

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 276 annual job openings throughout Los Angeles and Orange counties for these middle-skill fine and applied arts occupations, which is more than the 11 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 middle-skill fine and applied arts occupations have entry-level hourly wages significantly below the OC living wage of \$20.63.	
Education:	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
	<i>Comments:</i> The majority (68%) of annual job openings for these middle-skill fine and applied arts occupations typically require a postsecondary nondegree award and 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 four fine and applied arts occupations:

- Middle-Skill
 - Desktop Publishers (43-9031)
 - Prepress Technicians (51-5111)
- Above Middle-Skill – denoted with an asterisk (*) throughout this report.
 - Museum Technicians and Conservators (25-4013)*
 - Graphic Designers (27-1024)*

Middle-skill occupations typically require a community college education while above middle-skill occupations typically require at least a bachelor’s degree. Though *graphic designers* is considered an above middle-skill occupation, a significant percentage of incumbent workers have completed some college or an associate degree as their highest level of education. Additionally, community colleges throughout the region have programs that prepare students for employment as a graphic designer. **The demand, wage information, and supply data for these programs is counted towards the above-middle**

skill occupation, graphic designers, and is, therefore, not included in the endorsement criteria. For that reason, demand and supply may be undercounted.

This proposed program is designed to prepare students for graphic design and print production roles within the museum industry. However, nearly 50% of *desktop publishers, prepress technicians, and graphic designers* are employed within the Specialized Design Services (NAICS 5414) industry group, which includes industries such as Graphic Design Services (541430). Therefore, it is likely that museums, historical sites, and other similar institutions outsource print production and graphic design work.

Opportunities for direct employment in a museum are minimal, as only 0.1% of *desktop publishers, prepress technicians, and graphic designers* are employed within the Museums, Historical Sites, and Similar Institutions industry. However, these same skills can be applied across a variety of industries and design firms that work with numerous clients. For example, Platon Digital Graphics – large format graphic design and printing firm in Los Angeles – lists the Los Angeles County Museum of Art, the Getty, and the Los Angeles Natural History Museum as clients along with Activision, Toyota, and other firms.¹ For these reasons, the labor market data throughout this report is reflective of employment across all industries, not solely the museum industry.

Based on the available data, there appears to be a supply gap for these middle-skill fine and applied arts occupations in the region and typical education requirements for these middle-skill fine and applied arts occupations align with a community college education. However, all middle-skill annual job openings have entry-level wages significantly 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
Desktop Publishers (43-9031)	88	Accounted for Below	OC: \$15.16	Associate degree	40%
Prepress Technicians and Workers (51-5111)	188	11	OC: \$18.03	Postsecondary nondegree award	39%
Middle-Skill Total	276	11	N/A	N/A	N/A
Museum Technicians and Conservators (25-4013)*	78	0	OC: \$18.09	Bachelor's degree	13%
Graphic Designers (27-1024)*	2,584	914	OC: \$22.34	Bachelor's degree	26%
Above Middle-Skill Total	2,662	914	N/A	N/A	N/A
Total	2,938	925	N/A	N/A	N/A

*Denotes an above middle-skill occupation

¹ <https://platongraphics.com/clients/>

Demand:

- The number of jobs related to these middle-skill fine and applied arts occupations are projected to decrease 9% through 2026, equating to 276 annual job openings due to retirements and replacements.
- Hourly entry-level wages for these middle-skill fine and applied arts occupations range from \$15.16 to \$18.03 in Orange County; all middle-skill annual job openings have entry-level wages significantly below the living wage.
- There were 351 online job postings for these middle-skill fine and applied arts occupations over the past 12 months. Only 1% (5) of postings included the keyword “museum.”
- The typical entry-level education for these middle-skill fine and applied arts occupations ranges from a postsecondary nondegree award to an associate degree.
- Between 39% and 40% of workers in these middle-skill occupations have completed some college or an associate degree as their highest level of educational attainment.

Supply:

- There was an average of 412 awards conferred by 4 community colleges in Los Angeles and Orange Counties from 2018 to 2021. Of those, 3% (11) were related to the middle-skill occupations.
- Non-community college institutions conferred an average of 513 awards from 2017 to 2020; all awards were related to the above middle-skill occupations.
- There was insufficient data to determine the median earnings for exiting students, the percentage of students that attained the living wage, and the percentage of students that reported that they are working in a job closely related to their field of study.

Occupational Projections:

Exhibit 2 shows the annual percent change in jobs for all four of the fine and applied arts occupations researched in this report from 2016 through 2026. Employment in these fine and applied arts occupations declined 7% from 2019 to 2020 in Orange County, which is nearly equivalent to the 6% decline across all occupations due to the COVID-19 Pandemic. Employment in these fine and applied arts occupations is projected to grow at a similar rate when compared to all occupations through 2026.

Exhibit 2: Annual Percent Change in Jobs for Fine and Applied Arts Occupations, 2016-2026



Community colleges throughout the region have programs that prepare students for employment as a graphic designer. **The demand, wage information, and supply data for these programs is counted towards the above-middle skill occupation, graphic designers, and is, therefore, not included in the middle-skill data presented below.** For that reason, demand may be undercounted.

