



Audio Technologies Support and Installations

October 2017

Prepared by the Los Angeles/Orange County Center of Excellence for Labor Market Research

Program Recommendation

This report was compiled by the Los Angeles/Orange County Center of Excellence to provide regional labor market data for the program recommendation of audio technologies support and installations. This report is to help determine whether there is demand in the local labor market that is not being met by the supply from programs of study (CCC and non-CCC) that align with this occupation group.

Based on the data, the COE can determine that there may be an unmet need for workers in the field of the audio technologies support and installations in Los Angeles County. Reasons include:

- There are projected to be 2,055 annual job openings among jobs related to audio technologies support and installations over the next five years
- Between 2012-2015, there were an average of 298 annual award recipients, signaling a possible under-supply regionally
- Nearly half of all workers in this field have completed some community college coursework

Data included in this analysis represents the labor market demand for positions most closely related to **audio technologies support and installation**. Standard occupational classification (SOC) codes were chosen based on the national education level required for employment (associate degree and postsecondary certificate) as well as the proportion of current workers who hold a community college award or have had some community college training. This selection process narrows the labor market analysis to the most relevant employment opportunities for students with community college education and training.

The data tables below show traditional labor market information, including current and projected employment as well as annual average awards granted by community colleges in Orange County between 2012 and 2015. Employer job postings information was used to capture number of advertised jobs and job titles for occupations relevant to the field of study. Job postings should not be used to establish current job openings, because the numbers may include duplicate job postings or postings intended to gather a pool of applicants.

Occupation Codes and Descriptions

Currently, there are three occupations in the standard occupational classification (SOC) system related to the study of audio technologies. The occupation titles and descriptions, as well as reported job titles are included in Exhibit 1.

Exhibit 1 – Occupations, descriptions and sample job titles

SOC Code	Title	Description	Sample of Reported Job Titles
27-4011	Audio and Video Equipment Technicians	Set up, or set up and operate audio and video equipment including microphones, sound speakers, video screens, projectors, video monitors, recording equipment, connecting wires and cables, sound and mixing boards, and related electronic equipment for concerts, sports events, meetings and conventions, presentations, and news conferences. May also set up and operate associated spotlights and other custom lighting systems.	Audio Technician, Audio Visual Specialist, Audio Visual Technician, Audio/Visual Manager, Broadcast Engineer, Master Control Operator (MCO), Operations Technician, Production Assistant, Stagehand, Videographer
27-4012	Broadcast Technicians	Set up, operate, and maintain the electronic equipment used to transmit radio and television programs. Control audio equipment to regulate volume level and quality of sound during radio and television broadcasts. Operate transmitter to broadcast radio or television programs.	Audio Engineer, Board Operator, Broadcast Engineer, Broadcast Maintenance Engineer, Broadcast Operations Engineer, Broadcast Technician, Engineer, Master Control Operator (MCO), Master Control Supervisor, Production Assistant
27-4014	Sound Engineering Technicians	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.	Audio Engineer, Audio Operator, Broadcast Engineer, Broadcast Technician, Master Control Operator, Mixer, Recording Engineer, Sound Editor, Sound Engineer, Sound Technician

Source: O*NET Online

Current and Future Employment

In Los Angeles County, the number audio technology jobs is expected to increase by 8% over the next five years. More than 2,000 job opportunities will be available annually for this group of occupations through 2021 due to new job growth and replacement need (e.g., retirements). Exhibit 2 contains detailed employment projections data for these occupations.

Exhibit 2 – Five-year projections for audio technology jobs in Los Angeles County

SOC	Occupation	2016 Jobs	2021 Jobs	2016 - 2021 Change	2016 – 2021 % Change	Annual Openings
27-4011	Audio and Video Equipment Technicians	10,997	12,091	1,094	10%	1,301
27-4012	Broadcast Technicians	2,583	2,757	174	7%	286
27-4014	Sound Engineering Technicians	4,446	4,651	205	5%	468
		18,027	19,498	1,471	8%	2,055

Source: Economic Modeling Specialists International (EMSI)

Earnings

In Los Angeles County, the entry-level average wage for each of the three audio technology occupations (see Exhibit 3) is below the MIT Living Wage¹ estimate of \$14.48 per hour for a single adult. The average annual earnings for this occupation group (all levels of employment) in the region ranges from \$54,000 - \$76,000 per year, assuming full-time employment.

Exhibit 3 contains hourly wages and annual average earnings for these occupations. Entry-level hourly earnings is represented by the 10th percentile of wages, median hourly earnings is represented by the 50th percentile of wages, and experienced hourly earnings is represented by the 90th percentile of wages, demonstrating various levels of employment.

