

Technical Theater Certificate

The Inland Empire/Desert Region (Riverside-San Bernardino-Ontario Metropolitan Statistical Area) and the Los Angeles/Orange County Region (Los Angeles-Long Beach-Anaheim Metropolitan Statistical Area)

Summary

- Total employment for the technical theater occupational group is expecting a 6% increase between 2017 and 2022 in the combined Inland Empire/Desert and Los Angeles/Orange County region. Nearly 4,000 job openings will be available over the five-year timeframe.
- The entry-level wage for each of the occupations in the technical theater occupational group is **above the MIT Living Wage estimate of \$12.30 per hour** for a single adult living in the Inland Empire/Desert Region.
- Based on the average annual number of program completions between the selected program completions (**3 annual average completions in the Inland Empire/Desert Region only**), and the annual job openings for technical theater occupational group in the local region (**795 annual job openings in both areas combined**), there appears to be an opportunity for program growth.

Introduction

This report details the occupations relevant to the technical theater program. For entertainment-based industries, Los Angeles and Orange counties are included in the demand analyses due to the proximity to the Inland Empire/Desert Region, as well as the increased opportunities for gainful employment. For this particular occupational group, there are 38 times more jobs in Los Angeles and Orange counties than there are in the Inland Empire/Desert Region. The two occupations included in the technical theater occupational group are the following:

- Sound Engineering Technicians
- Set and Exhibit Designers

Job Opportunities

In 2017, there were just over 7,600 technical theater occupational group jobs in Los Angeles/Orange County and Inland Empire/Desert regions combined. Across the four-county region, employment related to the technical theater occupational group is expecting to grow employment 6% through 2022. Employers in the region will need to hire nearly 4,000 workers over the next five years to fill new jobs and to backfill jobs that workers are permanently vacating (includes retirements). Appendix A, Tables 1, 2, and 3 show the projected job growth for each of the occupations in this group across the regions.

Exhibit 1: Five-year projections for the technical theater occupational group in the Inland Empire/Desert, Los Angeles/Orange County, and the combined region

Region	2017 Jobs	5-Yr % Change (New Jobs)	5-Yr Openings (New + Replacement Jobs)	Annual Openings (New + Replacement Jobs)	% of workers age 55+
Inland Empire/Desert	194	5%	101	20	18%
Los Angeles/Orange County	7,408	6%	3,873	775	19%
Combined	7,602	6%	3,974	795	19%

Source: EMSI 2018.1

Over the last 12 months (April 2017 to March 2018), there were 183 advertisements (ads) for jobs in the technical theater occupational group in Los Angeles, Orange, Riverside, and San Bernardino counties. In the full-year 2017 there were 230 job ads; 254 job ads in 2016; 268 job ads in 2015; and 199 job ads in 2014. Exhibit 2 shows the number of job ads posted during the last 12 months for each of the occupations in the technical theater occupational group and the average time to fill for the local region and nationally. The average time to fill for sound engineering technicians in the region is 2 weeks longer than the national average, indicating that employers might be experiencing difficulty finding qualified candidates for these positions.

Exhibit 2: Job ads by each of the technical theater occupational group in Los Angeles, Orange, Riverside, and San Bernardino counties during the last 12 months, Apr 2017 – Mar 2018

Occupation	Job Ads	Regional Average Time to Fill (Days)	Average Time to Fill Nationally (Days)
Sound Engineering Technicians	154	57	43
Set and Exhibit Designers	29	50	46
TOTAL	183		

Source: Burning Glass – Labor Insights

Earnings

The entry-level wage for occupations in this group are above the MIT Living Wage estimate of \$12.30 per hour for a single adult living in the Inland Empire/Desert Region. These wages are also sufficient for individuals living in Los Angeles/Orange County Region, where the living wage is \$13.96 or \$29,031 per year. See Exhibits 3, 4, and 5 for wage information by occupation for the Inland Empire/Desert Region, Los Angeles/Orange County, and the combined region.

Exhibit 3: Earnings for the technical theater occupational group in the Inland Empire/Desert Region

Occupation	Entry to Experienced Hourly Earnings Range*	Median Wage*	Avg. Annual Earnings
Sound Engineering Technicians	\$20.30 to \$30.83	\$26.95	\$59,100
Set and Exhibit Designers	\$16.24 to \$23.39	\$20.06	\$41,900

Source: EMSI 2018.1

*Entry Hourly is 25th percentile wage, the median is 50th percentile wage, experienced is 75th percentile wage.

Exhibit 4: Earnings for the technical theater occupational group in Los Angeles/Orange County

Occupation	Entry to Experienced Hourly Earnings Range*	Median Wage*	Avg. Annual Earnings
Sound Engineering Technicians	\$20.15 to \$46.25	\$28.69	\$75,500
Set and Exhibit Designers	\$19.45 to \$37.54	\$24.12	\$61,900

Source: EMSI 2018.1

*Entry Hourly is 25th percentile wage, the median is 50th percentile wage, experienced is 75th percentile wage.