Exhibit 3 shows the five-year occupational demand projections for these middle-skill fine and applied arts occupations. In Los Angeles/Orange County, the number of jobs related to these occupations is projected to decrease 9% through 2026. There is projected to be 276 jobs available annually due to retirements and replacements.

Exhibit 3: Middle-Skill Occupational Demand in Los Angeles and Orange Counties²

Geography	2021 Jobs	2026 Jobs	2021-2026 Change	2021-2026 % Change	Annual Openings
Los Angeles	1,487	1,322	(165)	(11%)	186
Orange	643	618	(25)	(4%)	90
Total	2,130	1,939	(190)	(9%)	276

Exhibit 4 shows the five-year occupational demand projections for these above middle-skill fine and applied arts occupations. In Los Angeles/Orange County, the number of jobs related to these occupations is projected to increase by 6% through 2026. There is projected to be 2,662 jobs available annually. Notably, 90% of the annual openings for *museum technicians and conservators* are projected to be in Los Angeles County.

Exhibit 4: Above Middle-Skill Occupational Demand in Los Angeles and Orange Counties

Geography	2021 Jobs	2026 Jobs	2021-2026 Change	2021-2026 % Change	Annual Openings
Los Angeles	21,590	22,885	1,295	6%	2,286
Orange	3,710	3,863	153	4%	376
Total	25,299	26,748	1,448	6%	2,662

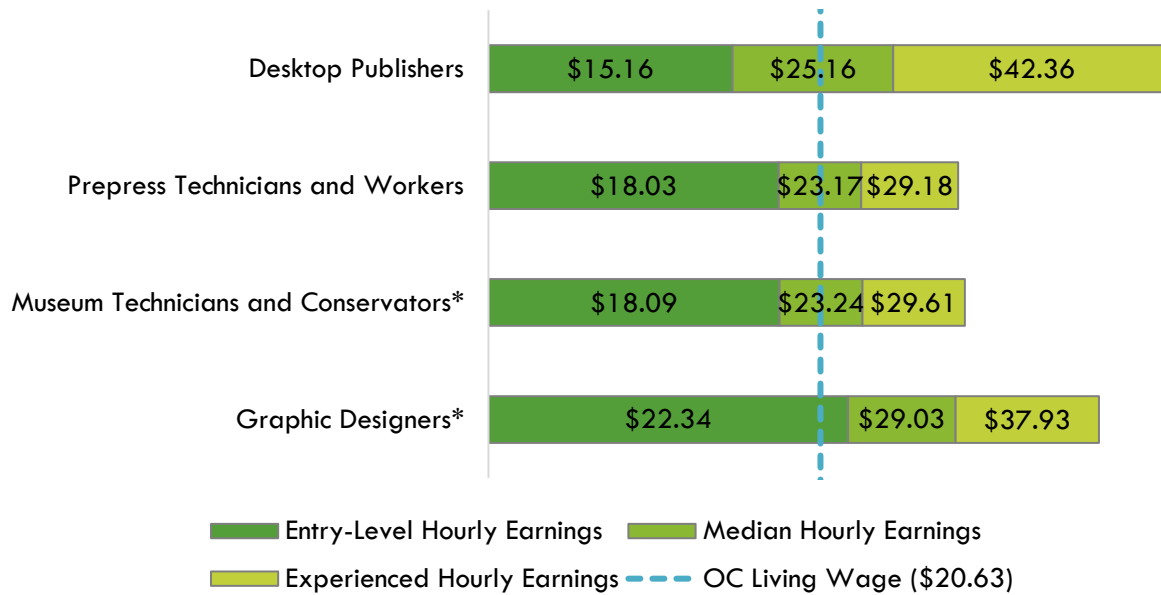
Wages:

The labor market endorsement in this report considers the entry-level hourly wages for these middle-skill fine and applied arts occupations 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.

All annual openings for these middle-skill fine and applied arts occupations have entry-level wages significantly below the living wage for one adult (\$20.63 in Orange County). Typical entry-level hourly wages range between \$15.16 and \$18.03. Orange County's average wages are below the average statewide wage of \$26.92 for these occupations. Exhibit 5 shows the wage range for each of these fine and applied arts occupations in Orange County and how they compare to the regional living wage, sorted from lowest to highest entry-level wage.

² Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

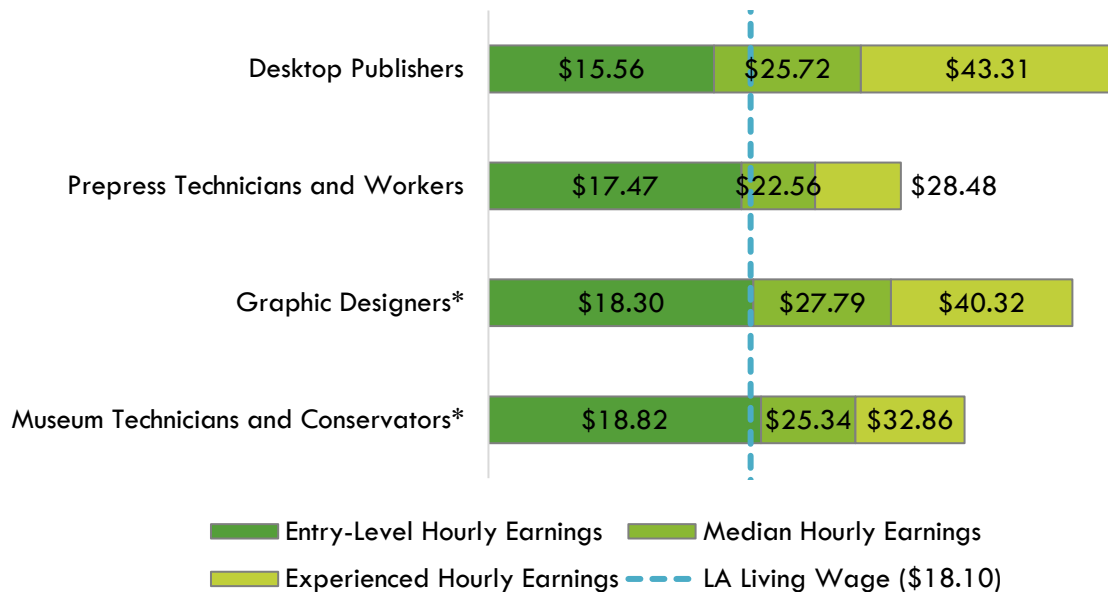
Exhibit 5: Wages by Occupation in Orange County



*Denotes an above middle-skill occupation

All annual openings for these middle-skill fine and applied arts 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 \$15.56 and \$17.47. Los Angeles County’s average wages are above the average statewide wage of \$26.92 for these occupations. Exhibit 6 shows the wage range for each of these fine and applied arts occupations in Los Angeles County how they compare to the regional living wage, sorted from lowest to highest entry-level wage.

Exhibit 6: Wages by Occupation in Los Angeles County



*Denotes an above middle-skill occupation

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.³ 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 4,908 online job postings related to these fine and applied arts occupations listed in the past 12 months. Of those, 7% (351) were for middle-skill fine and applied arts occupations. Of the 351 job postings for these middle-skill occupations, only 1% (5) included the keyword "museum" in the posting. Similarly, of the 4,557 online job postings for the above middle-skill occupations, 2% (74) include the keyword "museum." Exhibit 7 shows the number of job postings by occupation.

Exhibit 7: Number of Job Postings by Occupation (n=4,908)

Occupation	Job Postings	Percentage of Job Postings
Graphic Designers*	4,467	91%
Prepress Technicians and Workers	306	6%
Museum Technicians and Conservators*	90	2%
Desktop Publishers	45	1%
Total Postings	4,908	100%

*Denotes an above middle-skill occupation

The top employers for the middle-skill fine and applied arts occupations in the region, by number of job postings, are shown in Exhibit 8. The three employers that included "museum" in the job postings were Mousetrappe, Platon Graphics, and CSU Long Beach. Mousetrappe and Platon Graphics produce and print graphics for museums and other entertainment venues.

³ K. R. Chowdhary, *Fundamentals of Artificial Intelligence* (Basingstoke: Springer Nature, 2020), <https://link.springer.com/book/10.1007/978-81-322-3972-7>.

Exhibit 8: Top Middle-Skill Employers by Number of Job Postings (n=351)

Employer	Job Postings	Percentage of Job Postings
Disneyland Resort	29	8%
Vallarta Supermarkets	15	4%
Canon Business Process Services	10	3%
Crafty Apes	8	2%
Disney	6	2%
Randstad	6	2%
NBC	5	1%
Parks	5	1%
Printing Industries Association	5	1%
Caltronics	4	1%

The top employers for the above middle-skill fine and applied arts occupations in the region, by number of job postings, are shown in Exhibit 9. Examples of employers that included “museum” in the job posting include museums (such as the J. Paul Getty Trust and Grammy Museum) as well as private companies that produce and print graphics for museums and other entertainment venues.

Exhibit 9: Top Above Middle-Skill Employers by Number of Job Postings (n=4,557)

Employer	Job Postings	Percentage of Job Postings
Robert Half	70	2%
Disney	53	1%
24 Seven	42	1%
Creative Circle	41	1%
Onward Search	39	1%
Aquent	32	1%
Randstad	30	1%
NBC	20	0.4%
Northrop Grumman	20	0.4%
Aerotek	19	0.4%

The top specialized, soft, and computer skills listed by those most frequently mentioned in job postings (denoted in parentheses) are shown for these middle-skill occupations in Exhibit 10.

