

Labor Market Analysis for Program Modification:
 1006.00/Technical Theater
 (Costume Wardrobe Skills Certificate)
 (Costume Cutter, Draper, and Stitcher Certificate)
 (Assistant Costume Designer Certificate)

Orange County Center of Excellence, January 2025



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:	Comments: there is projected to be 807 annual job openings throughout Los Angeles and Orange counties for these costuming occupations, which is more than the 610 awards conferred by educational institutions.		
	Yes <input checked="" type="checkbox"/>		No <input type="checkbox"/>
Self-Sufficiency Standard Living Wage ¹ :	Comments: Over half (55%) of annual job openings for these costuming occupations have entry-level hourly wages above the OC living wage of \$27.13.		
	Yes <input checked="" type="checkbox"/>		No <input type="checkbox"/>
Education:	Comments: though over half (52%) of annual job openings for these costuming occupations require a bachelor's degree, between 26% and 36% of workers in the field have completed some college or an associate degree as their highest level of education.		
Additional Considerations			
	Yes <input type="checkbox"/>		No <input checked="" type="checkbox"/>
Emerging Occupation(s):	Comments: N/A		
	Yes <input type="checkbox"/>		No <input checked="" type="checkbox"/>
OC Resilient Job(s):	Comments: See Resilient Jobs and US News & World Report Best Jobs		
	Yes <input type="checkbox"/>		No <input checked="" type="checkbox"/>
U.S. News & World Report 2024 Best Jobs List ² :	Comments: See Resilient Jobs and US News & World Report Best Jobs		

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 two costuming occupations:

- Below Middle-Skill – denoted with an asterisk (*) throughout this report.
 - *Costume Attendants (39-3092)**

¹ At the direction of the California Community College Chancellor's Office, the living wage endorsement criteria in this report uses the University of Washington's Center for Women's Welfare Self-Sufficiency Standard, which the COE refers to as a living wage, to determine Orange County's living wage of \$27.13, last updated in March 2024.

² "100 Best Jobs of 2024," U.S. News & World Report, accessed May 7, 2024, <https://money.usnews.com/careers/best-jobs/rankings/the-100-best-jobs>.

- Middle-Skill
 - Fashion Designer (27-1022)

Based on the available data there appears to be a supply gap for these costuming occupations and typical education requirements for these occupations align with a community college education. Additionally, over half (55%) of annual job openings have entry-level wages above the Self-Sufficiency Standard living wage. **Therefore, due to all 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
Costume Attendants (39-3092)*	LA: 309				
	OC: 78	0	OC: \$20.19	High school diploma or equivalent	36%
	TTL: 387				
Below Middle-Skill Total	387	0	N/A	N/A	N/A
Fashion Designers (27-1022)	LA: 324	LA: 434			
	OC: 95	OC: 107	OC: \$27.76	Bachelor's degree	26%
	TTL: 420	TTL: 542			
Middle-Skill Total	420	542	N/A	N/A	N/A
Total	807	542	N/A	N/A	N/A

Demand:

- The number of jobs related to these costuming occupations is projected to increase by 1% through 2028, equating to 807 annual job openings.
- Hourly entry-level wages for these costuming occupations range from \$20.19 to \$27.76 in Orange County; 55% of annual job openings have entry-level wages above the Self-Sufficiency Standard living wage.
- There were 995 online job postings for these costuming occupations over the past 12 months. The highest number of postings were for fashion designers, technical designers, and apparel designers.
- The typical entry-level education for these costuming occupations ranges from a high school diploma or equivalent to a bachelor's degree.
- Between 26% and 36% of workers have completed some college or an associate degree as their highest level of educational attainment.

Supply:

- There was an average of 381 awards conferred by 18 community colleges in Los Angeles County and Orange County from 2020 to 2023.
- Non-community college institutions conferred an average of 230 awards from 2019 to 2022. None of these awards were conferred by Orange County institutions.

- Orange County community college students who exited technical theater programs in the 2020-21 academic year had a median annual wage of \$27,520 (\$13.23 per hour) after exiting the program, and 25% attained the regional living wage.
- Throughout Orange County, 83% of technical theater students that exited their program in 2019-20 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 the two costuming occupations researched in this report from 2018 through 2028. Though there was a 7% decline across all occupations in Los Angeles and Orange counties from 2019 to 2020 due to the COVID-19 pandemic, employment for these costuming occupations decreased by 13% in Orange County during the same period.

In the two years preceding the pandemic, employment for these occupations increased in Orange County, with 2019 increasing at a slower rate than 2018. After a decrease in employment in 2020 and 2021, employment increased in 2022 but declined through 2023. Employment for these two occupations in Orange County is projected to grow at a slightly higher rate relative to all occupations in Los Angeles and Orange counties.

