

Labor Market Analysis for Noncredit Program Recommendation: 0514.00/Office Technology/Office Computer Applications **C·O·E** (Intro to Computers)



CENTERS OF EXCELLENCE
FOR LABOR MARKET RESEARCH

Orange County Center of Excellence, February 2023

Summary

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

	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Supply Gap:	<i>Comments:</i> there is projected to be 18,773 annual job openings throughout Los Angeles and Orange counties for these real-estate occupations, which is more than the 1,212 awards conferred by educational institutions.	
Living Wage: (Entry-Level, 25 th)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
	<i>Comments:</i> all annual job openings for these office technology occupations have entry-level hourly wages below the OC living wage of \$20.63.	
Education:	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
	<i>Comments:</i> Though all five office technology occupations typically require a high school diploma or equivalent, more than 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 five middle-skill occupations:

- Office Clerks, General (43-9061)
- Word Processors and Typists (43-9022)
- Correspondence Clerks (43-4021)
- Data Entry Keyers (43-9021)
- Office and Administrative Support Workers, All Other (43-9199)

Based on the available data there appears to be a supply gap for these office technology occupations and typical education requirements for these occupations align with a community college education. However, all annual job openings have entry-level wages below the living wage. **Therefore, due to some 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: Labor Market Endorsement Summary

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
Correspondence Clerks (43-4021)	29	Accounted for Below	OC: \$17.61	High school diploma or equivalent	37%
Data Entry Keyers (43-9021)	949	11	OC: \$14.50	High school diploma or equivalent	46%
Word Processors and Typists (43-9022)	845	Accounted for Below	OC: \$20.19	High school diploma or equivalent	43%
Office Clerks, General (43-9061)	15,291	1,201	OC: \$15.28	High school diploma or equivalent	45%
Office and Administrative Support Workers, All Other (43-9199)	1,660	Accounted for Above	OC: \$16.40	High school diploma or equivalent	40%
Total	18,773	1,212	N/A	N/A	N/A

Demand:

- The number of jobs related to these office technology occupations are projected to increase 2% through 2026, equating to 18,773 annual job openings.
- Hourly entry-level wages for these office technology occupations range from \$14.50 to \$20.19 in Orange County; all annual job openings have entry-level wages below the living wage.
- There were 19,923 online job postings for these office technology occupations over the past 12 months. The highest number of postings were for office assistants, data entry clerks, and office administrators.
- The typical entry-level education for these office technology occupations is a high school diploma or equivalent.
- Between 37% and 46% 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 976 awards conferred by 26 community colleges in Los Angeles and Orange Counties from 2018 to 2021.
- Non-community college institutions conferred an average of 236 awards from 2017 to 2020.
- Orange County community college students that exited office technology programs in the 2018-2019 academic year had a median annual wage of \$36,730 after exiting the program and 39% attained the regional living wage.
- Throughout Orange County, 67% of office technology students that exited their program in 2018-19 reported that they are working in a job closely related to their field of study.

Demand

Occupational Projections:

Exhibit 2 shows the annual percent change in jobs for these office technology occupations from 2016 through 2026. Though there was a 6% decline in employment for these office technology occupations from 2019 to 2020, which is nearly equal to the 7% decline across all occupations from 2019 to 2020 due to the COVID-19 pandemic. These office technology occupations are projected to grow at a lower rate than all occupations through 2026.

Exhibit 2: Annual Percent Change in Jobs for Office Technology Occupations, 2016-2026

