

**Labor Market Analysis: 1006.00 – Technical Theater  
Entertainment Technology Academy; Audio Certificate; Lighting  
Certificate; Rigging & Staging Certificate; Video Projection  
Certificate – Certificates requiring 8 to fewer than 16 semester units  
Los Angeles Center of Excellence, April 2024**

<b>Program Endorsement:</b>	<b>Endorsed: All Criteria Met</b> <input checked="" type="checkbox"/>	<b>Endorsed: Some Criteria Met</b> <input type="checkbox"/>	<b>Not Endorsed</b> <input type="checkbox"/>
<b>Program Endorsement Criteria</b>			
<b>Supply Gap:</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
<b>Living Wage: (Entry-Level, 25<sup>th</sup>)</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
<b>Education:</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
<b>Emerging Occupation(s)</b>			
Yes <input type="checkbox"/>		No <input checked="" type="checkbox"/>	

## SUMMARY

This report analyzes whether local labor market demand is being met by community college programs aligned with the identified middle-skill occupations<sup>1</sup> or whether a shortage of workers exists. Labor market demand is measured by annual job openings while education supply is measured by the number of awards (degrees and certificates) conferred on average each year.

Based on the available data, there appears to be a supply gap for the five identified middle-skill occupations in the region. Furthermore, entry-level wages exceed the self-sufficiency standard wage in Los Angeles County, and more than one-third of workers have completed an associate degree or less education as their highest level of education.

**Recommendation:** Due to all three program endorsement criteria being met, the Los Angeles Center of Excellence for Labor Market Research (LACOE) endorses this proposed program.

## Key Findings

### Supply Gap

- 1,781 annual job openings are projected in the region through 2027. This number is substantially greater than the three-year average of 98 awards conferred by educational institutions in the region.

<sup>1</sup> Middle-skill occupations typically require some postsecondary education, but less than a bachelor’s degree. The COE classifies middle-skill jobs as the following:

- 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.

### **Living Wage**

- All five occupations have entry-level wages **above** Los Angeles County's self-sufficiency standard hourly wage (\$18.10/hour).<sup>2</sup>

### **Educational Attainment**

- 61% of the annual job openings typically require a postsecondary non-degree award for these middle-skill occupations related to entertainment technology in the LA/OC region.
- 38%-88% of workers in the field have completed an associate degree or less education as their highest level of education, according to national educational attainment data.

### **Community college supply**

- 14 community colleges issued awards related to technical theater in the greater LA/OC region.
- 69 awards (degrees and certificates) were conferred on average each year between 2019 and 2022.

### **Other postsecondary supply**

- 5 educational institutions in the LA/OC region offer programs related to entertainment technology.
- 29 awards were conferred on average each year by other postsecondary institutions throughout the greater LA/OC region.

## **TARGET OCCUPATIONS**

LA COE prepared this report to provide regional labor market and postsecondary supply data related to five middle-skill occupations. Although one occupation in this report typically requires a bachelor's degree, it is considered middle-skill because approximately one-third of workers in the field have completed some college/associate degree or less education as their highest level of education. [For full occupation descriptions, please see Appendix.](#)

- **Set and Exhibit Designers (27-1027)**<sup>3</sup>
- **Audio and Video Technicians (27-4011)**<sup>4</sup>
- **Sound Engineering Technicians (27-4014)**<sup>5</sup>
- **Lighting Technicians (27-4015)**<sup>6</sup>
- **Riggers (49-9096)**<sup>7</sup>

## **OCCUPATIONAL DEMAND**

Exhibit 1 shows the five-year occupational demand projections for these entertainment technology occupations. In the greater Los Angeles/Orange County region, the number of jobs related to

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<sup>2</sup> Self-Sufficiency Standard wage data was pulled from The Self-Sufficiency Standard Tool for California. For more information, visit: <http://selfsufficiencystandard.org/california>.

<sup>3</sup> [Set and Exhibit Designers \(bls.gov\)](#)

<sup>4</sup> [Broadcast, Sound, and Video Technicians \(bls.gov\)](#)

<sup>5</sup> [Ibid.](#)

<sup>6</sup> [Ibid.](#)

<sup>7</sup> [Riggers \(bls.gov\)](#)

these occupations is projected to increase by 1% through 2027. There will be nearly 1,800 job openings per year through 2027 due to job growth and replacements. The majority of jobs in 2022 for these middle-skill entertainment technology occupations (89%) were located in Los Angeles County.

