

**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 Wage[[1]](#footnote-1) 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 |
| 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

1. MIT Living Wage Calculator. http://livingwage.mit.edu/ [↑](#footnote-ref-1)