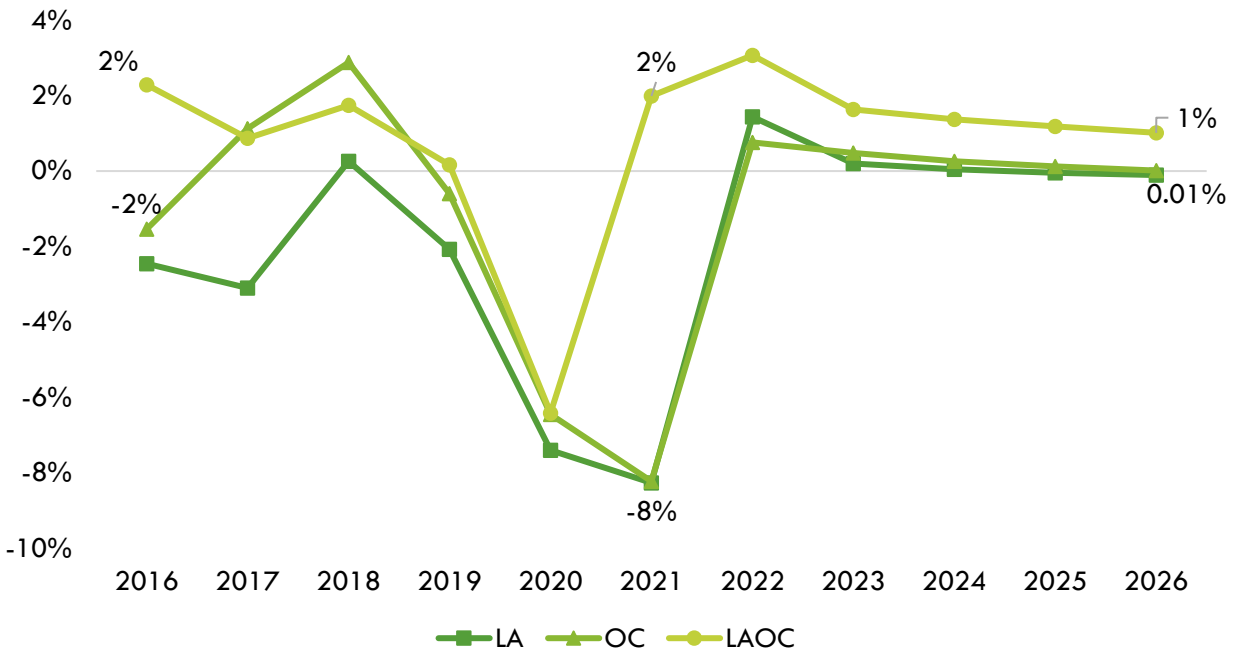


Exhibit 3 shows the five-year occupational demand projections for these office technology occupations. In Los Angeles/Orange County, the number of jobs related to these occupations is projected to increase by 2% through 2026. There is projected to be 18,773 jobs available annually.

Exhibit 3: Occupational Demand in Los Angeles and Orange Counties.¹

Geography	2021 Jobs	2026 Jobs	2021-2026 Change	2021-2026 % Change	Annual Openings
Los Angeles	103,417	105,005	1,588	2%	13,703
Orange	38,416	39,050	634	2%	5,070
Total	141,833	144,055	2,222	2%	18,773

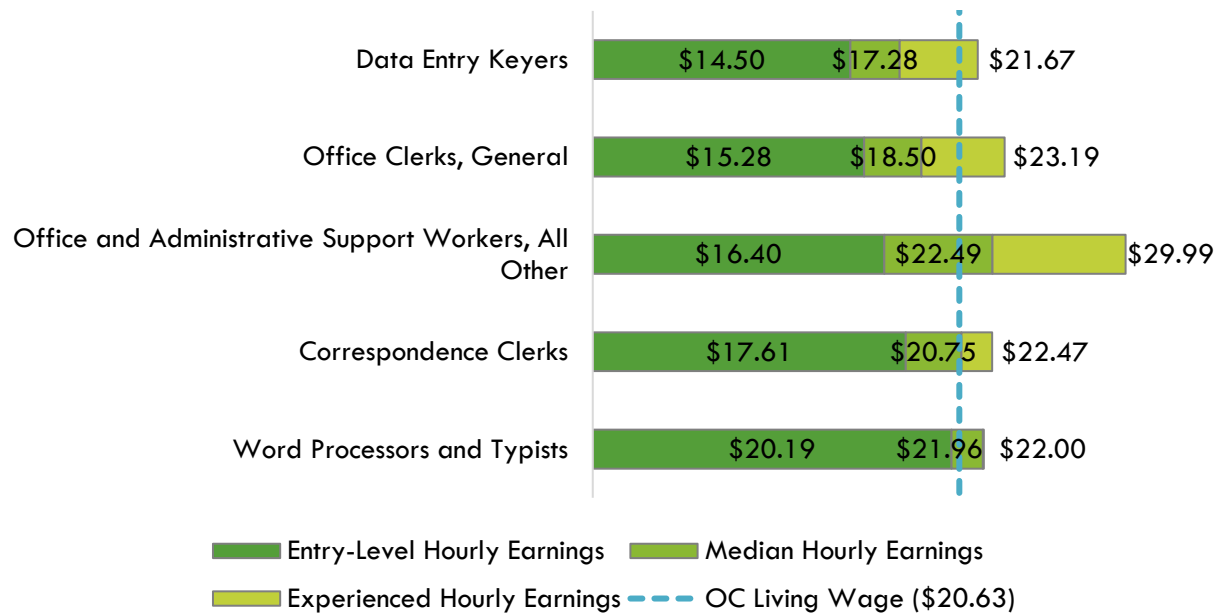
¹ Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

Wages:

The labor market endorsement in this report considers the entry-level hourly wages for these office technology occupations in Orange County as they relate to the county's living wage. Los Angeles County wages are included below to provide a complete analysis of the LA/OC region.