**Exhibit 1: Current employment and occupational demand, Los Angeles and Orange counties<sup>8</sup>**

Geography	2022 Jobs	2027 Jobs	2022-2027 Change	2022-2027 % Change	Annual Openings
Los Angeles	16,051	16,089	38	0%	1,573
Orange	1,922	2,057	134	7%	208
<b>Total</b>	<b>17,973</b>	<b>18,146</b>	<b>173</b>	<b>1%</b>	<b>1,781</b>

**Detailed Occupation Data**

Exhibit 2 displays the current employment and projected occupational demand for each of the target occupations in Los Angeles County. The percentage of workers aged 55+ is included in order to visualize upcoming replacement demand for these occupations. Riggers and sound engineering technicians have a higher-than-average risk of automation.

**Exhibit 2: Current employment, projected occupational demand, percentage of workers aged 55+, Los Angeles County<sup>9</sup>**

Occupation	2022 Jobs	2027 Jobs	5-Yr % Change	Annual Openings	% Aged 55 and older*	Automation Index
Set and Exhibit Designers	2,675	2,566	(4%)	231	30%	89.0
Audio and Video Technicians	5,162	5,202	1%	501	23%	97.8
Sound Engineering Technicians	4,700	4,824	3%	488	22%	101.4
Lighting Technicians	2,692	2,656	(1%)	262	24%	96.1
Riggers	822	841	2%	92	27%	120.6
<b>Total</b>	<b>16,051</b>	<b>16,089</b>	<b>0%</b>	<b>1,573</b>	<b>-</b>	

\*The average percentage of workers aged 55 and older across all occupations in the greater LA/OC region is 27%. Set and exhibit designers have a larger share of older workers, which typically indicates greater replacement needs to offset the amount of impending retirements.

\*\*The automation index captures an occupation's risk of being affected by automation with a base of 100. An automation index greater than 100 indicates a higher-than average risk of automation; less than 100 indicates a lower-than-average risk.

<sup>8</sup> Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

<sup>9</sup> Ibid.

## WAGES

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

### Los Angeles County

All five occupations have entry-level wages above the self-sufficiency standard wage for one adult (\$18.10 in Los Angeles County). Typical entry-level hourly wages are in a range between \$21.96 and \$38.38. (Exhibit 3). Experienced workers can expect to earn wages between \$50.80 and \$64.58.

**Exhibit 3: Earnings for occupations in Los Angeles County**

Occupation	Entry-Level Hourly Earnings (25 <sup>th</sup> Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 <sup>th</sup> Percentile)	Median Annual Earnings*
Set and Exhibit Designers	\$26.07	\$38.17	\$57.76	\$79,400
Audio and Video Technicians	\$22.59	\$32.99	\$50.80	\$68,600
Sound Engineering Technicians	\$21.96	\$31.90	\$59.89	\$66,300
Lighting Technicians	\$26.36	\$39.51	\$64.58	\$82,200
Riggers	\$38.38	\$41.62	\$60.85	\$86,600

\*Rounded to the nearest \$100

### Orange County

The majority, 51%, of annual openings for these entertainment technology occupations have entry-level wages below the self-sufficiency standard wage for one adult (\$20.63 in Orange County). Typical entry-level hourly wages are in a range between \$19.82 and \$37.49 (Exhibit 4). Three occupations have entry-level wages above the self-sufficiency standard wage:

- Riggers, \$37.49
- Lighting technicians, \$23.48
- Set and exhibit designers, \$22.84

Experienced workers can expect to earn wages between \$46.18 and \$59.44, which are higher than the self-sufficiency standard.