Exhibit 10: Top Skills for Middle-Skill Occupations by Number of Job Postings (n=351)

Top Specialized Skills	Top Soft Skills	Top Computer Skills
Adobe Photoshop (56)	Communications (93)	Adobe Photoshop (56)
Visual Effects (43)	Detail Oriented (89)	Microsoft Excel (47)
Compositing (40)	Multitasking (55)	Adobe InDesign (30)
Furniture Cleaning (37)	Writing (50)	Adobe Illustrator (29)
Prepress (37)	Microsoft Excel (47)	Microsoft Office (29)
Painting (36)	Management (44)	Microsoft PowerPoint (27)
Caulking (35)	Problem Solving (43)	Mocha (JavaScript Framework) (18)

Top Specialized Skills	Top Soft Skills	Top Computer Skills
Color Mixing (35)	Ability To Meet Deadlines (39)	Microsoft Word (15)
Drywall (Installation And Repair) (35)	Organizational Skills (34)	Microsoft Outlook (14)
Safety Standards (35)	Customer Service (32)	Adobe Creative Suite (10)

The top specialized, soft, and computer skills listed by those most frequently mentioned in job postings (denoted in parentheses) are shown for these above middle-skill occupations in Exhibit 11.

Exhibit 11: Top Skills for Above Middle-Skill Occupations by Number of Job Postings (n=4,557)

Top Specialized Skills	Top Soft Skills	Top Software and Computer Skills
Graphic Design (2,534)	Communications (2,105)	Adobe Photoshop (2,527)
Adobe Photoshop (2,524)	Detail Oriented (1,559)	Adobe Illustrator (2,501)
Adobe Illustrator (2,498)	Presentations (899)	Adobe InDesign (1,713)
Marketing (1,949)	Packaging And Labeling (827)	Adobe Creative Suite (1,511)
Adobe InDesign (1,710)	Ability To Meet Deadlines (749)	Adobe After Effects (607)
Adobe Creative Suite (1,511)	Self-Motivation (727)	Microsoft PowerPoint (586)
Typography (1,218)	Time Management (680)	Microsoft Office (502)
Branding (817)	Sales (676)	HyperText Markup Language (HTML) (432)
Illustration (794)	Multitasking (631)	Microsoft Excel (410)
Photography (640)	Innovation (593)	Cascading Style Sheets (CSS) (342)

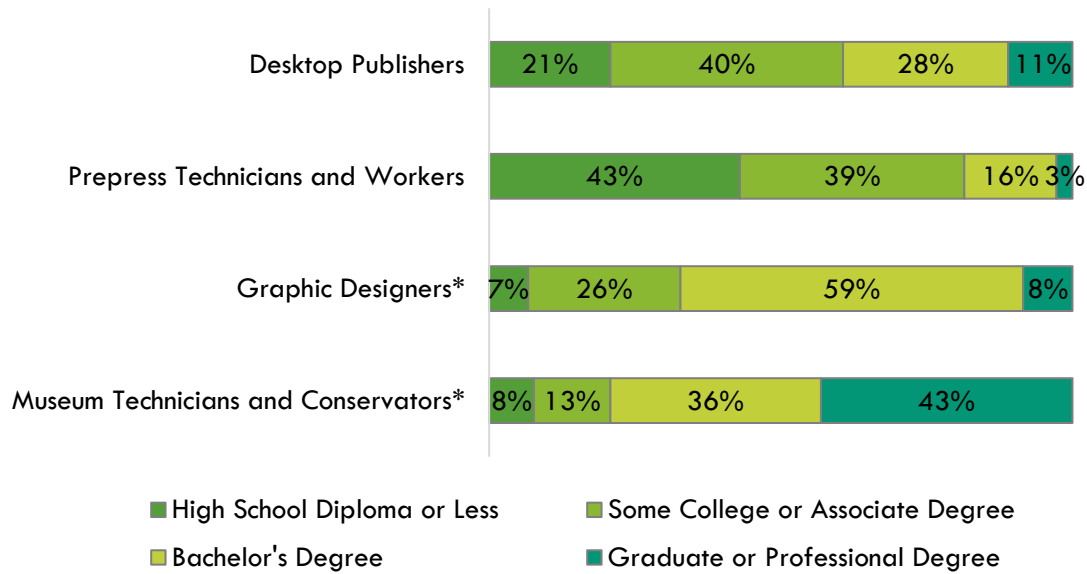
Educational Attainment:

The Bureau of Labor Statistics (BLS) lists a postsecondary nondegree award for *prepress technicians*; an associate degree for *desktop publishers*; and a bachelor's degree for *museum technicians and conservators* and *graphic designers*. The national-level educational attainment data indicates that between 39% and 40% of workers in the middle-skill occupations have completed some college or an associate degree as their highest level of education. Between 13% and 26% of workers in the above middle-skill occupations have completed some college or an associate degree. Exhibit 12 shows the educational attainment for each occupation, sorted by highest community college educational attainment to lowest.

Of the 38% of the cumulative job postings for these middle-skill fine and applied arts occupations that listed a minimum education requirement in Los Angeles/Orange County, 61% (81) requested a high school diploma or an associate degree and 39% (51) requested a bachelor's degree.

Conversely, of the 52% of the postings for these above middle-skill fine and applied arts occupations that listed a minimum education requirement, 80% (1,896) requested a bachelor's degree and 20% (488) requested a high school diploma or an associate degree.

Exhibit 12: National-level Educational Attainment for Occupations



*Denotes an above middle-skill occupation

Educational Supply

Community College Supply:

Exhibit 13 shows the three-year average number of awards conferred by community colleges in the related TOP codes: Digital Media (0614.00), Website Design and Development (0614.30), Desktop Publishing (0614.50), Printing and Lithography (0936.00), Applied Design (1009.00), Commercial Art (1013.00), Graphic Art and Design (1030.00), and Other Fine and Applied Arts (1099.00).