Exhibit 5: Earnings for the technical theater occupational group in the combined Los Angeles/Orange County and Inland Empire/Desert Region

Occupation	Entry to Experienced Hourly Earnings Range*	Median Wage*	Avg. Annual Earnings
Sound Engineering Technicians	\$20.15 to \$45.56	\$28.64	\$75,100
Set and Exhibit Designers	\$19.32 to \$36.78	\$23.97	\$61,400

Source: EMSI 2018.1

*Entry Hourly is 25th percentile wage, the median is 50th percentile wage, experienced is 75th percentile wage.

Work Locations, Employers, Skills, and Education

Exhibit 6 displays the top employers posting job ads as well as the top work locations from job ads during the last 12 months.

Exhibit 6: The top employers and work locations for the technical theater occupational group in in Los Angeles, Orange, Riverside, and San Bernardino counties during the last 12 months, Apr 2017 – Mar 2018

Occupation	Top Employers	Top Work Locations
Technical Theater Occupational Group (n=183)	<ul style="list-style-type: none"> Blizzard Entertainment Activision Apple Inc. Fox NBC 	<ul style="list-style-type: none"> Los Angeles Irvine Burbank Culver City Anaheim

Source: Burning Glass – Labor Insights

Exhibit 7 lists the top specialized, soft, and software and programming skills that employers are seeking when looking for workers to fill technical theater positions.

Exhibit 7: Sample of in-demand skills from employer job ads for the technical theater occupational group in Los Angeles, Orange, Riverside, and San Bernardino counties, Apr 2017- Mar 2018

Occupation	Specialized skills	Soft skills	Software and Programming skills
Sound Engineering Technicians (n=77)	<ul style="list-style-type: none"> Broadcast Routers Repair 	<ul style="list-style-type: none"> Troubleshooting Physical Demand Creativity 	<ul style="list-style-type: none"> Pro Tools Microsoft Office AutoCAD
Set and Exhibit Designers (n=15)	<ul style="list-style-type: none"> Painting/Sketching Budgeting Art Direction 	<ul style="list-style-type: none"> Creativity Team Work/Collaboration Communication Skills 	<ul style="list-style-type: none"> Adobe Photoshop AutoCAD MAYA 3D Studio Max

Source: Burning Glass – Labor Insights

Exhibit 8 displays the entry-level education level education typically required to enter each occupation according to the Bureau of Labor Statistics, educational attainment for incumbent workers with “some college, no degree” and an “associate degree” according to the U.S. Census, and the minimum advertised education requirement requested by employers in online job ads.

Exhibit 8: Educational attainment and online job ads with minimum advertised education requirements for the technical theater occupational group in Los Angeles, Orange, Riverside, and San Bernardino counties, Apr 2017- Mar 2018

Occupation	Typical Entry-Level Education Requirement	Educational Attainment (Percentage holding a Community College-level education)*	Minimum Advertised Education Requirement from Job Ads			
			Number of Job Postings (n=)	High school diploma or vocational training	Associate degree	Bachelor’s degree or higher
Sound Engineering Technicians	Postsecondary nondegree award	46%	45	13%	4%	83%
Set and Exhibit Designers	Bachelor’s degree	29%	10	30%	10%	60%

Source: EMSI 2018.1, Current Population Survey, Burning Glass – Labor Insights

*Community college-level education is the combined percentage of incumbent workers 25 years or older with some college, no degree or an associate degree.

Industry

Exhibit 9 displays the industries that employ the most technical theater occupations in Los Angeles, Orange, Riverside, and San Bernardino counties. Staffing patterns show the industries that employ the most of a specific occupation. The motion picture and video industry employ the most individuals in the technical theater occupational group.

Exhibit 9: Top Industries employing each technical theater occupation in Los Angeles, Orange, Riverside, and San Bernardino counties

Occupation	Top Industries from Staffing Pattern (NAICS)	Industry Classification from Job Ads	
		Number of Job Postings (n=)	Top Industries from Job Ads (NAICS)
Sound Engineering Technicians	<ul style="list-style-type: none"> • Motion Picture and Video Industries (5121) 52% • Sound Recording Industries (5122) 26% 	72	<ul style="list-style-type: none"> • Software Publishers (5112) • Motion Picture and Video Industries (5121)
Set and Exhibit Designers	<ul style="list-style-type: none"> • Motion Picture and Video Industries (5121) 64% • Independent Artists, Writers, Performers (7115) 11% 	8	<ul style="list-style-type: none"> • Radio and Television Broadcasting (5151)

Source: EMSI 2018.1, Burning Glass – Labor Insights

Student Completions

Exhibit 10 shows the annual average regional community college awards (associate degrees and certificates) conferred during the three academic years between 2014 and 2017, with the relevant TOP code. Please note, an award is not equivalent to a single person in search of a job opening since a student may earn more than one award, such as an associate degree in addition to a certificate. Community College student outcome information was obtained from the CTE LaunchBoard based on the selected TOP code(s) and region.

