

Labor Market Analysis for Program Recommendation: 2105.40/Forensics, Evidence, and Investigation (Forensic Technician Certificate)

Orange County Center of Excellence, May 2023



Summary

Program LMI Endorsement	Endorsed: All LMI Criteria Met <input checked="" type="checkbox"/>	Endorsed: Some LMI Criteria Met <input type="checkbox"/>	Not LMI Endorsed <input type="checkbox"/>
-------------------------	--	--	---

Program LMI Endorsement Criteria

	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Supply Gap:	<i>Comments:</i> there is projected to be 166 annual job openings throughout Los Angeles and Orange counties for <i>forensic science technicians</i> , which is more than the 56 awards conferred by educational institutions .	
Living Wage: (Entry-Level, 25 th)	<i>Comments:</i> Entry-level wages for forensic science technicians are \$33.97, which is significantly above the OC living wage of \$20.63.	
Education:	<i>Comments:</i> The typical entry-level education for <i>forensic science technicians</i> is a bachelor's degree. However, over one-third of workers in the field have completed some college or an associate degree as their highest level of education.	

Emerging Occupation(s)		
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
<i>Comments:</i> N/A		

The Orange County Center of Excellence for Labor Market Research (OC COE) prepared this report to determine whether there is a supply gap in the Los Angeles/Orange County regional labor market related to one middle-skill occupation:

- Forensic Science Technicians (19-4092)

Based on the available data there appears to be a supply gap for *forensic science technicians*, typical entry-level wages are above the living wage and typical education requirements for this occupation align with a community college education. Therefore, **due to all of the regional labor market criteria being met, the COE endorses this proposed program.**

Exhibit 1 lists the occupational demand, supply, typical entry-level education, and educational attainment for the occupations included in this report.

Exhibit 1: Occupational Demand and Supply in Los Angeles/Orange Counties

Occupation (SOC)	Demand (Annual Openings)	Supply (CC and Non-CC)	Entry-Level Hourly Earnings (25 th Percentile)	Typical Entry-Level Education	Community College Educational Attainment
Forensic Science Technicians (19-4092)	166	56	OC: \$33.97	Bachelor's Degree	37%
Total	166	56	N/A	N/A	N/A

Demand:

- The number of jobs related to *forensic science technicians* is projected to increase 8% through 2026, equating to 166 annual job openings.
- Hourly entry-level wages for *forensic science technicians* are \$33.97 in Orange County, which is significantly above the living wage of \$20.63.
- There were 38 online job postings for *forensic science technicians* over the past 12 months. The highest number of postings were for forensic specialists, forensic technicians, and examiners.
- The typical entry-level education for *forensic science technicians* is a bachelor's degree.
- Approximately 37% of workers in the field have completed some college or an associate degree as their highest level of education.

Supply:

- There was an average of 56 awards conferred by 3 community colleges in Los Angeles County from 2018 to 2021. Though two Orange County colleges – Fullerton and Golden West – offer a forensic, evidence, and investigation program, no awards were conferred from 2018-2021.
- Non-community college institutions did not confer any related awards from 2017 to 2020.
- Though Fullerton and Golden West colleges both offer forensics, evidence, and investigation degrees and certificates, no courses are coded under this TOP code. Therefore, student outcomes data is not available.

Demand

Occupational Projections:

Exhibit 2 shows the annual percentage change in jobs for forensic science technicians from 2016 through 2026. Though there was a 6% decline across all occupations from 2019 to 2020 due to the COVID-19 pandemic, employment for *forensic science technicians* increased 8% during the same period. Employment for *forensic science technicians* is projected to grow at a slightly higher rate than all occupations through 2026.