Exhibit 2: Annual Percent Change in Jobs for Costuming Occupations, 2018-2028

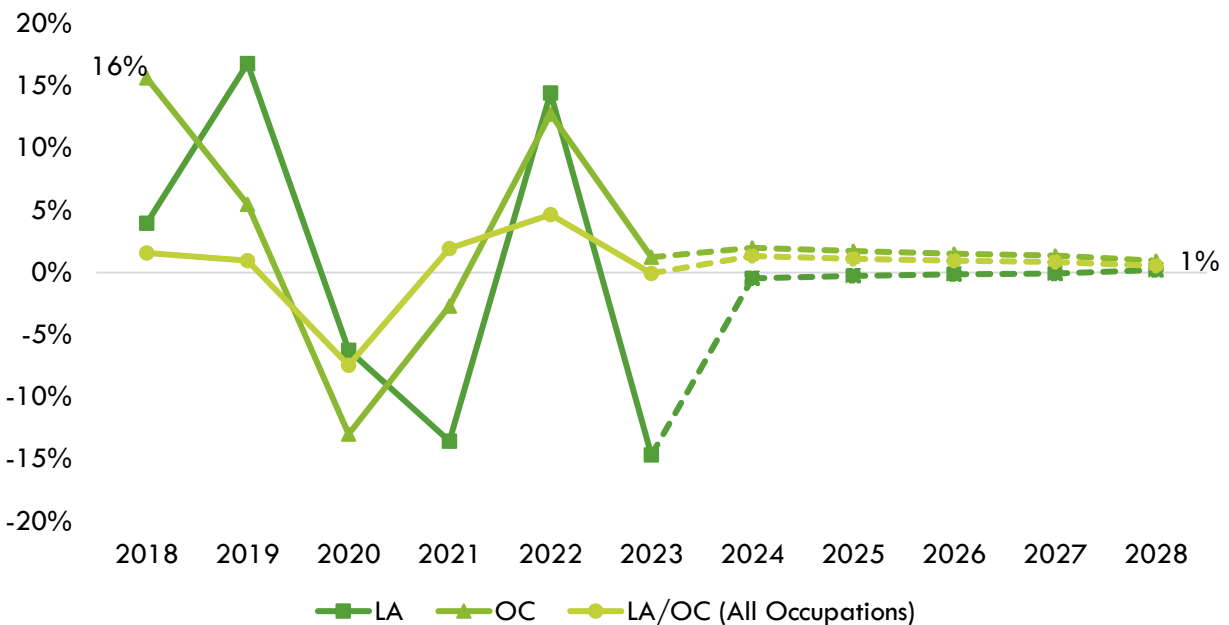


Exhibit 3 shows the five-year occupational demand projections for *costume attendants** In Los Angeles/Orange County, the number of jobs related to this occupation is projected to increase by 7% through 2028. There is projected to be 387 jobs available annually.

Exhibit 3: Below Middle-Skill Occupational Demand in Los Angeles and Orange Counties³

Geography	2023 Jobs	2028 Jobs	2023-2028 Change	2023- 2028 % Change	Annual Openings
Los Angeles	1,054	1,102	48	5%	309
Orange	226	271	45	20%	78
Total	1,280	1,373	93	7%	387

Exhibit 4 shows the five-year occupational demand projections for *fashion designers*. In Los Angeles/Orange County, the number of jobs related to this occupation is projected to decrease by 1% through 2028. There is projected to be 420 jobs available annually.

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

Geography	2023 Jobs	2028 Jobs	2023-2028 Change	2023- 2028 % Change	Annual Openings
Los Angeles	3,688	3,604	(83)	(2%)	324
Orange	936	981	45	5%	95
Total	4,624	4,585	(38)	(1%)	420

Wages:

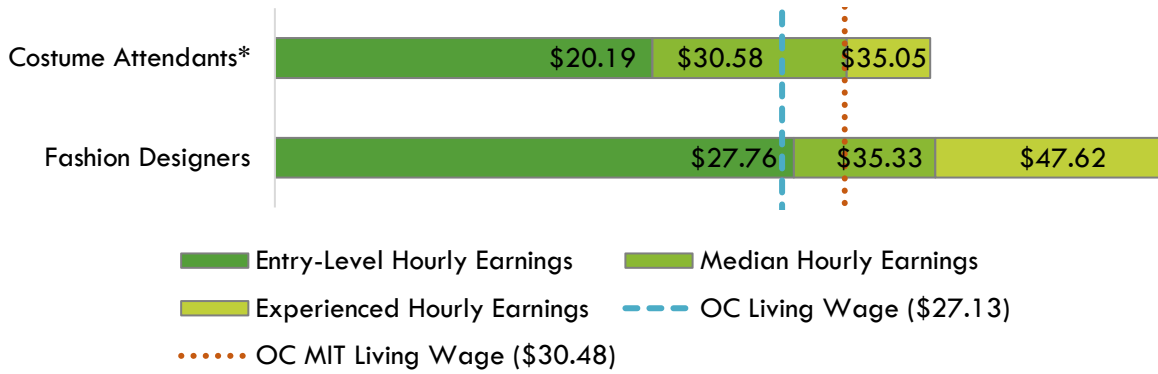
The labor market endorsement in this report considers the entry-level hourly wages for these real estate occupations in Orange County as they relate to the county's living wage. Los Angeles County wages are included below to provide a complete analysis of the LA/OC region.

At the direction of the California Community College Chancellor's Office, the living wage endorsement criteria in this report uses the University of Washington's Center for Women's Welfare Self-Sufficiency Standard, which the COE refers to as a living wage, to determine Orange County's living wage of \$27.13, last updated in March 2024. Additionally, data for the MIT Living Wage, updated on February 14, 2024, is provided as a reference. Currently, the MIT Living Wage in Orange County is \$30.48. Both figures, which account for geographic-specific costs of necessities such as housing, food, health care, and transportation to assess the cost of living, are notated in the exhibits below.

