicians	77	30	37
Total	222	34	38

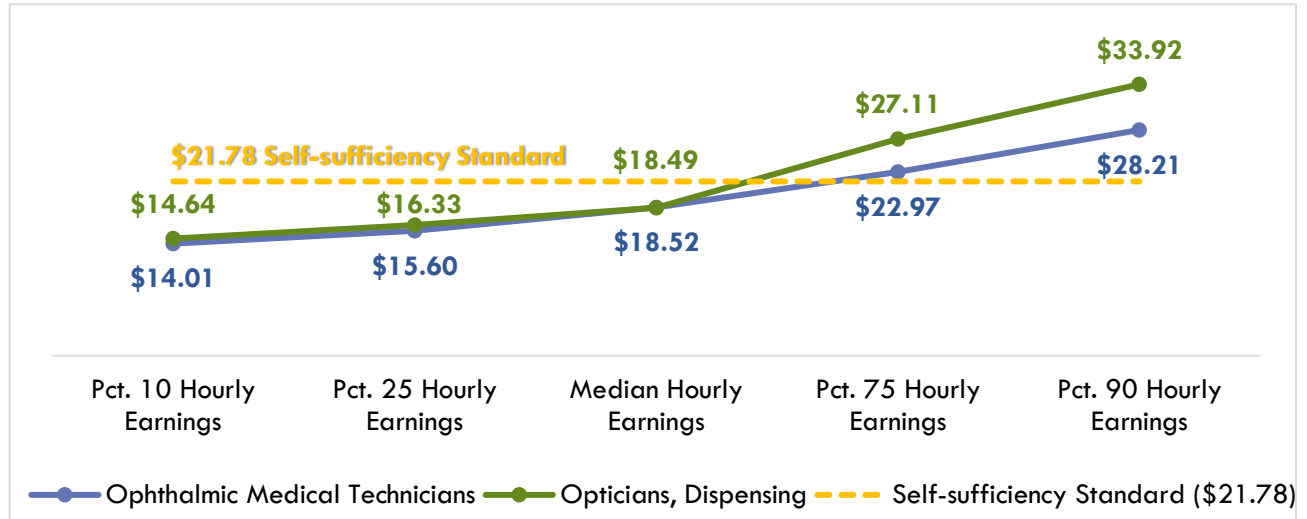
Source: Burning Glass – Labor Insights

Earnings and Benefits

Community colleges should ensure their training programs lead to employment opportunities that provide self-sustainable income. The University of Washington estimates that a self-sufficient hourly rate for a single adult with one school-age child is \$21.78 per hour or \$45,992 annually in Riverside County; \$21.24 per hour or \$44,867 annually in San Bernardino County (Pearce, 2020). For this study, the higher hourly earnings requirement in Riverside County is adopted as the self-sufficiency standard for the two-county region.

The hourly earnings for opticians, dispensing and ophthalmic medical technicians do not surpass the \$21.78 self-sufficiency standard until the 75th percentile, indicating that only the top 25% of workers in the field earn a self-sustainable wage. Exhibit 3 displays the hourly earnings for the optical technology occupational group.

Exhibit 3: Hourly earnings by percentile



Source: Emsi 2021.2

According to the California Labor Market Information Division's occupational guides, benefits for opticians, dispensing typically include medical, dental, and life insurance as well as vacation and sick leave. Benefits information is not available for ophthalmic medical technicians (Detailed Occupational Guides, 2021).

Advertised Salary from Online Job Ads

Exhibit 4 displays online job ad salary data for the optical technology occupational group over the last 12 months in the Inland Empire/Desert Region. Online job ad salary information reveals that employers are willing to pay this occupational group between \$34,000 and \$36,000 annually, below the \$45,992 annual (\$21.78 hourly) self-sufficiency standard for the region. Consider the salary information with caution since only 34% (76 out of 222) online job postings for these occupations provided salary information. The salary figures are prorated to reflect full-time, annual wage status.

Exhibit 4: Advertised salary information

Occupations	Real-Time Salary Information					Average Annual Salary
	Number of job postings	Less than \$35,000	\$35,000 to \$49,999	\$50,000 to \$74,999	More than \$75,000	
Opticians, Dispensing	39	39%	61%	-	-	\$36,000
Ophthalmic Medical Technicians	37	68%	30%	2%	-	\$34,000

Source: Burning Glass – Labor Insights

Employers, Skills, Education, Work Experience, and Certifications

Exhibit 5 displays the employers posting the most job ads during the last 12 months. Displaying employer names provides some insight into where students may find employment after completing a program. Target Optical is the employer posting the most advertisements in the Inland Empire/Desert Region.