Exhibit 2: Annual Percent Change in Jobs for Forensic Science Technicians, 2016-2026

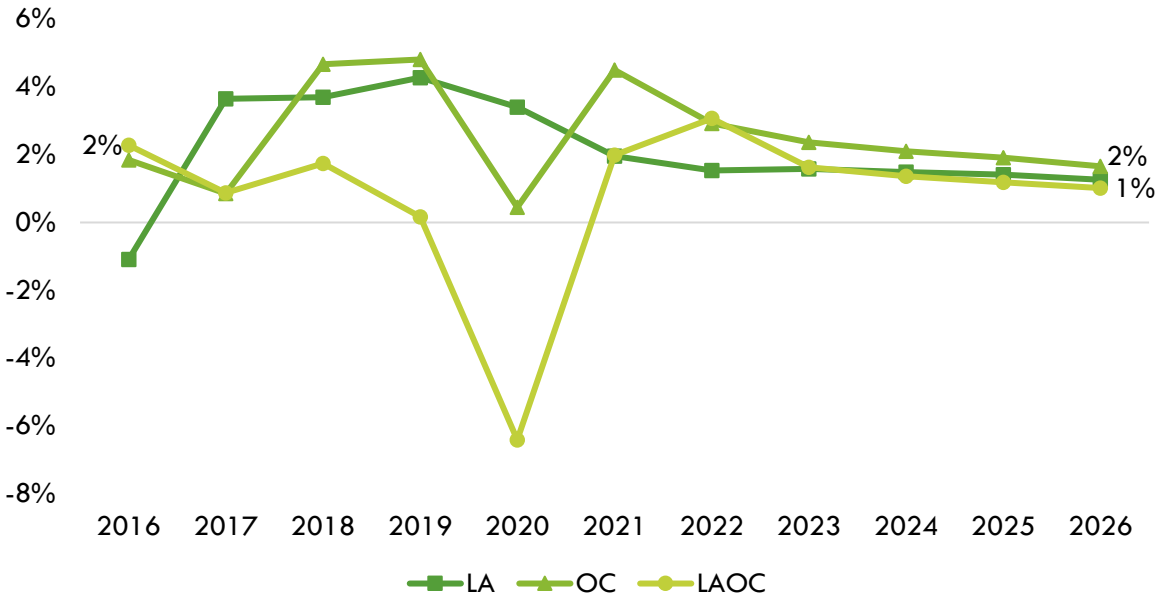


Exhibit 3 shows the five-year occupational demand projections for *forensic science technicians*. In Los Angeles/Orange County, the number of jobs for *forensic science technicians* is projected to increase by 8% through 2026. There is projected to be 166 jobs available annually.

Exhibit 3: Occupational Demand in Los Angeles and Orange Counties¹

Geography	2021 Jobs	2026 Jobs	2021-2026 Change	2021-2026 % Change	Annual Openings
Los Angeles	923	992	69	8%	131
Orange	228	254	26	11%	35
Total	1,151	1,247	95	8%	166

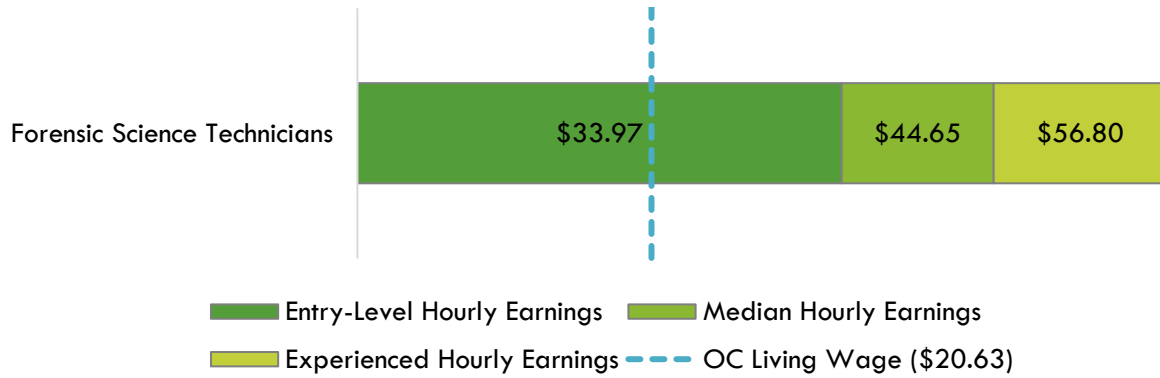
Wages:

The labor market endorsement in this report considers the entry-level hourly wages for *forensic science technicians* in Orange County as they relate to the county’s living wage. Los Angeles County wages are included below in order to provide a complete analysis of the LA/OC region.