More than half (55%) of annual openings for these costuming occupations have entry-level wages above the Self-Sufficiency Standard living wage for one adult (\$27.13 in Orange County). Typical entry-level hourly wages are \$20.19 and \$27.76. Orange County's average wages are slightly above the average statewide wage of \$40.54 for these occupations. Exhibit 5 shows the wage range for each of these costuming occupations in Orange County and how they compare to the regional living wage, sorted from lowest to highest entry-level wage.

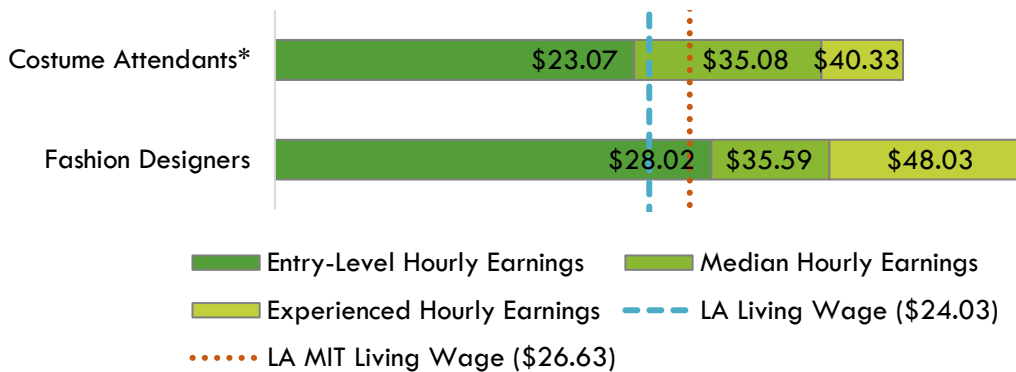
³ Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

Exhibit 5: Wages by Occupation in Orange County



Slightly over half (51%) of annual openings for these costuming occupations have entry-level wages above the Self-Sufficiency living wage for one adult (\$24.03 in Los Angeles County). Typical entry-level hourly wages range between \$23.07 and \$28.02. Los Angeles County’s average wages are above the average statewide wage of \$40.54 for these occupations. Exhibit 6 shows the wage range for each of these costuming occupations in Los Angeles County and 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



Resilient Jobs and U.S. News & World Report Best Jobs:

Exhibit 7 shows if each occupation is considered an Orange County Great Recession-Resilient, COVID-19 Pandemic Recession-Resilient Job, or a 2024 U.S. News & World Report (USN&WR) Best Job. Neither occupation met the criteria to be considered any of the three designations.

Exhibit 7: Resilient Jobs and USN&WR Best Jobs Designations

Occupation	Great Recession-Resilient Job	COVID-19 Pandemic Recession-Resilient Job	2024 USN&WR Best Job
Below Middle-Skill			
Costume Attendants*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Middle-Skill			
Fashion Designer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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.⁴ 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 995 online job postings related to these costuming occupations listed in the past 12 months. Exhibit 8 shows the number of job postings by occupation. Nearly 88% of job postings were for fashion designers, followed distantly by costume attendants* (12%).

Exhibit 8: Number of Job Postings by Occupation (n=995)

Occupation	Job Postings	Percentage of Job Postings
Fashion Designers	879	88%
Costume Attendants*	116	12%
Total Postings	995	100%

The top employers for costume attendants*, in the region, by number of job postings, are shown in Exhibit 9.

Exhibit 9: Top Below Middle-Skill Employers by Number of Job Postings (n=116)

Employer	Job Postings	Percentage of Job Postings
The Service Companies	6	5%
Universal Studios Hollywood	4	3%
AMDA - Asociación Mexicana de Distribuidores de Automotores	3	3%
Chapman University	3	3%
Disney	3	3%
Macy's	3	3%
Nordstrom	3	3%
Volt	3	3%
Bloomingdale's	2	2%
California State University	2	2%

⁴ 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 for *fashion designers*, by number of job postings, are shown in Exhibit 10.

Exhibit 10: Top Middle-Skill Employers by Number of Job Postings (n=879)

Employer	Job Postings	Percentage of Job Postings
24 Seven	37	4%
Kellwood Company	34	4%
Skechers	20	2%
Nordstrom	17	2%
Torrid	13	1%
Avalon Apparel	12	1%
Fam Brands	12	1%
Alo Yoga	11	1%
NBC	10	1%
Career Group	9	1%

The top specialized, soft, and computer skills listed by those most frequently mentioned in job postings (denoted in parentheses) are shown for *costume attendants** in Exhibit 11.