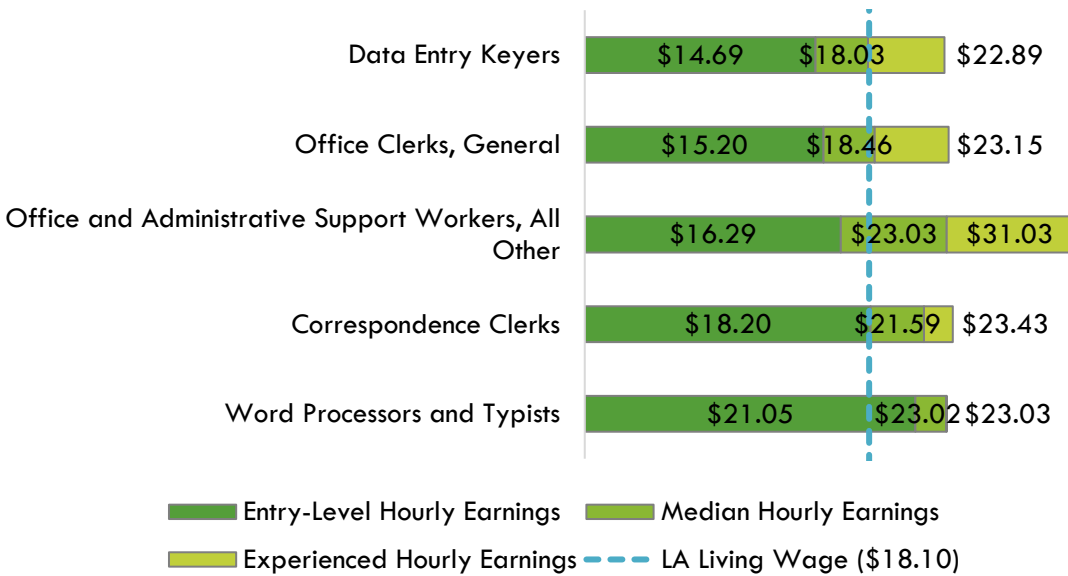
All annual openings for these office technology occupations have entry-level wages below the living wage for one adult (\$20.63 in Orange County). Typical entry-level hourly wages range between \$14.50 and \$20.19. Orange County's average wages are nearly identical to the average statewide wage of \$21.48 for these occupations. Exhibit 4 shows the wage range for each of these office technology occupations in Orange County and how they compare to the regional living wage, sorted from lowest to highest entry-level wage.

Exhibit 4: Wages by Occupation in Orange County



The majority (95%) of annual openings for these office technology occupations have entry-level wages below the living wage for one adult (\$18.10 in Los Angeles County). Typical entry-level hourly wages are in a range between \$14.69 and \$21.05. Los Angeles County's average wages are nearly identical to the average statewide wage of \$21.84 for these occupations. Exhibit 5 shows the wage range for each of these office technology occupations in Los Angeles County how they compare to the regional living wage, sorted from lowest to highest entry-level 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 or 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 through other methods such as internal promotion, word-of-mouth advertising, physical job boards, or a variety of other channels.

There were 19,923 online job postings related to these office technology occupations listed in the past 12 months. Exhibit 6 shows the number of job postings by occupation. Nearly two-thirds (66%) of job postings were for office clerks, general.

Exhibit 6: Number of Job Postings by Occupation (n=16,527)

Occupation	Job Postings	Percentage of Job Postings
Office Clerks, General	13,088	66%
Data Entry Keyers	4,300	22%
Office and Administrative Support Workers, All Other	1,691	8%
Word Processors and Typists	682	3%
Correspondence Clerks	162	1%
Total Postings	19,923	100%

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

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=19,923)

Employer	Job Postings	Percentage of Job Postings
Robert Half	589	3%
AppleOne	315	2%
Aston Carter	219	1%
California State University	128	1%
Hoag	87	0.4%
Randstad	87	0.4%
FIS	63	0.3%
Ultimate Staffing	61	0.3%
University of California	60	0.3%
Memorialcare Health System	57	0.3%

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=19,923)