The typical entry-level hourly wages for *forensic science technicians* are \$33.97, which is significantly above the living wage for one adult (\$20.63 in Orange County). Median wages are \$44.65. Orange County’s average wages are slightly above the average statewide wage of \$43.84 for *forensic science technicians*. Exhibit 4 shows the wage range for *forensic science technicians* in Orange County and how it compares to the regional living wage.

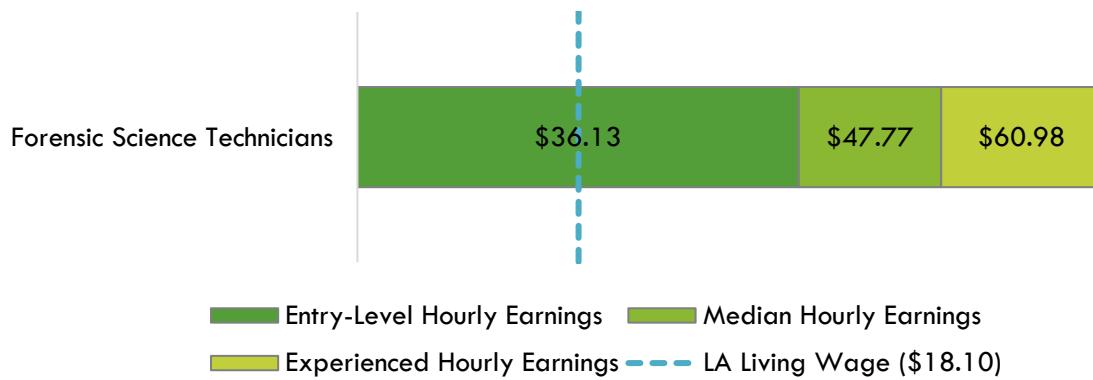
¹ Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

Exhibit 4: Wages by Occupation in Orange County



The typical entry-level hourly wages for *forensic science technicians* are \$36.16, which is significantly above the living wage for one adult (\$18.10 in Los Angeles County). Median wages are \$47.77. Los Angeles County’s average wages are above the average statewide wage of \$43.84 for *forensic science technicians*. Exhibit 5 shows the wage range for *forensic science technicians* in Los Angeles County and how it compares to the regional living wage.

Exhibit 5: Wages by Occupation in Los Angeles County



Job Postings:

Important Online Job Postings Data Note: Online job postings data is sourced from Lightcast, a labor market analytics firm that scrapes, collects, and organizes data from online job boards such as LinkedIn, Indeed, Glassdoor, Monster, GovernmentJobs.com, and thousands more. Lightcast uses natural language processing (NLP) to determine the related company, industry, occupation, and other information for each job posting. However, NLP has limitations that include understanding contextual words of phrases; determining differences in words that can be used as nouns, verbs, and/or adjectives; and misspellings or grammatical errors.² For these reasons, job postings could be assigned to the wrong employer, industry, or occupation within Lightcast’s database.

Additionally, there are several limitations when analyzing job postings. A single job posting may not represent a single job opening, as employers may be creating a pool of candidates for future openings or hiring for multiple positions with a single posting. Additionally, not all jobs are posted online, and jobs may be filled

² K. R. Chowdhary, *Fundamentals of Artificial Intelligence* (Basingstoke: Springer Nature, 2020), <https://link.springer.com/book/10.1007/978-81-322-3972-7>.

through other methods such as internal promotion, word-of-mouth advertising, physical job boards, or a variety of other channels.

There were 38 online job postings related to forensic science technicians listed in the past 12 months.