Exhibit 11: Top Skills for the Below Middle-Skill Occupations by Number of Job Postings (n=116)

Top Specialized Skills	Top Soft Skills	Top Computer Skills
Costumes (29)	Communication (37)	Microsoft Office (5)
Sewing (24)	Sales (27)	Google Workspace (3)
Textiles (18)	Customer Service (26)	TikTok (3)
Costume Design (15)	Detail Oriented (16)	Canva (Software) (2)
Wardrobe Styling (15)	Management (16)	Google Sheets (2)
Merchandising (14)	Interpersonal Communications (14)	Jasmine (JavaScript Testing Framework) (2)
Selling Techniques (13)	Organizational Skills (13)	Markdown (2)
Garment Alterations (10)	Operations (12)	Microsoft Excel (2)
Product Knowledge (8)	Professionalism (12)	Zoom (Video Conferencing Tool) (2)
Cosmetics (7)	English Language (10)	Adobe Illustrator (1)

The top specialized, soft, and computer skills listed by those most frequently mentioned in job postings (denoted in parentheses) are shown for *fashion designers* in Exhibit 12.

Exhibit 12: Top Skills for the Middle-Skill Occupation by Number of Job Postings (n=879)

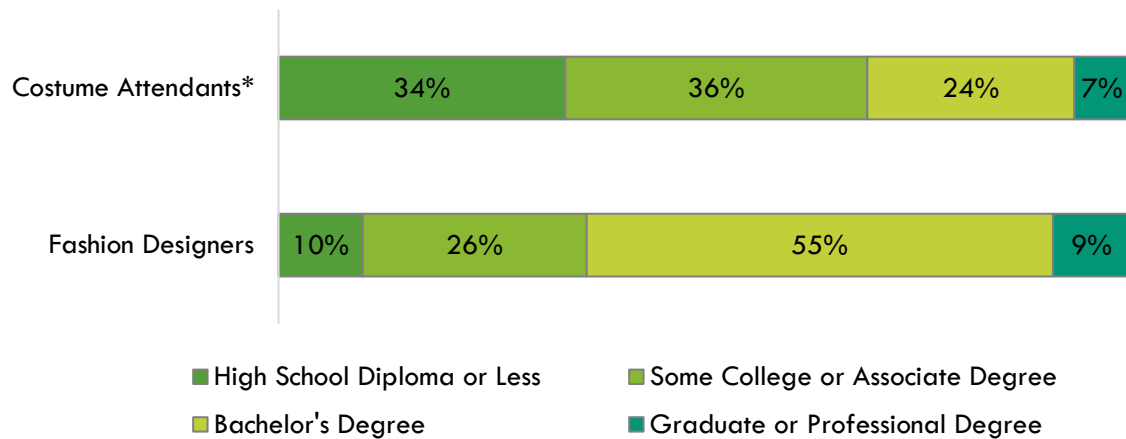
Top Specialized Skills	Top Soft Skills	Top Software and Computer Skills
Adobe Illustrator (515)	Communication (486)	Adobe Illustrator (515)
Adobe Photoshop (389)	Detail Oriented (335)	Adobe Photoshop (389)
Fashion Design (381)	Research (237)	Microsoft Excel (136)
Textiles (359)	Sales (192)	Adobe Creative Suite (120)
Garment Construction (269)	Innovation (167)	Microsoft Office (77)

Top Specialized Skills	Top Soft Skills	Top Software and Computer Skills
New Product Development (261)	Presentations (164)	Microsoft Outlook (72)
Merchandising (194)	Time Management (161)	Microsoft PowerPoint (60)
Technical Design (152)	Microsoft Excel (136)	Design Software (57)
Pattern Making (133)	Management (135)	Adobe InDesign (51)
Adobe Creative Suite (120)	Multitasking (133)	Microsoft Word (39)

Educational Attainment:

The Bureau of Labor Statistics (BLS) lists a high school diploma or equivalent as the typical entry-level education for *costume attendants** and a bachelor's degree for *fashion designers*. However, the national-level educational attainment data indicates between 26% and 36% of workers in the field have completed some college or an associate degree as their highest level of education. Exhibit 13 shows the educational attainment for each occupation, sorted by highest community college educational attainment to lowest.

Exhibit 13: National-level Educational Attainment for Occupations



Of the 22% of the cumulative job postings for *costume designers** that listed a minimum education requirement in Los Angeles/Orange County, 54% (14) requested a high school diploma, vocational training, or an associate degree and 46% (12) requested a bachelor's degree.

Conversely, of the 50% of the postings for *fashion designers* that listed a minimum education requirement, 74% (325) requested a bachelor's degree and 24% (107) requested a high school diploma, vocational training, or an associate degree.

Educational Supply

Community College Supply:

Exhibit 14 shows the three-year average number of awards conferred by community colleges in the related TOP code:

- Technical Theater (1006.00)
- Fashion (1303.00)
- Fashion Design (1303.10)
- Fashion Merchandising (1303.20)
- Fashion Production (1303.30)

The colleges with the most completions in the region are LA Trade, Santa Monica, and Mt. San Antonio. Over the past 12 months, there was one related program recommendation requests from regional community colleges.