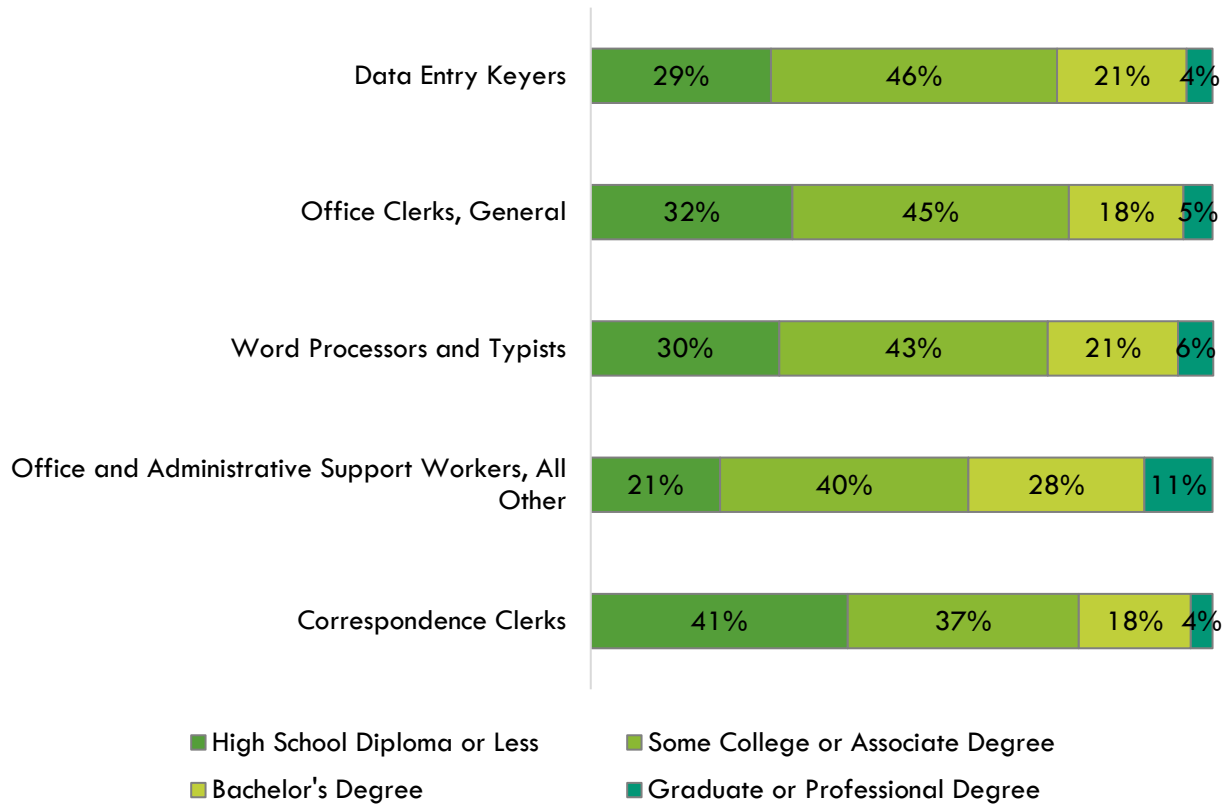
Top Specialized Skills	Top Soft Skills	Top Computer Skills
Data Entry (6,493)	Communications (7,253)	Microsoft Excel (4,220)
Invoicing (2,103)	Customer Service (6,026)	Microsoft Office (3,660)
Office Equipment (2,074)	Detail Oriented (5,505)	Microsoft Outlook (2,450)
Accounting (1,767)	Clerical Works (4,504)	Microsoft Word (1,616)
Front Office (1,727)	Microsoft Excel (4,220)	Microsoft PowerPoint (1,106)
Administrative Support (1,703)	Filing (4,197)	QuickBooks (Accounting Software) (825)
Office Supply Management (1,663)	Multitasking (3,676)	Database Systems (405)
Office Management (1,420)	Microsoft Office (3,660)	Google Workspace (282)
Billing (1,253)	Operations (2,934)	Microsoft Access (281)
Marketing (931)	Management (2,882)	Presentation Software (195)

Educational Attainment:

The Bureau of Labor Statistics (BLS) lists a high school diploma or equivalent as the typical entry-level education for all five office technology occupations in this report. However, the national-level educational attainment data indicates between 37% and 46% 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 each occupation, sorted by highest community college educational attainment to lowest.

Of the 47% of the cumulative job postings for these office technology occupations that listed a minimum education requirement in Los Angeles/Orange County, 85% (7,916) requested a high school diploma or an associate degree and 15% (1,447) requested a bachelor's degree or higher.

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: Office Technology/Office Computer Applications (0514.00). The colleges with the most completions in the region are Santa Ana, Mt. San Antonio, and LA Valley. Over the past 12 months, there were no other related program recommendation requests from regional community colleges.