Only two TOP codes - Desktop Publishing (0614.50) and Printing and Lithography (0936.00) – are directly related to the two middle-skill occupations. Additionally, 20 community colleges have programs under the other six TOP codes, all of which prepare students for employment as a graphic designer. Therefore, the supply data for these programs is counted towards *graphic designers* and supply for the middle-skill occupations may be undercounted.

The colleges with the most completions in the region are: Santa Monica, LA Trade, and Golden West. Over the past 12 months, there were no other related program recommendation requests from regional community colleges.

Exhibit 13: 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
0614.00	Digital Media	Glendale	0	1	0	0
		LA Mission	1	4	5	3
		LA Trade	19	11	18	16
		Pasadena	0	0	3	1
		Rio Hondo	0	2	1	1
		LA Subtotal	20	18	27	21

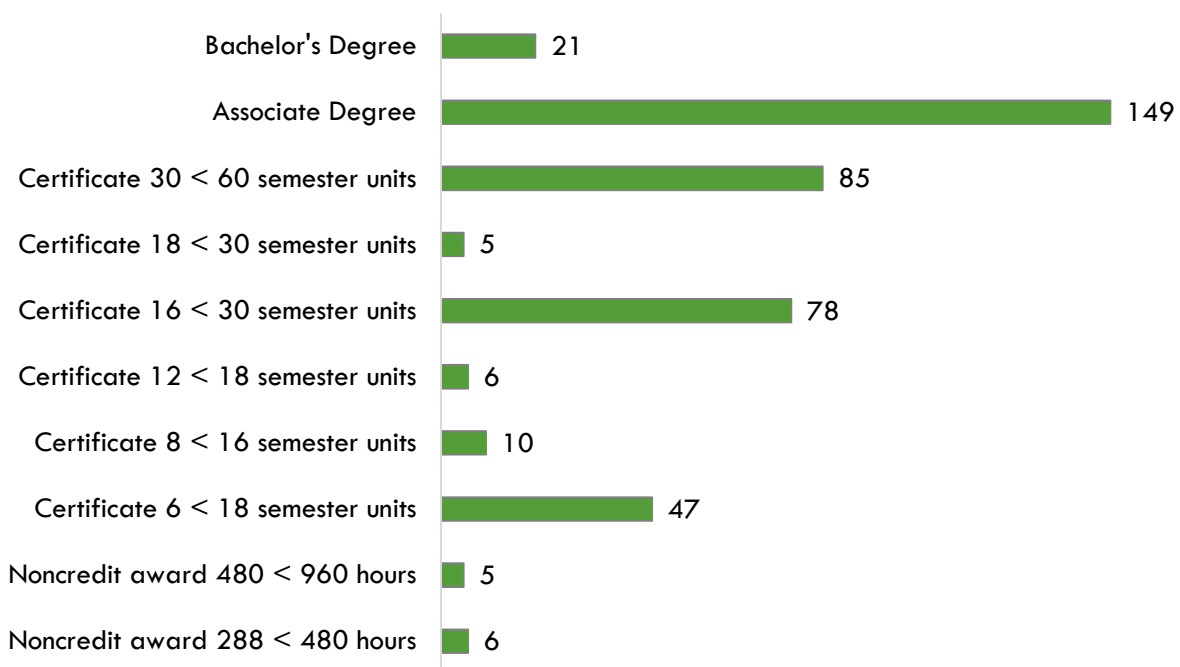
TOP Code	Program	College	2018-2019 Awards	2019-2020 Awards	2020-2021 Awards	3-Year Award Average
		Coastline	3	0	3	2
		Cypress	0	0	2	1
		Golden West	10	10	7	8
		Irvine	9	1	6	5
		Saddleback	0	0	1	0
		Santa Ana	0	1	6	2
		OC Subtotal	22	12	25	18
		Supply Subtotal/Average	42	30	52	39
0614.30	Website Design and Development	LA Pierce	3	2	4	3
		Mt San Antonio	9	7	6	7
		Pasadena	0	1	1	1
		Santa Monica	0	2	3	2
		LA Subtotal	12	12	14	13
		Coastline	1	1	1	1
		Fullerton	3	0	1	2
		Irvine	3	0	5	2
		Orange Coast	0	9	7	5
		Saddleback	7	2	7	5
		Santa Ana	0	2	1	1
		Santiago Canyon	24	3	6	11
		Coastline	1	1	1	1
		OC Subtotal	38	17	28	27
				Supply Subtotal/Average	50	29
0614.50	Desktop Publishing	East LA	1	1	0	1
		LA Subtotal	1	1	0	1
		Fullerton	1	2	2	2
		Santa Ana	7	0	9	5
		OC Subtotal	8	2	11	7
		Supply Subtotal/Average	9	3	11	8
0936.00	Printing and Lithography	-	-	-	-	-
		LA Subtotal	-	-	-	-
		Fullerton	3	0	1	1
		Saddleback	0	4	0	2
		OC Subtotal	3	4	1	3
		Supply Subtotal/Average	3	4	1	3
1009.00	Applied Design	-	-	-	-	-
		LA Subtotal	-	-	-	-