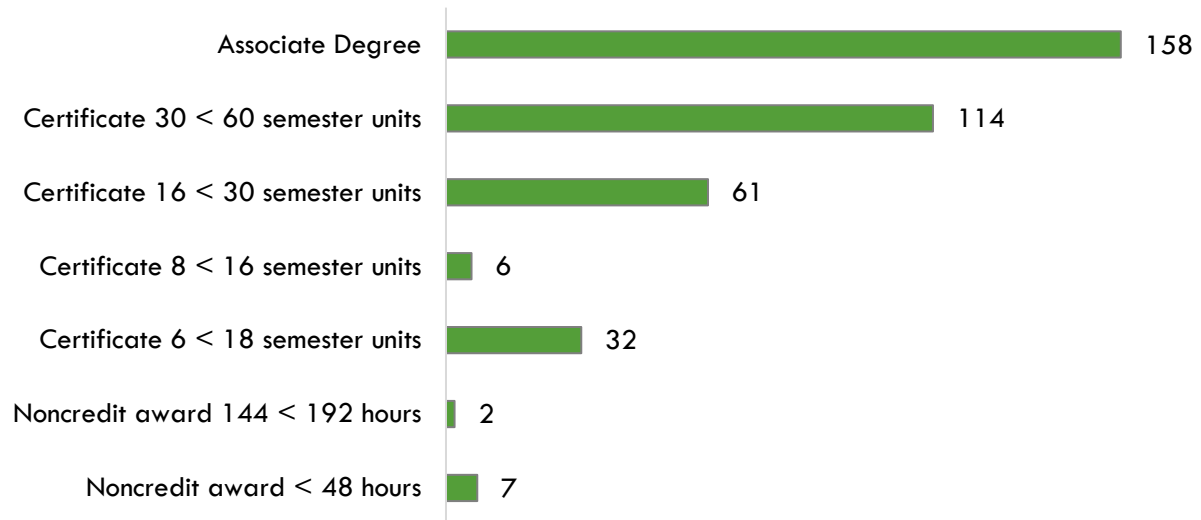
Exhibit 14: Regional Community College Awards (Certificates and Degrees), 2020-2023

TOP Code	Program	College	2020-2021 Awards	2020-2021 Awards	2020-2021 Awards	3-Year Award Average
1006.00	Technical Theater	Citrus	7	5	2	5
		East LA	6	32	13	17
		Glendale	0	2	0	1
		LA City	2	4	7	4
		LA Pierce	7	3	0	3
		LA Valley	1	1	2	1
		Mt San Antonio	0	0	2	1
		Pasadena	2	1	0	1
		Santa Monica	6	16	8	10
		LA Subtotal	31	64	34	43
		Cypress	7	6	2	5
		Fullerton	33	0	4	12
		Irvine	4	3	1	3
		Saddleback	4	3	2	3
		Santa Ana	6	2	0	3
		OC Subtotal	54	14	9	26
		Supply Subtotal/Average			85	78
1303.00	Fashion	El Camino	6	6	7	6
		Pasadena	18	27	11	19
		LA Subtotal	24	33	18	25
		Fullerton	5	0	6	4
		Orange Coast	13	3	0	5
		Saddleback	0	0	1	0
		Santa Ana	6	13	6	8

TOP Code	Program	College	2020-2021 Awards	2020-2021 Awards	2020-2021 Awards	3-Year Award Average
		Fullerton	5	0	6	4
		OC Subtotal	24	16	13	18
		Supply Subtotal/Average	48	49	31	43
1303.10	Fashion Design	El Camino	1	1	0	1
		LA Trade	63	53	32	49
		Long Beach	4	8	1	4
		Mt San Antonio	8	8	53	23
		Santa Monica	26	33	13	24
		LA Subtotal	102	103	99	101
		Fullerton	5	5	5	5
		Orange Coast	8	15	15	13
		Saddleback	7	10	9	9
		Santa Ana	2	6	12	7
		OC Subtotal	22	36	41	33
				Supply Subtotal/Average	124	139
1303.20	Fashion Merchandising	El Camino	5	0	6	4
		LA Trade	21	11	15	16
		Long Beach	15	4	8	9
		Mt San Antonio	19	26	17	21
		Santa Monica	27	24	26	26
		LA Subtotal	87	65	72	75
		Fullerton	12	7	6	8
		Orange Coast	13	16	13	14
		Saddleback	17	19	9	15
		Santa Ana	4	7	3	5
		OC Subtotal	46	49	31	42
				Supply Subtotal/Average	133	114
1303.30	Fashion Production	LA Trade	1	4	5	3
		Long Beach	0	0	1	0
		LA Subtotal	1	4	6	4
		Fullerton	1	1	0	1
		Orange Coast	4	17	13	11
		Santa Ana	3	4	1	3
		OC Subtotal	8	22	14	15
		Supply Subtotal/Average	9	26	20	18
		Supply Total/Average	399	406	337	381

Exhibit 15 shows the annual average community college awards by type from 2020-21 to 2022-23. The majority of the awards are for associate degrees (158), followed by certificates between 30 and less than 60 semester units (114) and certificates between 16 and less than 30 semester units (61).

Exhibit 15: Annual Average Community College Awards by Type, 2020-2023



Community College Student Outcomes:

Exhibit 16 shows the Strong Workforce Program (SWP) metrics for technical theater programs in North Orange County Community College District (NOCCCD), the Orange County Region, and California. Of the 486 Orange County technical theater students in the 2020-21 academic year, 56% (274) attended an NOCCCD college.