Exhibit 3 – Earnings for audio technologies in Los Angeles County, 2016-2021

SOC	Occupation	Entry-Level Hourly Earnings	Median Hourly Earnings	Experienced Hourly Earnings	Average Annual Earnings
27-4014	Sound Engineering Technicians	\$14.28	\$29.24	\$65.40	\$76,000

¹ MIT Living Wage Calculator. <http://livingwage.mit.edu/>

27-4012	Broadcast Technicians	\$13.24	\$24.32	\$46.11	\$54,000
27-4011	Audio and Video Equipment Technicians	\$13.10	\$24.18	\$46.78	\$56,000
AVERAGE		\$13.54	\$25.91	\$52.76	\$61,000

Source: Economic Modeling Specialists International (EMSI)

Employer Job Postings

In this research brief, real-time labor market information is used to provide a more nuanced view of the current job market, as it captures job advertisements for occupations relevant to the field of study. Employer job postings are consulted to understand who is employing audio technology occupations, and what they are looking for in potential candidates. To identify job postings related to audio technology jobs, the three SOC codes used throughout this report were used as search terms.

Top Occupations

In 2016, there were 654 employer postings for audio technology jobs. Nearly half of the postings (44%) were for audio and video equipment technicians (288 job postings). There were 744 job postings for the same cluster of occupations in 2015, and 533 job postings in 2014.

Exhibit 4 – Top occupations in job postings (n=654)

SOC Code	Occupation	Job Postings, Full Year 2016
27-4011	Audio and Video Equipment Technicians	288
27-4012	Broadcast Technicians	201
27-4014	Sound Engineering Technicians	165

Source: Labor Insight/Jobs (Burning Glass)

Top Titles

The top job titles for employers posting ads for audio technology jobs are listed in exhibit 5. AV Technician/Installation Technician was mentioned as the job title in 21% of all relevant job postings (139 postings).

Exhibit 5 –Job titles (n=654)

Title	Job Postings, Full Year 2016
AV Technician/Installation Technician	139
Production Assistant	54

Board Operator	40
Theater/Stage Technician	25
AV Engineer	13
Broadcast Engineer	13
Audio/Sound Engineer	21
Master Control Operator	10
Sound Mixer/Boom Operator	9
Broadcast Technician	8

Source: Labor Insight/Jobs (Burning Glass)

Top Employers

Exhibit 6 lists the major employers hiring professionals in the field of audio technologies. Top employers postings job ads included PSAV Presentation Services, CBS Broadcasting, California State University, Fox and NBC. The top worksite cities in the region for these occupations were Los Angeles, Burbank, El Segundo, Culver City and Glendale.

Exhibit 6 – Top employers (n=389)

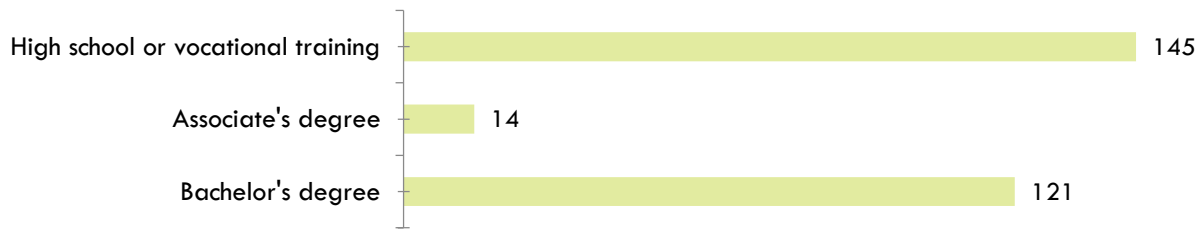
Employer	Job Postings, Full Year 2016
PSAV Presentation Services	58
CBS Broadcasting	24
California State University	14
Fox	14
NBC	14
Disney	11
DreamWorks	11
iHeartMedia, Inc.	10
Time Warner	9
AT&T	8

Source: Labor Insight/Jobs (Burning Glass)

Advertised Education Levels

Exhibit 7 displays the education level requested by employers in online job ads. The majority of employers were looking for a candidate with a high school diploma or vocational training. Approximately 57% of job postings did not specify a level of education.

Exhibit 7 – 2016 Online job ads with minimum advertised education requirements for audio technology jobs (n=280)



Source: Labor Insight/Jobs (Burning Glass)

Industry Concentration

Audio technology jobs in Los Angeles County are most often found in the motion picture and video production industry (7% of total jobs in the industry). Exhibit 8 shows the industries that are the largest employers of audio technology jobs in the region.