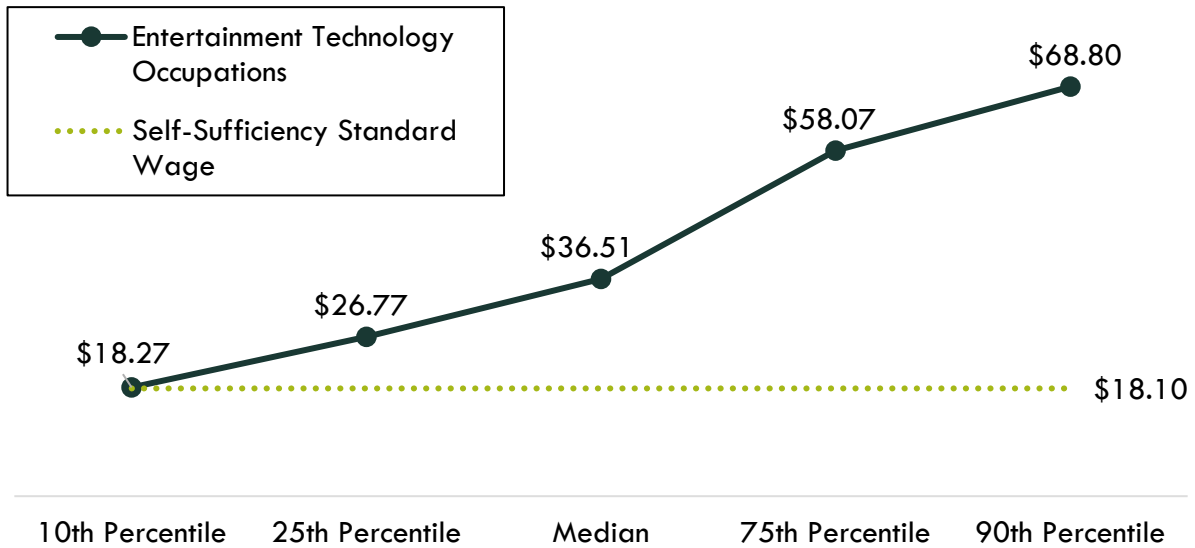
**Exhibit 4: Earnings for occupations in Orange County**

Occupation	Entry-Level Hourly Earnings (25 <sup>th</sup> Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 <sup>th</sup> Percentile)	Median Annual Earnings*
Set and Exhibit Designers	\$22.84	\$33.39	\$51.07	\$69,400
Audio and Video Technicians	\$20.55	\$29.92	\$46.18	\$62,200
Sound Engineering Technicians	\$19.82	\$29.20	\$54.24	\$60,700
Lighting Technicians	\$23.48	\$35.10	\$57.34	\$73,000
Riggers	\$37.49	\$40.66	\$59.44	\$84,600

\*Rounded to the nearest \$100

Across the greater Los Angeles and Orange County region, the average entry-level hourly earnings for the occupations in this report are \$26.77; this is above the living wage for one single adult in Los Angeles County (\$18.10). Exhibit 5 shows the average hourly wage for the occupations in this report, for entry-level to experienced workers.

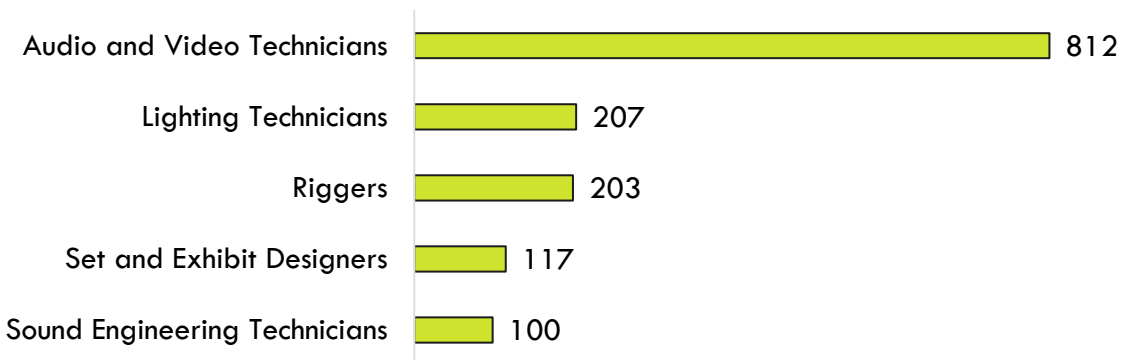
**Exhibit 5: Average hourly earnings for entertainment technology occupations, Los Angeles and Orange counties**



## JOB POSTINGS

There were 1,439 online job postings related to entertainment technology listed in the past 12 months in Los Angeles and Orange counties. Exhibit 6 displays the number of job postings by occupation. The majority of job postings (56%) were for audio and video technicians, followed by lighting technicians (14%) and riggers (14%).