NOCCCD students that exited technical theater programs in the 2021-22 academic year had lower median annual earnings (\$22,874 or \$11.00 per hour) compared to all technical theater students in Orange County (\$27,520 or \$13.23 per hour). A lower percentage of NOCCCD technical theater students attained the living wage (22%) when compared to all technical theater students in Orange County (25%).

Exhibit 16: Technical Theater (1006.00) Strong Workforce Program Metrics, 2021-22⁵

SWP Metric	NOCCCD	OC Region	California
SWP Students	274	486	3,277
SWP Students Who Earned 9 or More Career Education Units in the District in a Single Year	16%	18%	18%
SWP Students Who Completed a Noncredit CTE or Workforce Preparation Course	96%	96%	67%
SWP Students Who Earned a Degree or Certificate or Attained Apprenticeship Journey Status	16	26	56
SWP Students Who Transferred to a Four-Year Postsecondary Institution (2019-20)	25	56	432
SWP Students with a Job Closely Related to Their Field of Study (2019-20)	80%	83%	55%

⁵ All SWP metrics are for 2020-21 unless otherwise noted.

SWP Metric	NOCCCD	OC Region	California
Median Annual Earnings for SWP Exiting Students (2020-21)	\$22,874 (\$11.00)	\$27,520 (\$13.23)	\$26,144 (\$12.57)
Median Change in Earnings for SWP Exiting Students (2020-21)	56%	23%	40%
SWP Exiting Students Who Attained the Living Wage (2020-21)	22%	25%	30%

Non-Community College Supply:

To comprehensively analyze the regional supply, it is crucial to include data from other institutions offering technical theater programs. Exhibit 17 displays the annual and three-year average awards granted by these institutions under the related Classification of Instructional Programs (CIP) codes:

- Apparel and Textile Manufacture (19.0902)
- Fashion/Apparel Design (50.0407)
- Costume Design (50.0510)

There were no awards under the related Classification of Instructional Programs (CIP) code: Fashion and Fabric Consultation (19.0906).

The available data covers 2019 to 2022. During this period, non-community college institutions in the region conferred an average of 230 awards annually in related programs.

Exhibit 17: Regional Non-Community College Awards, 2019-2022

CIP Code	Program	College	2019-2020 Awards	2020-2021 Awards	2021-2022 Awards	3-Year Award Average
19.0902	Apparel and Textile Manufacture	Beverly Hills Design Institute	2	1	2	2
		FIDM-Fashion Institute of Design & Merchandising	19	11	13	14
Supply Subtotal/Average			21	12	15	16
50.0407	Fashion/Apparel Design	Beverly Hills Design Institute	1	0	1	1
		FIDM-Fashion Institute of Design & Merchandising	164	143	166	158
		Otis College of Art and Design	21	25	33	26
		Woodbury University	10	10	13	11
Supply Subtotal/Average			196	178	213	196
50.0510	Costume Design	California Institute of the Arts	3	0	0	1
		FIDM-Fashion Institute of Design & Merchandising	19	21	11	17
Supply Subtotal/Average			22	21	11	18
Supply Total/Average			239	211	239	230

Regional Demographics

This section examines demographic data for Orange County community college students in technical theater programs compared to the OC population, along with occupational data, to identify potential diversity and equity issues addressable by community college programs.

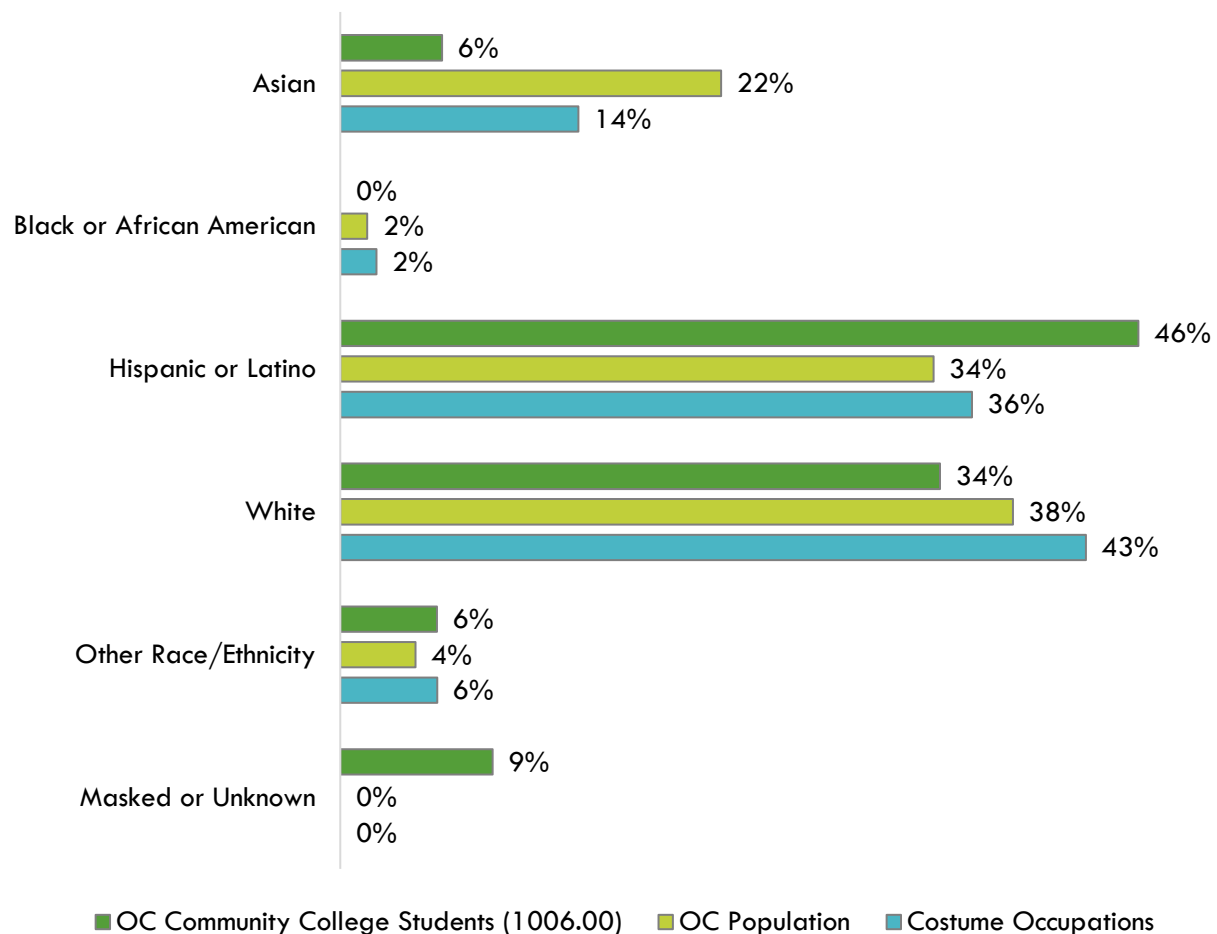
Ethnicity:

Exhibit 18 compares the ethnicity of Orange County community college students enrolled in technical theater programs, the overall Orange County population, and occupation-specific data for costuming occupations.

Notably, 36% of workers employed in these costuming occupations are Hispanic or Latino, which is slightly higher than the population (34%) but lower than the community college technical theater students (46%). Conversely, 43% of workers in the field are white, which is higher than the population (38%) and community college technical theater students (34%).

Examining disaggregated data for each occupation (not shown), Hispanic or Latino and Asian individuals each represent a similar percentage for *fashion designers* (28% and 29%), which is a middle-skill occupation and offers the highest entry-level wages of the two costuming occupations. The occupation with the highest percentage of white individuals (44%) is *costume attendants**, which is a below middle-skill occupation and has the lowest entry-level wages of the two costuming occupations.

Exhibit 18: Program and County Demographics by Ethnicity



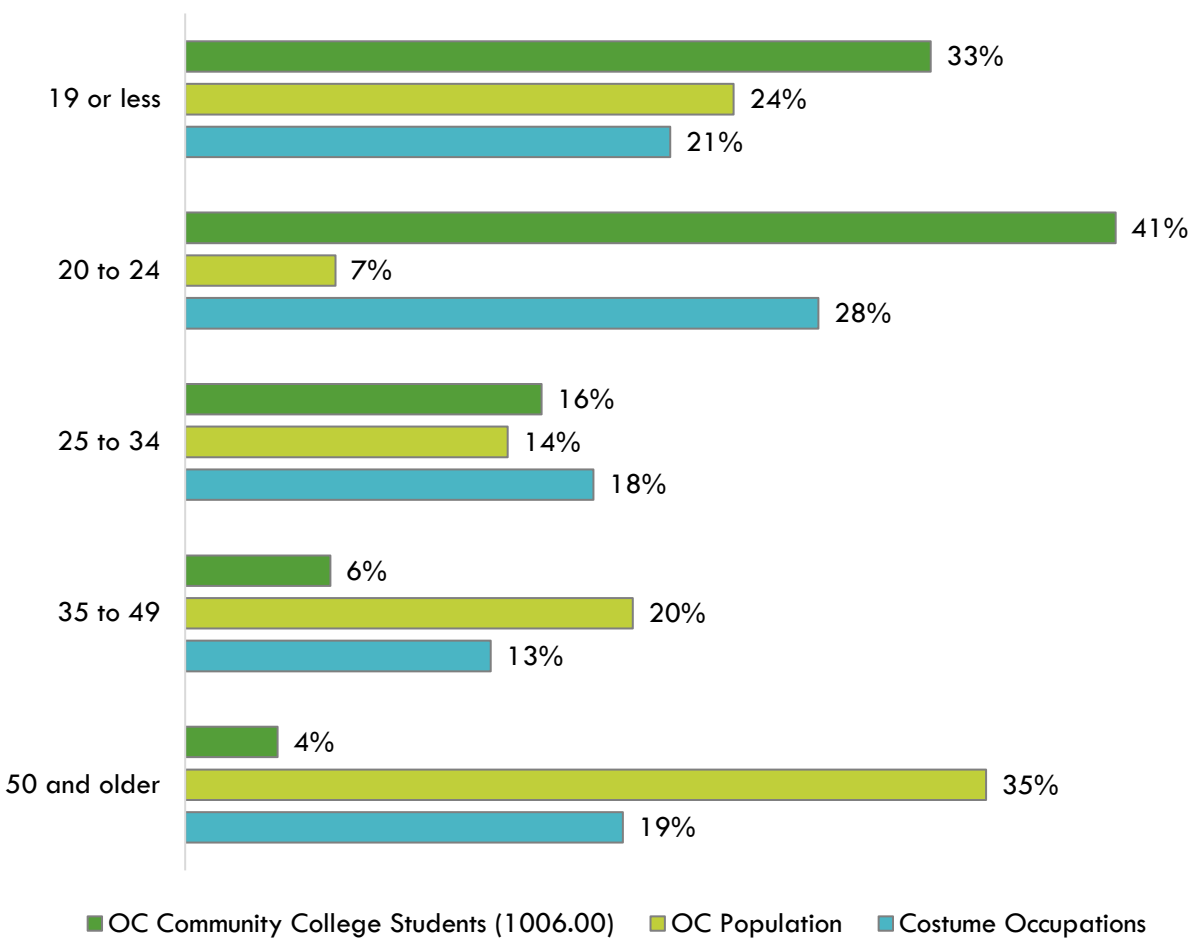
Age:

Exhibit 19 compares the age of Orange County community college students enrolled in technical theater programs, the overall Orange County population, and occupation-specific data for costuming occupations.

About half (49%) of workers in the field are aged 24 and younger, which is higher than the population (31%) but lower than the community college technical theater students (74%). Conversely, 51% of workers in the field are aged 25 and older, which is lower than the population (69%) but higher than the community college technical theater students (26%).

Examining disaggregated data for each occupation (not shown), individuals aged 35 and older comprise more than half (59%) of *fashion designers*, which is a middle-skill occupation and offers the highest entry-level wages of the two costuming occupations. Individuals aged 24 and younger comprise more than half (53%) of *costume attendants**, which is a below middle-skill and has the lowest entry-level wages of the two costuming occupations.

Exhibit 19: Program and County Demographics by Age

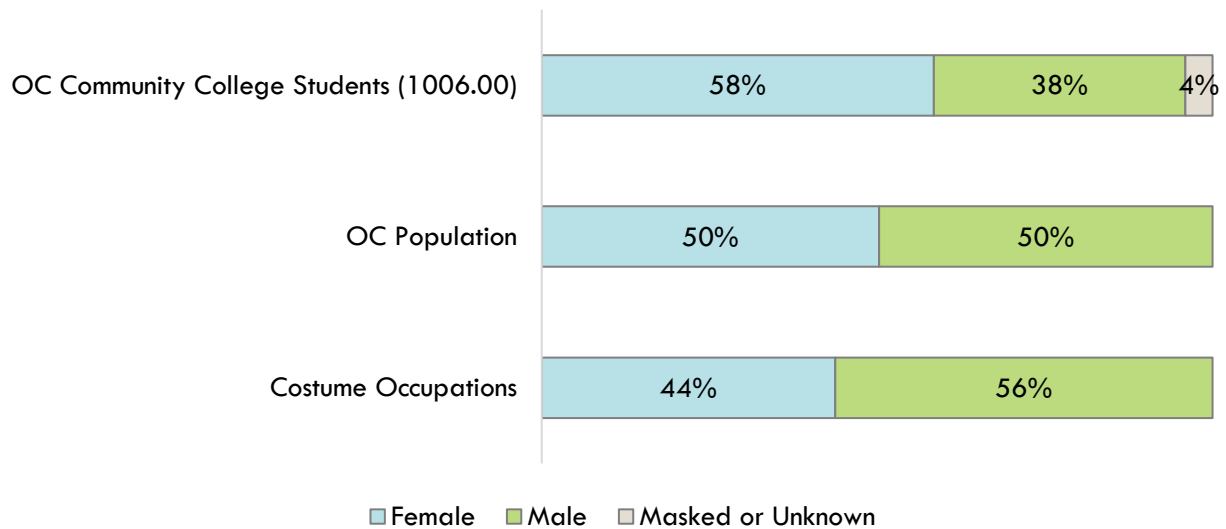


Sex:

Exhibit 20 compares the sex of Orange County community college students enrolled in technical theater programs, the overall Orange County population, and occupation-specific data for these costuming occupations.

Though the population is split evenly between women and men, 44% of workers in the field are women and 38% of community college technical theater students are men. Examining disaggregated data for each occupation (not shown), women account for the majority of *fashion designers* (76%), which has the highest entry-level wages of the two costuming occupations. *Costume attendants** have the highest percentage of men (61%), which is classified a below middle-skill occupation and has the lowest entry-level wages of the two costuming occupations.

Exhibit 20: 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>“Living Wage” measures the income necessary for an individual or family to afford basic expenses by assessing the costs such as housing, food, child care, health care, transportation, and taxes.</p> <p>Per the CCCCCO’s this report’s endorsement criteria uses the University of Washington’s Center for Women’s Welfare Self-Sufficiency Standard last updated in March 2024, which is \$27.13 per hour (\$56,451 annually) in Orange County. For more information, see: http://www.selfsufficiencystandard.org/California</p> <p>The MIT Living Wage, updated on February 14, 2024, is a nationally recognized living wage metric and is provided for reference. The current MIT Living Wage in Orange County is \$30.48. For more information, see: https://livingwage.mit.edu/counties/06059</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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