TOP Code	Program	College	2018-2019 Awards	2019-2020 Awards	2020-2021 Awards	3-Year Award Average
		Orange Coast	49	48	26	40
		OC Subtotal	49	48	26	40
		Supply Subtotal/Average	245	218	186	214
1013.00	Commercial Art	LA Trade	44	23	22	29
		LA Valley	4	7	14	8
		Pasadena	6	0	2	3
		Rio Hondo	4	0	0	1
		LA Subtotal	58	30	38	41
		Cypress	2	1	0	1
		Fullerton	7	2	5	5
		Orange Coast	6	5	1	4
		Santa Ana	4	1	3	3
		OC Subtotal	19	9	9	13
				Supply Subtotal/Average	77	39
1030.00	Graphic Art and Design	Cerritos	11	11	14	12
		East LA	18	3	8	10
		El Camino	0	1	0	0
		Glendale	6	4	9	6
		LA City	6	22	8	12
		LA Pierce	22	15	13	16
		LA Valley	2	5	1	2
		Long Beach	1	2	8	4
		Mt San Antonio	15	11	20	15
		Pasadena	9	7	15	11
		Rio Hondo	30	20	28	25
		Santa Monica	31	50	43	41
		LA Subtotal	151	151	167	154
		Cypress	0	0	4	1
		Fullerton	12	12	14	13
		Golden West	57	32	20	36
		Irvine	5	16	21	14
		Saddleback	23	15	19	19
		Santa Ana	4	3	3	3
		Santiago Canyon	5	1	4	3
OC Subtotal	106	79	85	89		
		Supply Subtotal/Average	257	230	252	243
1099.00		El Camino	3	5	4	4

TOP Code	Program	College	2018-2019 Awards	2019-2020 Awards	2020-2021 Awards	3-Year Award Average
	Other Fine and Applied Arts	Santa Monica	22	15	26	21
		LA Subtotal	25	20	30	25
		-	-	-	-	-
		OC Subtotal	-	-	-	-
	Supply Subtotal/Average		25	20	30	25
	Supply Subtotal/Average		463	355	436	412

Exhibit 14 shows the annual average community college awards by type from 2018-19 through 2020-21. The plurality of the awards are for associate degrees and certificates of 16 to less than 30 semester units. Additionally, an annual average of 21 bachelor's degrees were conferred by Santa Monica College's Interaction Design program.⁴

Exhibit 14: Annual Average Community College Awards by Type, 2018-2021



Community College Student Outcomes:

Exhibit 15 shows the Strong Workforce Program (SWP) metrics for fine and applied arts programs in California. Currently, North Orange Continuing Education (NOCE) is the only institution in Orange County that offers fine and applied arts courses. Therefore, the metrics for NOCCCD and Orange County are the same. Furthermore, the courses offered by NOCE are courses for older adults and include content such as quilting, knitting, and painting. Because students in these programs are not training to enter the workforce, this section does not include student outcomes for both NOCCCD and the Orange County region.

⁴ <https://ixd.smc.edu/>

Exhibit 15: Fine and Applied Arts (1099.00) Strong Workforce Program Metrics, 2020-21⁵

SWP Metric	California
SWP Students	2,899
SWP Students Who Earned 9 or More Career Education Units in the District in a Single Year	5%
SWP Students Who Completed a Noncredit CTE or Workforce Preparation Course	74%
SWP Students Who Earned a Degree or Certificate or Attained Apprenticeship Journey Status	33
SWP Students Who Transferred to a Four-Year Postsecondary Institution (2019-20)	59
SWP Students with a Job Closely Related to Their Field of Study (2018-19)	0%
Median Annual Earnings for SWP Exiting Students (2019-20)	\$19,676 (\$9.46)
Median Change in Earnings for SWP Exiting Students (2019-20)	33%
SWP Exiting Students Who Attained the Living Wage (2019-20)	15%

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 fine and applied arts occupations. Exhibit 16 shows the annual and three-year average number of awards conferred by these institutions in the related Classification of Instructional Programs (CIP) Codes: Computer Graphics (11.0803), Digital Arts (50.0102), Commercial and Advertising Art (50.0402), Industrial and Product Design (50.0404), and Graphic Design (50.0409)

Due to different data collection periods, the most recent three-year period of available data is from 2017 to 2020. Between 2017 and 2020, eight colleges in the region conferred an average of 513 awards annually in related training programs.