Exhibit 5: Employers posting the most job ads for the optical technology occupational group

Occupation	Top Employers
Opticians, Dispensing (n=145)	<ul style="list-style-type: none"> • Target Optical • LensCrafters • California Eye Specialists
Ophthalmic Medical Technicians (n=77)	<ul style="list-style-type: none"> • EyeCare Partners LLC • California Eye Professionals • Pacific Eye Institute • EyeCare Services Partners • NVISION Eye Centers

Source: Burning Glass – Labor Insights

Exhibit 6 lists a sample of specialized and employability skills employers seek when looking for workers to fill optical technology positions. Specialized skills are occupation-specific skills that employers request for industry or job competency. Employability skills are foundational skills that transcend industries and occupations; this category is often referred to as "soft skills." The skills requested in job postings may be utilized to guide curriculum development.

Exhibit 6: Sample of in-demand skills from employer job ads

Occupation	Specialized skills	Employability skills
Opticians, Dispensing (n=132)	<ul style="list-style-type: none"> • Sales Goals • Optometry • Customer Service • Repair • Cleaning 	<ul style="list-style-type: none"> • Computer Literacy • Critical Thinking • Organizational Skills • Communication Skills • Multi-Tasking
Ophthalmic Medical Technicians (n=74)	<ul style="list-style-type: none"> • Optometry • Tonometry • Fundus • Scheduling • Medical Coding 	<ul style="list-style-type: none"> • Detail-Oriented • Communication Skills • Bilingual (English/Spanish) • Energetic • Organizational Skills

Source: Burning Glass – Labor Insights

According to the Bureau of Labor Statistics, approximately (39%-50%) of incumbent workers in this field hold a community college-level of educational attainment; "some college, no degree" and an "associate degree." Online job advertisements indicate that most employers (93%) seeking opticians, dispensing sought candidates with an associate degree. Most employers (84%) posting advertisements for ophthalmic medical technicians sought candidates with a high school diploma or vocational training. Exhibit 7 displays the typical entry-level education, educational attainment, and the minimum advertised education requirements for the optical technology occupational group.

Exhibit 7: Typical entry-level education, educational attainment, and minimum advertised education requirements

Occupation	Typical Entry-Level Education Requirement	CC-Level Educational Attainment*	Real-Time Minimum Advertised Education Requirement			
			Number of Job Ads	High school or vocational training	Associate degree	Bachelor's degree or higher
Opticians, Dispensing	High school diploma or equivalent	50%	15	-	93%	7%
Ophthalmic Medical Technicians	Postsecondary nondegree award	39%	45	84%	16%	-

Source: Emsi 2021.2, Burning Glass – Labor Insights

*Percentage of incumbent workers with a Community College Award or Some Postsecondary Coursework

Exhibit 8 displays the work experience typically required to enter each occupation and the real-time work experience requirements from employer job ads. Job advertisements indicate that nearly all employers sought candidates with zero to two years of work experience.

Exhibit 8: Work experience required and real-time work experience requirements

Occupation	Work Experience Typically Required	Real-Time Work Experience			
		Number of job postings	0 – 2 years	3 – 5 years	6+ years
Opticians, Dispensing	None	87	97%	2%	1%
Ophthalmic Medical Technicians	None	57	98%	2%	-

Source: Emsi 2021.2, Burning Glass – Labor Insights

Approximately 48% of the advertisements for opticians, dispensing included certification information, all of which sought candidates with their optician certification. The California State Board of Optometry is responsible for registering opticians. Before registration, individuals must take and pass the exams offered by the American Board of Optometry (ABO) and National Contact Lens Examiners (NCLE). Registered dispensing optician programs include four different certifications, including registered dispensing optician, registered spectacle lens designer, registered contact lens designer, and non-resident contact lens sellers

(Opticianedu.org, 2021). For more information regarding optician certifications, please visit the California State Board of Optometry's website (California State Board of Optometry, 2021).

Nearly 12% of employers seeking ophthalmic medical technicians sought candidates with their ophthalmic assistant certification, indicating this certification may not be essential to employment. The International Joint Commission on Allied Health Personnel in Ophthalmology (IJCAHPO) is a non-profit that oversees the certification of allied health professionals. For more information about this certification, please visit the IJCAHPO website (IJCAHPO, 2021). Exhibit 9 displays the certifications required by employers posting job ads for the optical technology occupational group in the Inland Empire/Desert Region.