**Exhibit 6: Job postings by occupation (last 12 months), Los Angeles and Orange counties**



Job postings were analyzed for the most common job titles, skills, and employers associated with the target occupations in this report (Exhibit 7).

**Exhibit 7: Most commonly requested job titles, skills and employers in job postings, Los Angeles and Orange counties**

Top Job Titles	Top Skills	Top Employers
<ul style="list-style-type: none"> <li>• Audiovisual technicians</li> <li>• Audiovisual specialists</li> <li>• Riggers</li> <li>• Audio visual managers</li> <li>• Wire harness assemblers</li> </ul>	<ul style="list-style-type: none"> <li>• Project management</li> <li>• Electrical wiring</li> <li>• Creston (A/V systems)</li> <li>• Audiovisual equipment</li> <li>• Control systems</li> </ul>	<ul style="list-style-type: none"> <li>• Encore Global</li> <li>• Disney</li> <li>• Five Star Audio Visual</li> <li>• Gig Life*</li> <li>• Mei Rigging &amp; Crafting</li> </ul>

\*Staffing company

In the greater Los Angeles/Orange County region, 43% of the entertainment technology job postings listed a minimum educational requirement. The number and percentage of job postings by educational level appear in exhibit 8.

**Exhibit 8: Education levels requested in job postings for occupations related to entertainment technology, Los Angeles and Orange counties**

Education Level	Job Postings	% of Job Postings
Bachelor's degree	210	34%
Associate degree	58	9%
High school diploma or vocational training	344	56%

**EDUCATIONAL ATTAINMENT**

In the greater Los Angeles/Orange County region, the majority of annual job openings (61%) typically require a postsecondary non-degree award (Exhibit 9). Furthermore, the national-level data indicates between 38% and 88% of workers in the field have completed an associate degree or less education as their highest level of educational attainment. The Bureau of Labor Statistics (BLS) lists the following typical entry-level education levels for the occupations in this report:

**Exhibit 9: Entry-level education preferred by employers nationally, Bureau of Labor Statistics**

Occupation	Education Level
Set and Exhibit Designers	Bachelor's degree
Audio and Video Technicians	Postsecondary non-degree award
Sound Engineering Technicians	Postsecondary non-degree award
Lighting Technicians	High school diploma or equivalent
Riggers	High school diploma or equivalent

## EDUCATIONAL SUPPLY

### Community College Supply

Exhibit 10 shows the annual and three-year average number of awards conferred by community colleges in the related TOP code: Technical Theater (1006.00). The colleges with the most completions in the region are East LA, Fullerton, and Santa Monica.

**Exhibit 10: Regional community college awards (certificates and degrees), 2019-2022**

TOP Code	Program	College	2019-20 Awards	2020-21 Awards	2021-22 Awards	3-Year Average
1006.00	Technical Theater	Citrus	7	5	2	5
		East LA	6	32	13	17
		Glendale	-	2	-	1
		LA City	2	4	7	4
		LA Pierce	7	3	-	3
		LA Valley	1	1	2	1
		Mt. San Antonio	-	-	2	1
		Pasadena	2	1	-	1
		Santa Monica	6	16	8	10
		<b>LA Subtotal</b>	<b>31</b>	<b>64</b>	<b>34</b>	<b>43</b>
		Cypress	7	6	2	5
		Fullerton	33	-	4	12
		Irvine	4	3	1	3
		Saddleback	4	3	2	3
		Santa Ana	6	2	-	3
		<b>OC Subtotal</b>	<b>54</b>	<b>14</b>	<b>9</b>	<b>26</b>
		<b>Supply Total/Average</b>			<b>85</b>	<b>78</b>