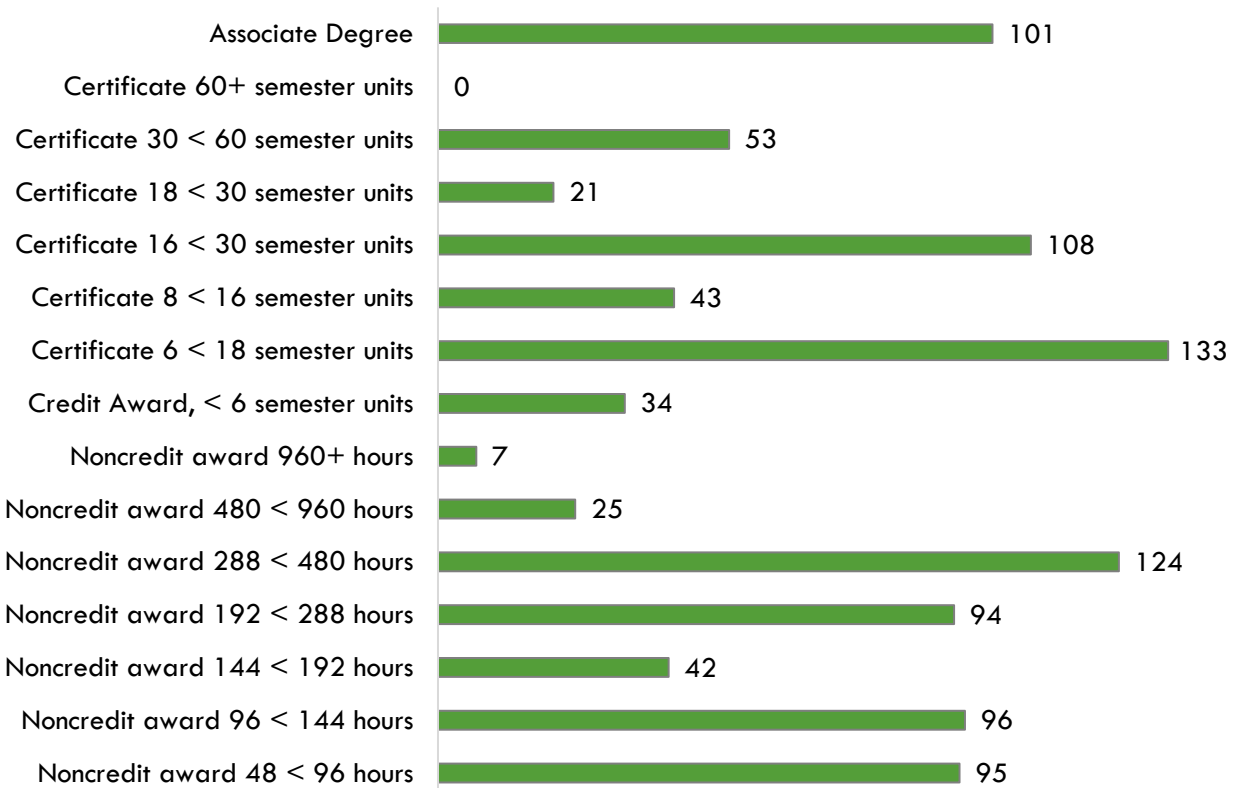
Exhibit 10: Regional Community College Awards (Certificates and Degrees), 2018-2021

TOP Code	Program	College	2018-2019 Awards	2019-2020 Awards	2020-2021 Awards	3-Year Award Average		
0514.00	Office Technology/ Office Computer Applications	Cerritos	14	10	14	13		
		Citrus	23	3	0	8		
		East LA	54	34	51	47		
		El Camino	2	2	3	3		
		Glendale	44	25	30	33		
		LA City	1	6	5	4		
		LA Harbor	5	11	7	7		
		LA Mission	23	12	11	15		
		LA Pierce	54	44	75	58		
		LA Swest	2	0	6	2		
		LA Trade	31	22	21	25		
		LA Valley	119	107	80	102		
		Long Beach	33	57	88	59		
		Mt San Antonio	75	228	183	162		
		Pasadena	38	13	59	37		
		Rio Hondo	0	0	16	5		
		Santa Monica	7	12	8	9		
		West LA	1	1	1	1		
		LA Subtotal			526	587	658	590
		Coastline	12	9	1	7		
		Cypress	17	16	8	14		
		Golden West	8	1	0	3		
		Irvine	18	16	9	15		
		North Orange Adult	70	33	37	46		
		Saddleback	11	8	7	8		
		Santa Ana	138	223	246	203		
		Santiago Canyon	106	97	71	90		
		OC Subtotal			380	403	379	386

TOP Code	Program	College	2018-2019 Awards	2019-2020 Awards	2020-2021 Awards	3-Year Award Average
Supply Subtotal/Average			906	990	1,037	976
Supply Total/Average			906	990	1,037	976

Exhibit 11 shows the annual average community college awards by type from 2018-19 through 2020-21. The plurality of the awards are for certificates between 6 and less than 18 semester units, followed by noncredit awards between 288 and less than 480 hours, and certificates between 16 and less than 30 semester units. Notably, 49% of the awards were for noncredit programs.