Exhibit 9: Certifications typically required in advertisements for the optical technology occupational group

Occupation	Certifications
Opticians, Dispensing (n=69)	<ul style="list-style-type: none"> • Optician Certification
Ophthalmic Medical Technicians (n=18)	<ul style="list-style-type: none"> • Certified Ophthalmic Assistant

Source: Burning Glass – Labor Insights

Optical Technology Programs

Community colleges in the Inland Empire/Desert Region do not currently offer optical technology (TOP 1219.00) programs. Due to the lack of programs offered in the region, student completion and program outcome information are not available.

According to the Chancellors Office Curriculum Inventory (COCI), Moorpark College and Sacramento City College are the only community colleges in California with active optical technology programs in California (COCI, 2021). The program description and purpose of Moorpark College's optical technology program, displayed below, may provide guidance for curriculum development:

The Optical Technology Program is a two-year associate of science (AS) degree career preparation program. The program prepares students to take for the American Board of Opticianry (ABO) and National Contact Lens Examiners (NCLE) examination to be licensed as an Optician. Students must complete the prerequisites, core optical technology, and general education courses to earn the AS degree. Students who complete the Optical Technology program will be provided the essential knowledge and skills to fabricate, fit, and dispense eyeglasses and contact lenses in manufacturing, retail, and professional vision care settings (Moorpark College, 2021, p. 264).

Opticianry/Ophthalmic Dispensing Optician (CIP 51.1801) awards reported by other postsecondary education providers are displayed in Exhibit 10. Completion data is compiled from the Integrated Postsecondary Education Data System (IPEDS) for the most recent three years available. This program

awarded 52 annual average awards. Due to IPEDS reporting limitations, it is assumed that each award represents a qualified worker since it is unknown if students are earning multiple awards from this program.

Exhibit 10: Other educational providers opticianry/ophthalmic dispensing optician programs, three-year annual average credentials in the Inland Empire/Desert Region

51.1801 – Opticianry/Ophthalmic Dispensing Optician	Award 1<2 Academic Years	Other Educational Providers Annual Average Credentials, Academic Years 2016-19
American Career College-Ontario	52	52
Total	52	52

Source: IPEDS

Recommendation for Optical Technology Programs

The community college-level optical technology occupations are expected to have 154 annual job openings and increase employment by 30% over the next five years. The hourly earnings for optical technology occupations do not surpass the \$21.78 per hour self-sustainable wage standard until the 75th percentile.

Community colleges in the region do not currently offer optical technology (1219.00) programs. Private educational institutions in the region have issued 52 awards annually over the last three academic years in opticianry/ophthalmic dispensing programs.

The Centers of Excellence recommends developing an optical technology program due to the lack of qualified program completers exiting private educational institutions in the region. However, colleges considering this program should partner with applicable employers to document their demand for more workers in this field and ensure that students earn a self-sustainable wage after program completion.

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References

Burning Glass Technologies. (2021). *Labor Insights/Jobs*. Retrieved from <https://www.burning-glass.com/>

California Community Colleges Chancellor's Office. (2021). *Chancellor's Office Curriculum Inventory (COCI)*, version 3.0. Retrieved from <https://coci2.ccctechcenter.org/programs>

California Community Colleges Chancellor's Office Management Information Systems (MIS) Data Mart. (2021). *Data Mart*. Retrieved from <https://datamart.cccco.edu/datamart.aspx>

California Community Colleges Chancellor's Office, Curriculum and Instructional Unit, Academic Affairs Division. (2012). *Taxonomy of Programs, 6th Edition, Corrected Version*. Retrieved from <https://www.cccco.edu/-/media/CCCCO-Website/About-Us/Divisions/Digital-Innovation-and-Infrastructure/Research/Files/TOPmanual6200909corrected12513.ashx?la=en&hash=94C709CA83C0380828415579395A5F536736C7C1>

California State Board of Optometry (2021). *Optician Program*. Department of Consumer Affairs. Retrieved from <https://www.optometry.ca.gov/optician/index.shtml>

Carnevale, A. P., Jayasundera, T., & Repnikov, D. (n.d.). Understanding Online Job Ads Data. Retrieved from <https://cew.georgetown.edu/wp-content/uploads/2014/11/OCLM.Tech.Web.pdf>

Economic Modeling Specialists International (Emsi). (2021). *Datarun 2021.2*. Retrieved from <https://www.economicmodeling.com/>