Exhibit 6: Number of Job Postings by Occupation (n=38)

Occupation	Job Postings	Percentage of Job Postings
Forensic Science Technicians	38	100%

The top employers in the region, by number of job postings, are shown in Exhibit 7.

Exhibit 7: Top Employers by Number of Job Postings (n=38)

Employer	Job Postings	Percentage of Job Postings
City Of Santa Ana	5	13%
Travelers	3	8%
Verify	3	8%
Amentum	2	5%
City Of Irvine	2	5%
County Los Angeles	2	5%
County Of Los Angeles Department Of Public Works	2	5%
Accurate Biometrics	1	3%
City Of Burbank	1	3%
City Of Downey	1	3%

The top specialized, soft, and computer skills listed by those most frequently mentioned in job postings (denoted in parentheses) are shown in Exhibit 8.

Exhibit 8: Top Skills by Number of Job Postings (n=38)

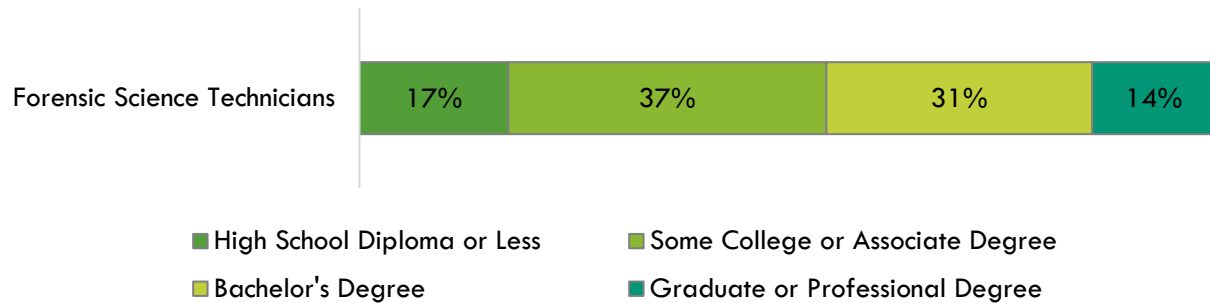
Top Specialized Skills	Top Soft Skills	Top Computer Skills
Law Enforcement (13)	Investigation (17)	Microsoft Word (8)
Evidence Collection (11)	Communications (15)	Zoom (Video Conferencing Tool) (3)
Forensic Sciences (11)	Writing (12)	Adobe Photoshop (2)
Fingerprint Identification And Classification (10)	Detail Oriented (11)	Microsoft Excel (2)
Crime Scene Investigation (8)	Lifting Ability (11)	Database Software (1)
Photography (8)	Report Writing (9)	Microsoft Access (1)
Biology (6)	Microsoft Word (8)	Spreadsheets (1)
Chain Of Custody (6)	Filing (7)	-
Expert Witness (6)	Record Keeping (6)	-
Rehabilitation (6)	English Language (5)	-

Educational Attainment:

The Bureau of Labor Statistics (BLS) lists a bachelor's degree as the typical entry-level education for *forensic science technicians*. However, the national-level educational attainment data indicates 37% of workers in the field have completed some college or an associate degree as their highest level of education. Exhibit 9 shows the educational attainment for *forensic science technicians*.

Of the 61% of the cumulative job postings for *forensic science technicians* that listed a minimum education requirement in Los Angeles/Orange County, 70% (16) requested a high school diploma or an associate degree and 30% (7) requested a bachelor's or master's degree.

Exhibit 9: National-level Educational Attainment for Occupations



Educational Supply

Community College Supply:

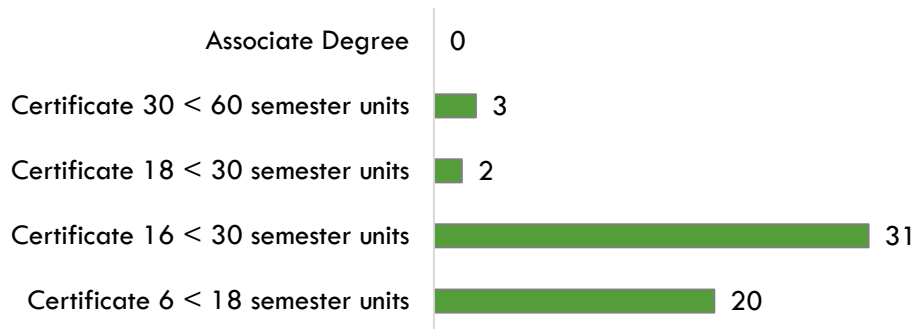
Exhibit 10 shows the three-year average number of awards conferred by community colleges in the related TOP code: Forensics, Evidence, and Investigation (2105.40). The college with the most completions in the region is East LA. Over the past 12 months, there were no other related program recommendation requests from regional community colleges.

Exhibit 10: Regional Community College Awards (Certificates and Degrees), 2018-2021

TOP Code	Program	College	2018-2019 Awards	2019-2020 Awards	2020-2021 Awards	3-Year Award Average
2105.40	Forensics, Evidence, and Investigation	East LA	35	31	28	31
		El Camino	6	4	6	5
		Long Beach	15	23	22	20
		LA Subtotal	56	58	56	56
		-	-	-	-	
		OC Subtotal	-	-	-	-
Supply Total/Average			56	58	56	56

Exhibit 11 shows the annual average community college awards by type from 2018-19 through 2020-21. The majority of the awards are for certificates between 16 and less than 30 semester units, followed by certificates between 6 and less than 18 semester units.

Exhibit 11: Annual Average Community College Awards by Type, 2018-2021



Community College Student Outcomes:

Exhibit 12 shows the Strong Workforce Program (SWP) metrics for forensics, evidence, and investigation programs at North Orange County Community College District (NOCCCD) the Orange County Region, and California. Though Fullerton and Golden West colleges both offer forensics, evidence, and investigation degrees and certificates, no courses are coded under this TOP code. Therefore, student outcomes data is not available for NOCCCD and the Orange County region.

Exhibit 12: Forensics, Evidence, and Investigation (2105.40) Strong Workforce Program Metrics, 2019-20³

SWP Metric	NOCCCD	OC Region	California
SWP Students	N/A	N/A	1,719
SWP Students Who Earned 9 or More Career Education Units in the District in a Single Year	N/A	N/A	47%
SWP Students Who Completed a Noncredit CTE or Workforce Preparation Course	N/A	N/A	0%
SWP Students Who Earned a Degree or Certificate or Attained Apprenticeship Journey Status	N/A	N/A	77
SWP Students Who Transferred to a Four-Year Postsecondary Institution (2019-20)	N/A	N/A	177
SWP Students with a Job Closely Related to Their Field of Study (2018-19)	N/A	N/A	57%
Median Annual Earnings for SWP Exiting Students (2019-20)	N/A	N/A	\$32,584
Median Change in Earnings for SWP Exiting Students (2019-20)	N/A	N/A	38%
SWP Exiting Students Who Attained the Living Wage (2019-20)	N/A	N/A	44%

Non-Community College Supply:

For a comprehensive regional supply analysis, it is also important to consider the supply from other institutions in the region that provide training programs for *forensic science technicians*. Between 2017 and 2020, no related awards were conferred by non-community college institutions.

³ All SWP metrics are for 2019-20 unless otherwise noted.