Exhibit 10: Annual average community college student completions for the technical theater program in the Inland Empire/Desert Region

1006.00 – Technical Theater	Annual Community College Headcount (2016-17)	Community College Annual Average Awards (2014-17)
Chaffey	156	
Crafton Hills	30	
Mt. San Jacinto	55	
Associate Degree		1
Certificate 30 to < 60 semester units		2
Riverside	62	
San Bernardino	17	
Victor Valley	34	
Total CC Headcount (2016-17)	354	
Total annual average community college awards		3

Source: LaunchBoard, IPEDS

1006.00 – Technical theater program outcomes in the Inland Empire/Desert Region in the academic year 2015-16:

- Number of course enrollments: 497 (California median: 560)*
- Number of students who transferred to a 4-year institution: 16 (CA: 23)
- Employed in the second fiscal quarter after exit: N/A (CA: 70%)
- Median earnings in the second fiscal quarter after exit: \$3,635 (CA:\$3,961)
- Employed in the fourth fiscal quarter after exit: N/A (CA: 70%)
- Median annual earnings: \$12,174 (CA: \$14,879)
- Percentage in job closely related to field of study: N/A (CA: 38%) [2014-15]
- Median change in earnings: 34,224% (CA: 170%)
- Proportion of students who attained a living wage: N/A (CA: 13%)

*academic year 2016-17

Sources

- O*Net Online
- Labor Insight/Jobs (Burning Glass)
- Economic Modeling Specialists International (EMSI)
- CTE LaunchBoard
- MIT Living Wage Calculator
- California Community Colleges Chancellor’s Office Management Information Systems (MIS)



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April 2018

Appendix A: Occupation definitions, five-year projections, and earnings for technical theater occupations

Occupation Definitions (SOC code), Education and Training Requirement, Community College Education Attainment

Set and Exhibit Designers (27-1027)

Design special exhibits and movie, television, and theater sets. May study scripts, confer with directors, and conduct research to determine appropriate architectural styles.

Sample job titles: Design Chief, Designer, Display Coordinator, Exhibit Designer, Exhibit Preparator, Production Designer, Scenic Designer, Set Decorator, Set Designer, Show Design Supervisor

Entry-Level Educational Requirement: Bachelor's degree

Training Requirement: None

Percentage of incumbent workers with a Community College Award or Some Postsecondary Coursework: 29%

Sound Engineering Technicians (27-4014)

Operate machines and equipment to record, synchronize, mix, or reproduce music, voices, or sound effects in sporting arenas, theater productions, recording studios, or movie and video productions.

Sample job titles: Audio Engineer, Audio Operator, Broadcast Engineer, Broadcast Technician, Master Control Operator, Mixer, Recording Engineer, Sound Editor, Sound Engineer, Sound Technician

Entry-Level Educational Requirement: Postsecondary nondegree award

Training Requirement: Less than one month on-the-job training

Percentage of incumbent workers with a Community College Award or Some Postsecondary Coursework: 46%

Table 1. 2017 to 2022 job growth for the technical theater occupational group in the Inland Empire/Desert Region

Occupation (SOC)	2017 Jobs	2022 Jobs	5-Yr Change	5-Yr % Change	5-Yr Openings (New + Replacement Jobs)	Annual Openings (New + Replacement Jobs)
Sound Engineering Technicians (27-4014)	117	122	5	4%	60	12
Set and Exhibit Designers (27-1027)	77	82	5	6%	41	8
Total	194	204	10	5%	101	20

Source: EMSI 2018.1

Table 2. 2017 to 2022 job growth for the technical theater occupational group in Los Angeles/Orange County

Occupation (SOC)	2017 Jobs	2022 Jobs	5-Yr Change	5-Yr % Change	5-Yr Openings (New + Replacement Jobs)	Annual Openings (New + Replacement Jobs)
Sound Engineering Technicians (27-4014)	4,471	4,678	207	5%	2,264	453
Set and Exhibit Designers (27-1027)	2,937	3,147	210	7%	1,609	322
Total	7,408	7,826	418	6%	3,873	775

Source: EMSI 2018.1

Table 3. 2017 to 2022 job growth for the technical theater occupational group in the combined Inland Empire/Desert and Los Angeles/Orange County region

Occupation (SOC)	2017 Jobs	2022 Jobs	5-Yr Change	5-Yr % Change	5-Yr Openings (New + Replacement Jobs)	Annual Openings (New + Replacement Jobs)
Sound Engineering Technicians (27-4014)	4,588	4,801	213	5%	2,325	465
Set and Exhibit Designers (27-1027)	3,013	3,229	216	7%	1,650	330
Total	7,602	8,030	428	6%	3,974	795

Source: EMSI 2018.1