Exhibit 16: Regional Non-Community College Awards, 2017-2020

CIP Code	Program	College	2017-2018 Awards	2018-2019 Awards	2019-2020 Awards	3-Year Award Average
11.0803	Computer Graphics	ABC Adult School	5	4	4	4
		Los Angeles Pacific College	0	33	0	11

⁵ 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
Supply Subtotal/Average			5	37	4	15
50.0102	Digital Arts	Los Angeles Academy of Figurative Art	0	3	4	2
		Los Angeles Pacific College	0	0	4	1
		Marymount California University	17	15	3	12
		Otis College of Art and Design	92	69	48	70
		University of Southern California	16	14	15	15
		Woodbury University	4	1	2	2
Supply Subtotal/Average			129	102	76	102
50.0402	Commercial and Advertising Art	Art Center College of Design	15	10	16	14
		Mount Saint Mary's University	0	0	1	0
		Woodbury University	13	13	10	12
Supply Subtotal/Average			242	229	166	213
50.0404	Industrial and Product Design	California State University-Long Beach	31	37	34	34
		FIDM-Fashion Institute of Design & Merchandising-Los Angeles	28	34	31	31
		Otis College of Art and Design	30	18	15	21
Supply Subtotal/Average			89	89	80	86
50.0409	Graphic Design	Art Center College of Design	50	73	67	63
		California Institute of the Arts	11	9	12	11
		California State Polytechnic University-Pomona	128	92	89	103
		Chapman University	19	17	27	21
		Concordia University-Irvine	9	7	10	9
		East San Gabriel Valley Regional Occupational Program	0	0	0	0
		FIDM-Fashion Institute of Design & Merchandising-Los Angeles	36	38	38	37
		Laguna College of Art and Design	21	24	25	24

CIP Code	Program	College	2017-2018 Awards	2018-2019 Awards	2019-2020 Awards	3-Year Award Average
		Los Angeles Film School	0	3	28	10
		Los Angeles Pacific College	0	1	8	3
		New York Film Academy	3	3	0	2
		Otis College of Art and Design	0	1	0	0
		Platt College-Los Angeles	3	0	0	1
		University of La Verne	0	0	0	0
Supply Subtotal/Average			280	268	304	284
Supply Subtotal/Average			531	519	491	513

Regional Demographics

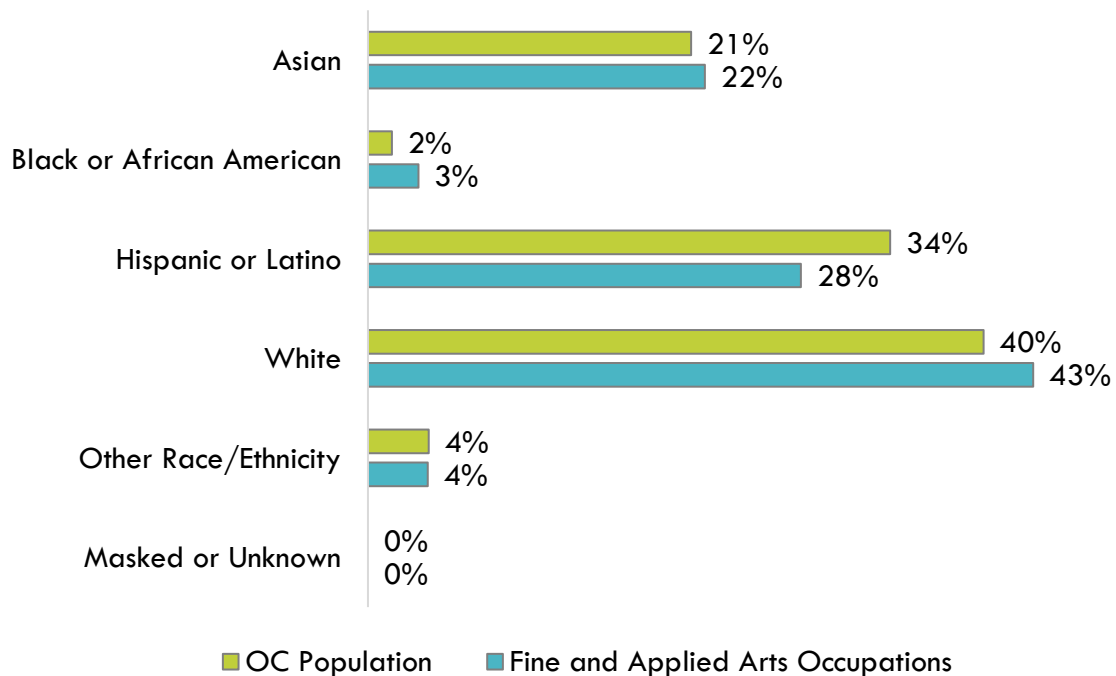
This section analyzes demographic data for the Orange County population, as well occupational data, for the purpose of identifying potential diversity and equity issues that can be addressed by community college programs.

As noted in the student outcomes section, NOCE is the only institution in Orange County that offers fine and applied arts courses. The courses offered by NOCE are courses for older adults and include content such as quilting, knitting, and painting. Because students in these programs are not training to enter the workforce, this section does not include student demographics.

Ethnicity:

Exhibit 17 shows the ethnicity of the Orange County population compared to the four fine and applied arts occupations included in this report. Notably, workers employed in these fine and applied arts occupations are largely representative of the Orange County population.