International Joint Commission on Allied Health Personnel in Ophthalmology (IJCAHPO). (2021). *Certification*. Retrieved from <https://www.ijahpo.org/certification-recertification/>

Labor Market Information Division. Employment Development Department of California. (2021). *Detailed Occupational Guides*. Retrieved from <https://www.labormarketinfo.edd.ca.gov/OccGuides/Search.aspx>

Moorpark College. (2021). *General Catalog Moorpark College 2021/2022*. (p. 264). Retrieved from https://www.moorparkcollege.edu/sites/moorparkcollege/files/media/pdf_document/2021/MC_Catalog_21-22-web%20CLR%20FINAL.pdf

National Center for O*NET Development. (2021). O*NET OnLine. Retrieved from <https://www.onetonline.org/>

Opticianedu.org. (2021). *How to Become an Optician in California*. Retrieved from <https://www.opticianedu.org/california/>

Pearce, D. University of Washington. (2020). *Self Sufficiency Standard – California*. Retrieved from <http://www.selfsufficiencystandard.org/california>

Appendix: Occupation definitions, sample job titles, five-year projections, and earnings for optical technology occupations

Occupation Definitions (SOC code), Education and Training Requirement, Community College Education Attainment

Ophthalmic Medical Technicians (29-2057)

Assist ophthalmologists by performing ophthalmic clinical functions. May administer eye exams, administer eye medications, and instruct the patient in care and use of corrective lenses.

Sample job titles: Certified Ophthalmic Medical Technician (Certified Ophthalmic Medical Tech), Certified Ophthalmic Surgical Assistant, Certified Ophthalmic Technician (COT), Certified Ophthalmic Technician-Surgical Assistant (COT-SA), Health Technician (Health Tech), Ophthalmic Assistant, Ophthalmic Diagnostic Sonographer, Ophthalmic Medical Assistant, Ophthalmic Medical Technician (Ophthalmic Medical Tech), Ophthalmic Technician

Entry-Level Educational Requirement: Postsecondary nondegree award

Training Requirement: None

Percentage of incumbent workers with a Community College Award or Some Postsecondary Coursework: 39%

Opticians, Dispensing (29-2081)

Design, measure, fit, and adapt lenses and frames for client according to written optical prescription or specification. Assist client with inserting, removing, and caring for contact lenses. Assist client with selecting frames. Measure customer for size of eyeglasses and coordinate frames with facial and eye measurements and optical prescription. Prepare work order for optical laboratory containing instructions for grinding and mounting lenses in frames. Verify exactness of finished lens spectacles. Adjust frame and lens position to fit client. May shape or reshape frames. Includes contact lens opticians.

Sample job titles: Certified Optician, Contact Lens Technician, Dispensing Optician, Licensed Dispensing Optician (LDO), Licensed Optician, Ophthalmic Dispenser, Optical Technician, Optician, Optometric Technician

Entry-Level Educational Requirement: High school diploma or equivalent

Training Requirement: More than twelve months on-the-job training

Percentage of incumbent workers with a Community College Award or Some Postsecondary Coursework: 50%

Appendix: Methodology

Job advertisement data is limited to the information provided by employers and the ability of artificial intelligence search engines to identify this information. Additionally, preliminary calculations by Georgetown Center on Education and the Workforce found that "just 30 to 40 percent of openings for candidates with some college or an associate degree, and only 40 to 60 percent of openings for high school diploma holders appear online" (Carnevale et al., 2014). Online job advertisements often do not reveal employers' hiring intentions; it is unknown if employers plan to hire one or multiple workers from a single online job ad or collect resumes for future hiring needs. A closed job ad may not be the result of a hired worker.

Table 1. 2019 to 2024 job growth, wages, entry-level education, training, and work experience required for the optical technology occupational group

Occupation (SOC)	2019 Jobs	5-Year Change (New Jobs)	5-Year % Change (New Jobs)	Annual Openings (New + Replacement Jobs)	Entry-Experienced Hourly Wage (10 th to 90 th percentile)	Median Hourly Wage (50 th percentile)	Average Annual Earnings	Entry-Level Education & On-The-Job-Training	Work Experience Required
Opticians, Dispensing (29-2081)	806	57	7%	71	\$14.64 to \$33.92	\$18.49	\$45,500	High school diploma or equivalent & 12 months	None
Ophthalmic Medical Technicians (29-2057)	289	270	94%	83	\$14.01 to \$28.21	\$18.52	\$42,200	Postsecondary nondegree award & None	None
Total	1,095	328	30%	154	-	-	-	-	-

Source: Emsi 2021.2