Regional Demographics

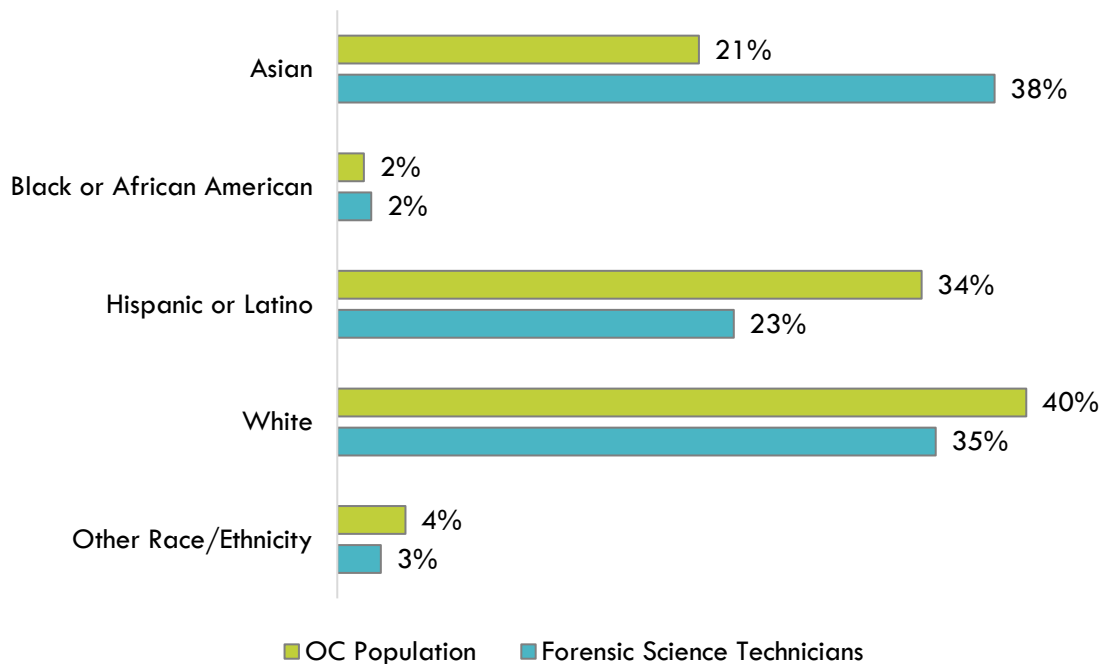
This section analyzes demographic data for the Orange County population, as well occupational data, for the purpose of identifying potential diversity and equity issues that can be addressed by community college programs.

As noted in the student outcomes section, no Orange County community college offers courses under the forensics, evidence, and investigation TOP code. For this reason, this section considers only the demographics of the Orange County population and *forensic science technicians*.

Ethnicity:

Exhibit 13 shows the ethnicity of the Orange County population compared to *forensic science technicians*. Notably, 38% of *forensic science technicians* are Asian, which is much higher than the population (21%). Conversely, 23% of *forensic science technicians* are Hispanic or Latino, which is significantly lower than the population (34%).

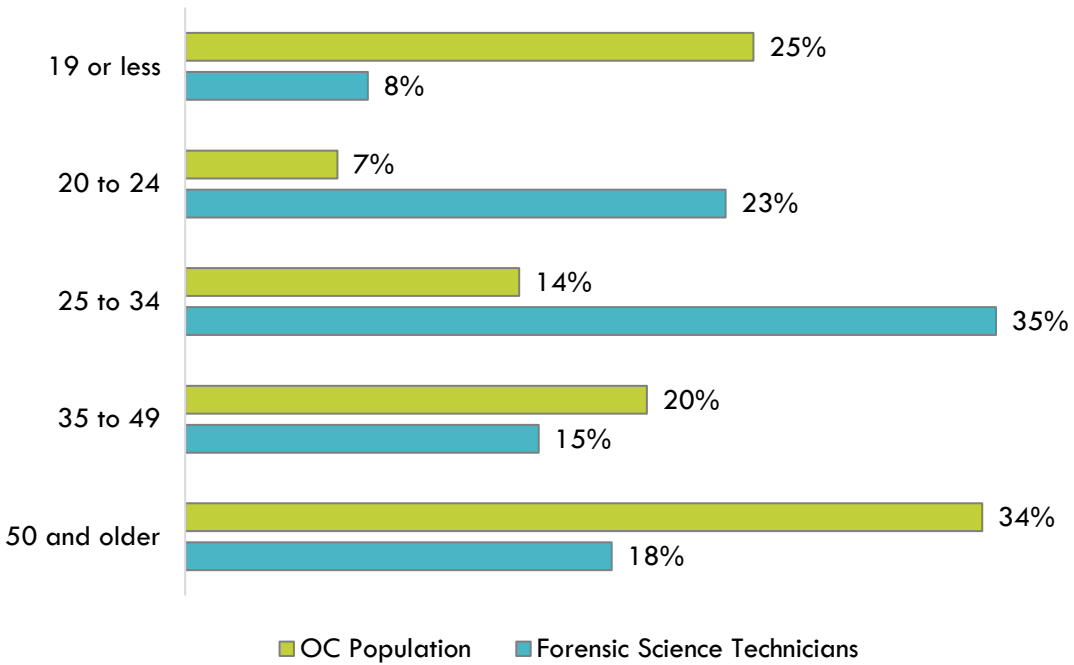
Exhibit 13: Program and County Demographics by Ethnicity