### Other Postsecondary Supply

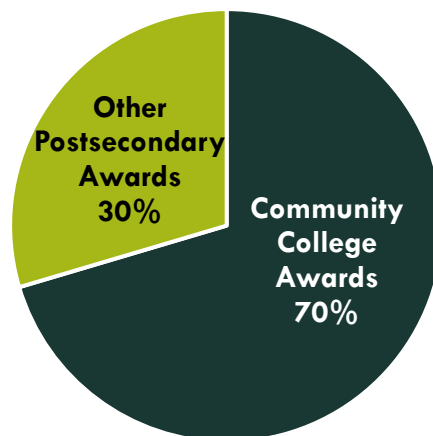
For a comprehensive regional supply analysis, it is important to consider the supply from other institutions in the region that provide training programs for entertainment technology. Exhibit 11 shows the number of awards conferred by these institutions in relevant programs. Due to different data collection periods, the most recent data is from 2019 to 2021. Between 2019 and 2021, other postsecondary college institutions in the region conferred an average of 29 bachelor's awards. Bachelor's awards are included in this report, since one of the occupations in this report typically requires a bachelor's degree.

**Exhibit 11: Other regional postsecondary awards, 2019-2021**

CIP Code	Program	Postsecondary Institution	2019-20 Awards	2020-21 Awards	2021-22 Awards	2-Year Average
50.0502	Technical Theatre/Theatre Design and Technology	CA Institute of the Arts	18	17	15	17
		Chapman University	-	1	-	0
		Pepperdine University	6	3	1	3
		USC	4	10	8	7
		Vanguard University of Southern California	1	1	1	1
<b>Supply Total/Average</b>			<b>29</b>	<b>32</b>	<b>25</b>	<b>29</b>

Exhibit 12 shows the proportion of community college awards conferred in the greater Los Angeles/Orange County region compared to the number of other postsecondary awards for the programs in this report. The majority of awards conferred in these programs are awarded by community colleges in the greater Los Angeles/Orange County region.

**Exhibit 12: Percentage of community college awards compared to other postsecondary institution awards in the Los Angeles/Orange County region**



**APPENDIX: OCCUPATION DESCRIPTIONS**

LA COE prepared this report to provide regional labor market supply and demand data related to these target occupations:

- **Set and Exhibit Designers (27-1027)** Design special exhibits and sets for film, video, television, and theater productions. May study scripts, confer with directors, and conduct research to determine appropriate architectural styles.<sup>10</sup>
- **Audio and Video Technicians (27-4011)** Set up, maintain, and dismantle audio and video equipment, such as microphones, sound speakers, connecting wires and cables, sound and mixing boards, video cameras, video monitors and servers, and related electronic

<sup>10</sup> [Set and Exhibit Designers \(bls.gov\)](https://www.bls.gov)



equipment for live or recorded events, such as concerts, meetings, conventions, presentations, podcasts, news conferences, and sporting events.<sup>11</sup>

- **Sound Engineering Technicians (27-4014)** Assemble and operate equipment to record, synchronize, mix, edit, or reproduce sound, including music, voices, or sound effects, for theater, video, film, television, podcasts, sporting events, and other productions.<sup>12</sup>
- **Lighting Technicians (27-4015)** Set up, maintain, and dismantle light fixtures, lighting control devices, and the associated lighting electrical and rigging equipment used for photography, television, film, video, and live productions. May focus or operate light fixtures, or attach color filters or other lighting accessories.<sup>13</sup>
- **Riggers (49-9096)** Set up or repair rigging for construction projects, manufacturing plants, logging yards, ships and shipyards, or for the entertainment industry.<sup>14</sup>

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## DATA SOURCES

- O\*NET Online
- Lightcast (formerly Emsi)
- Bureau of Labor Statistics (BLS)
- California Employment Development Department, Labor Market Information Division, OES
- California Community Colleges Chancellor's Office Management Information Systems (MIS)
- Self-Sufficiency Standard at the Center for Women's Welfare, University of Washington
- Chancellor's Office Curriculum Inventory (COCI 2.0)

Important Disclaimer: All representations included in this report have been produced from primary research and/or secondary review of publicly and/or privately available data and/or research reports. Efforts have been made to qualify and validate the accuracy of the data and the reported findings; however, neither the Centers of Excellence, COE host District, nor California Community Colleges Chancellor's Office are responsible for applications or decisions made by recipient community colleges or their representatives based upon components or recommendations contained in this study.

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<sup>11</sup> [Broadcast, Sound, and Video Technicians \(bls.gov\)](https://www.bls.gov)

<sup>12</sup> [Ibid.](#)

<sup>13</sup> [Ibid.](#)

<sup>14</sup> [Riggers \(bls.gov\)](https://www.bls.gov)