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 Office Technology/Office Computer Applications programs in South Orange County Community College District (SOCCCD), the Orange County Region, and California. Of the 3,967 Office Technology/Office Computer Applications students in the 2020-21 academic year, 9% (365) attended an SOCCCD college.

Additionally, SOCCCD students that exited Office Technology/Office Computer Applications programs in the 2019-20 academic year had similar median annual earnings (\$36,982) compared to all office technology students in Orange County (\$36,730). There was insufficient data to determine the percentage of SOCCCD students employed in their field of study.

**Exhibit 12: Office Technology/Office Computer Applications (0514.00)
Strong Workforce Program Metrics, 2020-21³**

SWP Metric	SOCCCD	OC Region	California
SWP Students	365	3,967	36,993
SWP Students Who Earned 9 or More Career Education Units in the District in a Single Year	34%	13%	29%
SWP Students Who Completed a Noncredit CTE or Workforce Preparation Course	0%	80%	73%
SWP Students Who Earned a Degree or Certificate or Attained Apprenticeship Journey Status	11	221	1,738
SWP Students Who Transferred to a Four-Year Postsecondary Institution (2019-20)	24	101	2,104
SWP Students with a Job Closely Related to Their Field of Study (2018-19)	Insufficient Data	67%	68%
Median Annual Earnings for SWP Exiting Students (2019-20)	\$36,982 (\$17.78)	\$36,730 (\$17.66)	\$35,418 (\$17.03)
Median Change in Earnings for SWP Exiting Students (2019-20)	16%	13%	15%
SWP Exiting Students Who Attained the Living Wage (2019-20)	39%	39%	47%

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 these office technology occupations. Exhibit 13 shows the annual and three-year average number of awards conferred by these institutions in the related Classification of Instructional Programs (CIP) Codes: Business/Office Automation/Technology/Data Entry (52.0407) and General Office Occupations and Clerical Services (52.0408). Due to different data collection periods, the most recent three-year period of available data is from 2017 to 2020. Between 2017 and 2020, non-community college institutions in the region conferred an average of 236 awards annually in related training programs.

Exhibit 13: Regional Non-Community College Awards, 2017-2020

CIP Code	Program	College	2017-2018 Awards	2018-2019 Awards	2019-2020 Awards	3-Year Award Average
52.0407	Business/Office Automation/Technology/Data Entry	Learnet Academy Inc	0	28	4	11
Supply Subtotal/Average			0	28	4	11
52.0408	General Office Occupations and Clerical Services	ABC Adult School	21	6	16	14
		CES College	6	7	0	4
		Fremont College	0	0	0	0
		Glendale Career College	0	0	0	0

³ All SWP metrics are for 2020-21 unless otherwise noted.

CIP Code	Program	College	2017-2018 Awards	2018-2019 Awards	2019-2020 Awards	3-Year Award Average
		Hacienda La Puente Adult Education	48	36	21	35
		Premiere Career College	0	0	5	2
		San Joaquin Valley College-Lancaster	0	0	7	2
		UEI College-Gardena	29	32	34	32
		United Education Institute-Anaheim	46	41	29	39
		United Education Institute-Encino	33	28	34	32
		United Education Institute-Huntington Park Campus	42	38	31	37
		United Education Institute-West Covina	29	29	26	28
		Supply Subtotal/Average	254	217	203	225
		Supply Total/Average	254	245	207	236