Exhibit 8 – Industries with the largest number of audio technology jobs, 2016

NAICS (6-Digit)	Industry	Occupation Group Jobs in Industry	% of Occupation Group in Industry
512110	Motion Picture and Video Production	9,482	53%
515120	Television Broadcasting	1,793	10%
711510	Independent Artists, Writers, and Performers	837	5%
512191	Teleproduction and Other Postproduction Services	575	3%
512240	Sound Recording Studios	541	3%
512230	Music Publishers	354	2%

Education and Training

Exhibit 9 shows the typical entry-level education requirement for the occupations of interest, along with the typical on-the-job training, and percentage of workers in the field who hold a community college award or have completed some postsecondary courses. Nearly half of the workforce in all three occupations have completed some community college education as their highest level of education.

Exhibit 9 – Education and training requirements 2015-2020

SOC	Occupation	Typical entry-level education	Typical on-the-job training	% of Community College Award Holders or Some Postsecondary Coursework
27-4011	Audio and Video Equipment Technicians	Postsecondary nondegree award	Short-term on-the-job training	45%
27-4012	Broadcast Technicians	Associate degree	Short-term on-the-job training	45%
27-4014	Sound Engineering Technicians	Postsecondary nondegree award	Short-term on-the-job training	45%

Source: Economic Modeling Specialists International, Bureau of Labor Statistics Employment Projections (Educational Attainment)

Currently, there are six community colleges in Los Angeles County that train students in programs related to audio technology. Exhibit 10 displays the headcount and annual average community college awards for each of the colleges training in this field. Headcount is the actual number of students enrolled, regardless of credit hours. It is also important to note that an award is not equivalent to a single person in search of a job opening, since a student may earn more than one award (e.g. an associate degree and a certificate).

Between 2012-2015, the total annual average community college awards conferred was 298 (30 associate degrees and 268 certificates) across one program: Commercial Music (1005.00).

Exhibit 10 –CCC Student Awards (by TOP and College), 2012-2015 (Average)

1005.00 – Commercial Music							
College	Headcount	CCC Associate Degrees	CCC Certificates	Total CC Awards	Program Title	AA or AS	C
Cerritos	94	1	-	1	Commercial Music	X	
					Commercial Music Production		X
Citrus	550	19	41	60	Recording Technology	X	
					Audio Recording Technology		X
LA City	487	N/A	139	139	Instrumental Performer		X
					Music Copyist		X
					Orchestrator/Arranger		X
LA Harbor	187	N/A	1	1	Music Media		X
					Music Performance		X
					Music Songwriting		X
					Music Theory		X
					Music Arranging		X
					Music Recording Arts		X
LA Valley	348	2	11	13	Instrumental/Vocal Performer		X
					Music Notation		X

					Commercial Music	X	
					Jazz Studies		X
Long Beach	521	9	76	85	Composer/Arranger	X	X
					Music Performance – Instrumentalist Concentration		X
					Music Performance – Vocalist Concentration		X
					Music Production – Music Technology Concentration		X
					Music Production – Songwriter/Producer Concentration		X
					Audio Production – Record Producer Concentration	X	X
					Audio Production – Recording Engineer Concentration		X
					Compton	86	-
East LA	163	-	-	-	-	-	
Glendale	90	-	-	-	-	-	
LA Mission	1	-	-	-	-	-	
LA Pierce	215	-	-	-	-	-	
LA Southwest	13	-	-	-	-	-	
Pasadena	12	-	-	-	-	-	
West LA	6	-	-	-	-	-	
TOTAL	2,773	30	268	298			

Source: California Community Colleges Chancellor's Office MIS Data Mart

Regional supply data shows that there is a supply of students who have completed program(s) in non-California community college institutions. The following institutions have awarded the following:

Argosy University-The Art Institute of California-Hollywood: 0 Average Annual Associate degrees

Argosy University-The Art Institute of California-Los Angeles: 4 Average Annual Associate degrees

Student Outcomes

The CTE LaunchBoard provides student outcome data on the effectiveness of CTE programs. The following student outcome information was collected from exiters of the Commercial Music Taxonomy of Program (TOP) code (1005.00) in Los Angeles County for the 2014-15 academic year.

- The median annual wage after program completion is \$12,175
- 14% of students are earning a living wage
- 56% of students are employed within six months after completing a program

Source: CTE LaunchBoard

Sources

O*Net Online, Labor Insight/Jobs (Burning Glass), Economic Modeling Specialists International (EMSI), MIT Living Wage Calculator, Bureau of Labor Statistics (BLS) Education Attainment, California Community Colleges Chancellor's Office Management Information Systems (MIS) Data Mart, CTE LaunchBoard, Statewide CTE Outcomes Survey, Employment Development Department Unemployment Insurance Dataset