Age:

Exhibit 14 shows the age of the Orange County population compared to *forensic science technicians*. Notably, the plurality (35%) of *forensic science technicians* are 25 to 34, which is significantly higher than the population (14%). Similarly, 23% of *forensic science technicians* are 20 to 24, which is also significantly higher than the population (7%).

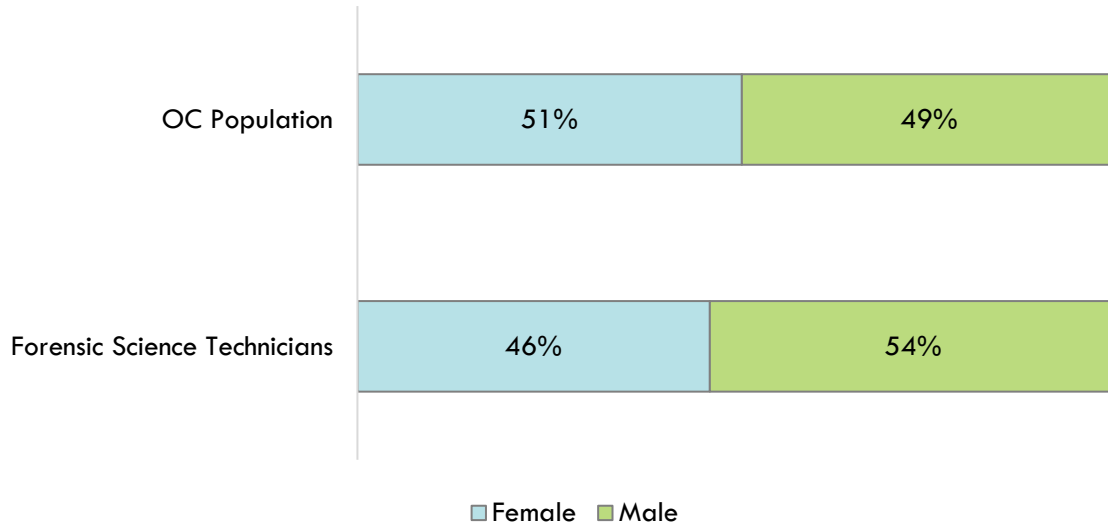
Exhibit 14: Program and County Demographics by Age



Sex:

Exhibit 15 shows the sex of the Orange County population as well as *forensic science technicians*. Both groups are split nearly evenly, with *forensic science technicians* having a slightly higher percentage of male workers (54%) than female workers (46%).

Exhibit 15: Program and County Demographics by Sex



Appendix A: Methodology

The OC COE prepared this report by analyzing data from occupations and education programs. Occupational data is derived from Lightcast, a labor market analytics firm that consolidates data from the California Employment Development Department (EDD), U.S. Bureau of Labor Statistics (BLS) and other government agencies. Program supply data is drawn from two systems: Taxonomy of Programs (TOP) and Classification of Instructional Programs (CIP).

Using a TOP-SOC crosswalk, the OC COE identified middle-skill jobs for which programs within these TOP codes train. Middle-skill jobs include:

- 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.