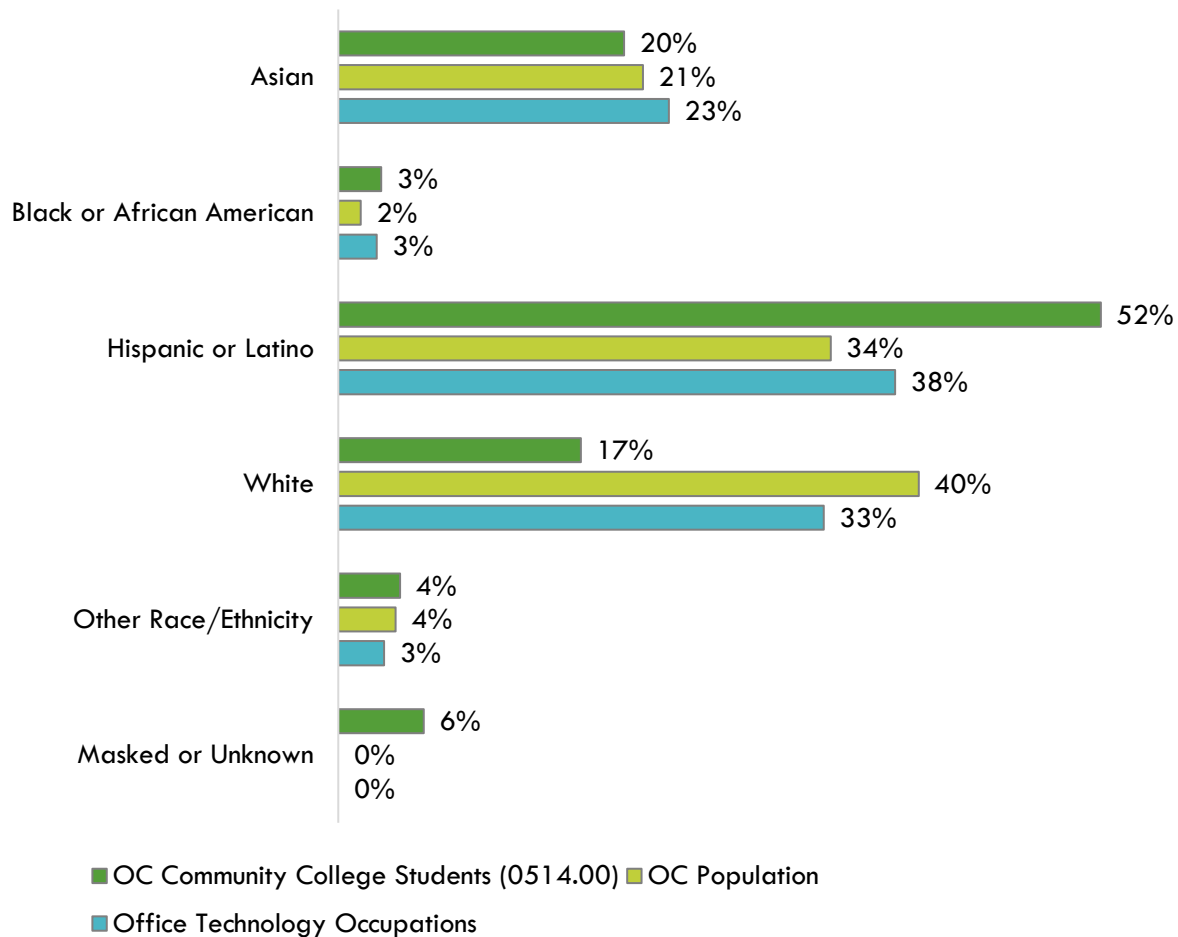
Regional Demographics

This section analyzes demographic data for Orange County community college students enrolled in office technology programs compared to the OC population, as well occupational data, for the purpose of identifying potential diversity and equity issues that can be addressed by community college programs.

Ethnicity:

Exhibit 14 shows the ethnicity of Orange County community college students enrolled in office technology programs compared to the overall Orange County population, as well as the five office technology occupations included in this report. Notably, 52% of students enrolled in office technology programs are Hispanic or Latino, which is significantly higher than the population (34%) and these office technology occupations (38%). Conversely, 17% of students in these office technology programs are white, which is significantly lower than the population (40%) and these office technology occupations (33%)