Exhibit 17: County and Occupational Demographics by Ethnicity

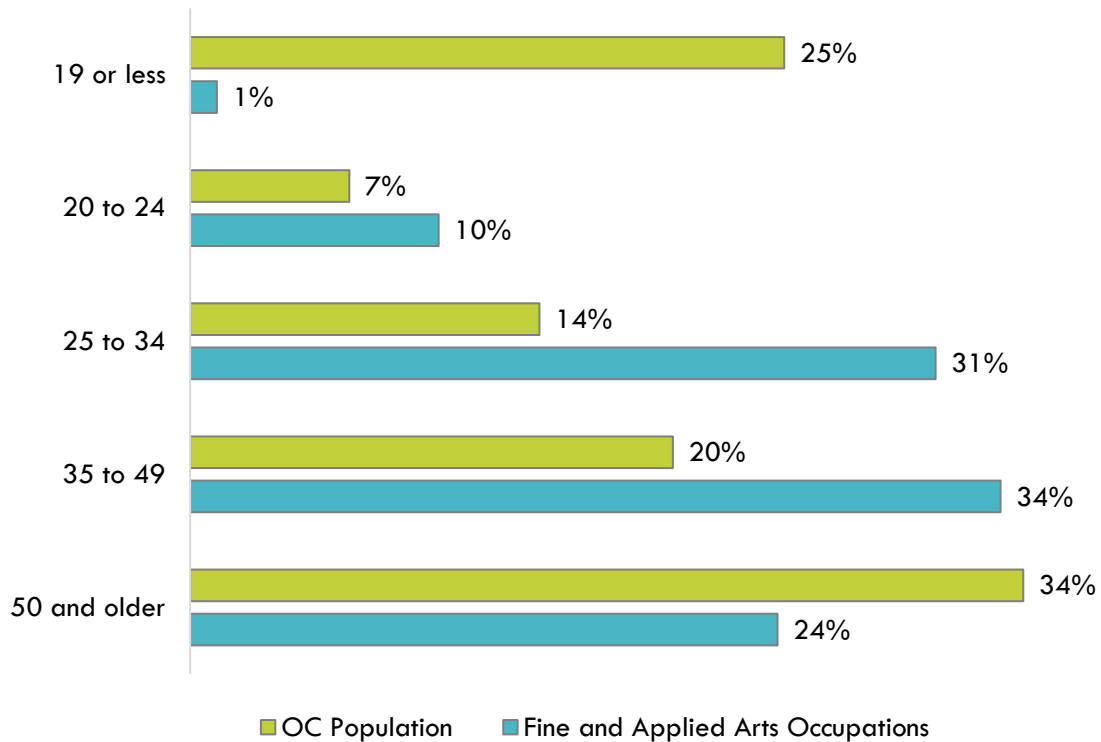


Age:

Exhibit 18 shows the age of the Orange County population compared to the four fine and applied arts occupations included in this report.

The plurality (34%) of workers in these fine and applied arts occupations are 35 to 49, which is significantly higher than the population. Conversely, only 1% of workers in these fine and applied arts occupations are 19 or less, which is significantly lower than the population (25%).

Exhibit 18: County and Occupational Demographics by Age

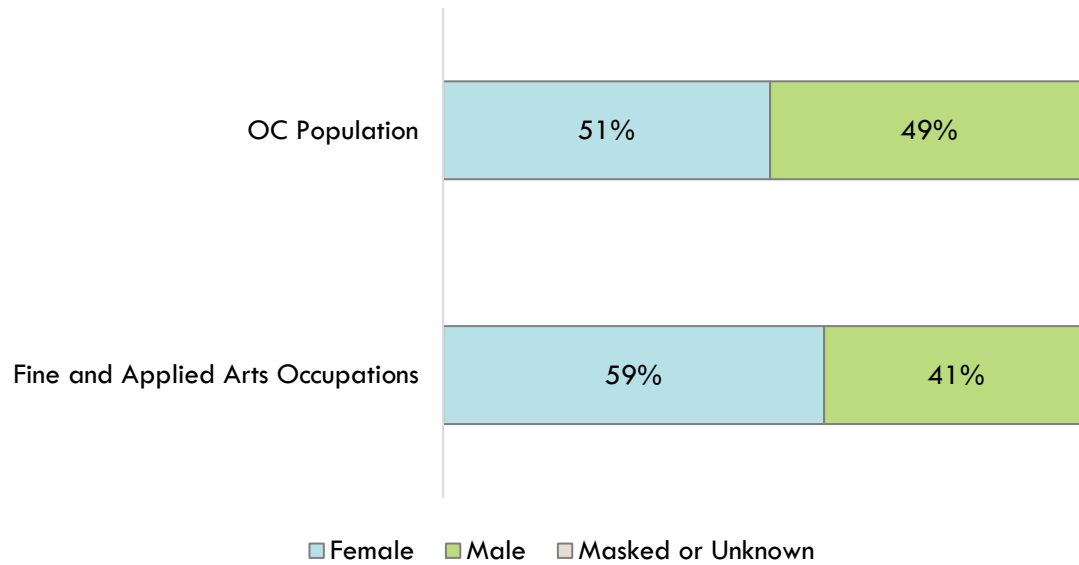


Sex:

Exhibit 19 shows the sex of the Orange County population as well as these fine and applied arts occupations.

Though the Orange County population is split nearly evenly between men and women, 59% of workers in these fine and applied arts occupations are women.

Exhibit 19: County and Occupational 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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