The OC COE determined labor market supply for an occupation or SOC code by analyzing the number of program completers or awards in a related TOP or CIP code. The COE developed a "supply table" with this information, which is the source of the program supply data for this report. TOP code data comes from the California Community Colleges Chancellor's Office MIS Data Mart (datamart.cccco.edu) and CIP code data comes from the Integrated Postsecondary Education Data System (nces.ed.gov/ipeds/use-the-data), also known as IPEDS. TOP is a system of numerical codes used at the state level to collect and report information on California community college programs and courses throughout the state that have similar outcomes. CIP codes are a taxonomy of academic disciplines at institutions of higher education in the United States and Canada. Institutions outside of the California Community College system do not use TOP codes in their reporting systems.

Data included in this analysis represent the labor market demand for relevant positions most closely related to the proposed program as expressed by the requesting college in consultation with the OC COE. Traditional labor market information was used to show current and projected employment based on data trends, as well as annual average awards granted by regional community colleges. Real-time labor market information captures job post advertisements for occupations relevant to the field of study which can signal demand and show what employers are looking for in potential employees, but is not a perfect measure of the quantity of open positions.

All representations have been produced from primary research and/or secondary review of publicly and/or privately available data and/or research reports. The most recent data available at the time of the analysis was examined; however, data sets are updated regularly and may not be consistent with previous reports. Efforts have been made to qualify and validate the accuracy of the data and findings; however, neither the Centers of Excellence for Labor Market Research (COE), COE host district, nor California Community Colleges Chancellor's Office are responsible for the applications or decisions made by individuals and/or organizations based on this study or its recommendations.

Appendix B: Data Sources

Data Type	Source
Occupational Projections, Wages, and Job Postings	<p>Traditional labor market information data is sourced from Lightcast, a labor market analytics firm. Lightcast occupational employment data are based on final Lightcast industry data and final Lightcast staffing patterns. Wage estimates are based on Occupational Employment Statistics and the American Community Survey. For more information, see https://lightcast.io/</p>
Living Wage	<p>The living wage is derived from the Insight Center’s California Family Needs Calculator, which measures the income necessary for an individual of family to afford basic expenses. The data assesses the cost of housing, food, child care, health care, transportation, and taxes. For more information, see: https://insightccd.org/family-needs-calculator/</p> <p>The living wage for one adult in Orange County is \$20.63 per hour (\$42,910.40 annually). This figure is used by the CCCCCO to calculate the percentage of students that attained the regional living wage.</p>
Typical Education and Training Requirements, and Educational Attainment	<p>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, see https://www.bls.gov/emp/documentation/education/tech.htm</p>
Emerging Occupation Descriptions, Additional Education Requirements, and Employer Preferences	<p>The O*NET database includes information on skills, abilities, knowledges, work activities, and interests associated with occupations. For more information, see https://www.onetonline.org/help/online/</p>
Educational Supply	<p>The CCCCCO Data Mart provides information about students, courses, student services, outcomes and faculty and staff. For more information, see: https://datamart.cccco.edu</p> <p>The National Center for Education Statistics (NCES) Integrated Postsecondary Integrated Data System (IPEDS) collects data on the number of postsecondary awards earned (completions). For more information, see https://nces.ed.gov/ipeds/use-the-data/survey-components/7/completions</p>
Student Metrics and Demographics	<p>LaunchBoard, a statewide data system supported by the California Community Colleges 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, see: https://www.calpassplus.org/LaunchBoard/Home.aspx</p>

Data Type	Source
Population and Occupation Demographics	<p>The Census Bureau's American Community Survey (ACS) is the premier source for detailed population and housing information. For more information, see: https://www.census.gov/programs-surveys/acs</p> <p>Data is sourced from IPUMS USA, a database providing access to ACS and other Census Bureau data products. For more information, see: https://usa.ipums.org/usa/about.shtml</p>

For more information, please contact the Orange County Center of Excellence:

Jesse Crete, Ed. D., Director
 crete_jesse@rscdd.edu

Jacob Poore, Assistant Director
 poore_jacob@rscdd.edu

May 2023