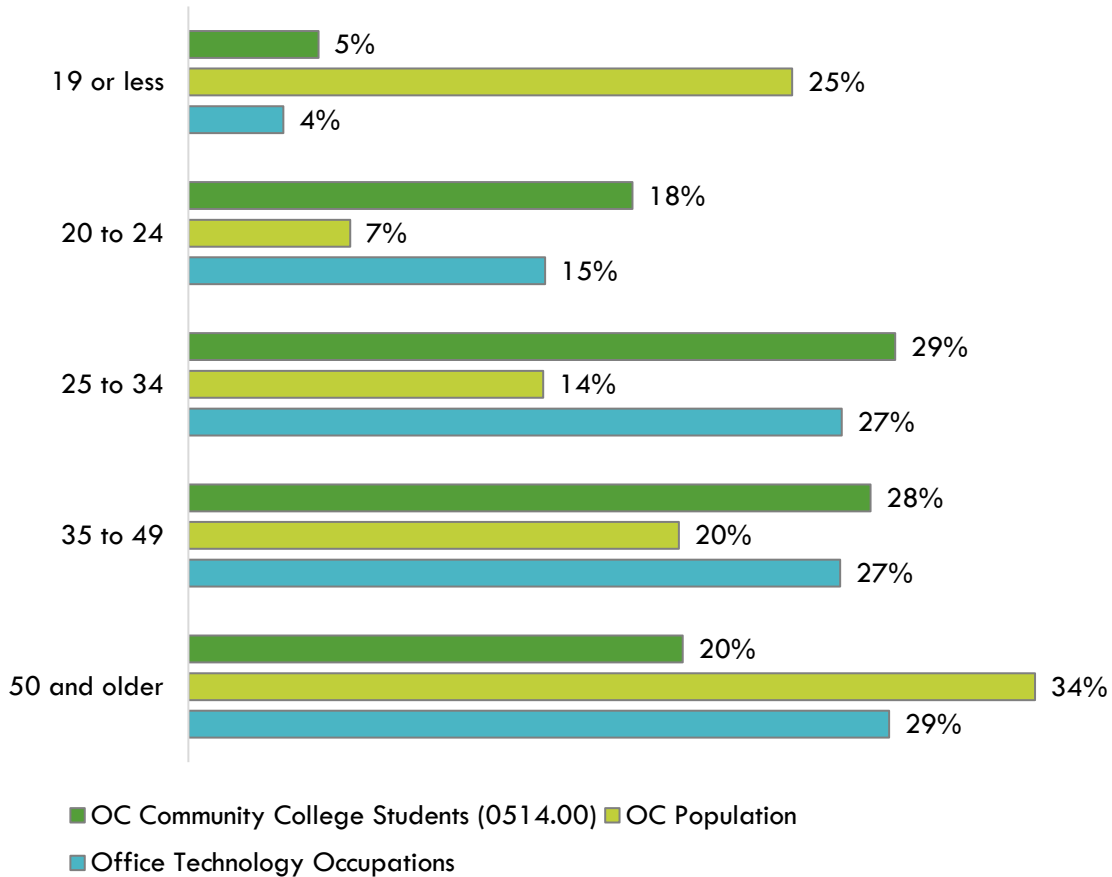
Exhibit 14: Program and County Demographics by Ethnicity



Age:

Exhibit 14 shows the age of Orange County community college students enrolled in office technology programs compared to the overall Orange County population, as well as the five office technology occupations included in this report. Generally, there is alignment between students enrolled in office technology programs when compared to workers in these office technology occupations. However, there is a significantly higher percentage of age 20 to 34 students (47%) and workers (41%) when compared to the Orange County population (21%).

Exhibit 14: Program and County Demographics by Age

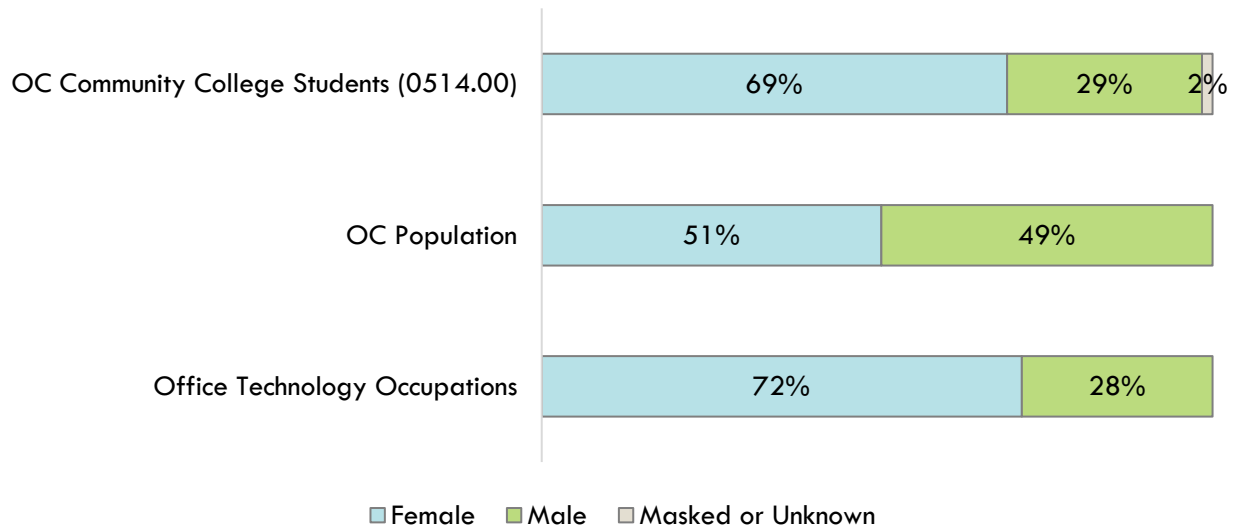


Sex:

Exhibit 15 shows the sex of Orange County community college students enrolled in office technology programs compared to the overall Orange County population as well as these office technology occupations.

Though the population is split nearly evenly, 69% of office technology students and 72% of workers in these office technology occupations are women.

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>

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