**Audiovisual Technology Occupations**

**Labor Market Information Report**

Prepared by the San Francisco Bay Center of Excellence

for Labor Market Research

April 2018

# Recommendation

Based on all available data included in this report, there appears to be an undersupply of Audiovisual Technology workers compared to the demand for this cluster of occupations in the Bay region and the East Bay sub-region. The annual gap between demand and supply is about 955 in the region and about 210 in the East Bay sub-region. Even when the two occupations selected by Diablo Valley College (DVC) that require a Bachelor’s degree are excluded from the calculation for demand, to be more conservative with the demand estimate, there is still an annual undersupply in the Bay region of 440 and in the East Bay sub-region of about 115. There are very few students in the region taking courses or getting awards on the TOP code selected by DVC, TOP 0699.00 - Other Media and Communications. Therefore, the data is very limited for supply and for student outcomes.

This report also provides student outcomes data on employment and earnings for programs on TOP 0699.00 - Other Media and Communications, in the state and region. It is recommended that this data be reviewed to better understand how outcomes for students taking courses on this TOP code compare to potentially similar programs at colleges in the state and region as well as to outcomes across all CTE programs at Diablo Valley College (DVC) and in the region. However, the programs on this TOP code may not be comparable to the new program for Audiovisual Technology proposed by DVC, since this TOP code is for any emerging program areas which cannot be coded to other six-digit TOP codes under Media and Communications.

# Introduction

This report profiles Audiovisual Technology occupations in the 12 county Bay Region and the East Bay sub-region (Alameda and Contra Costa counties) for a proposed new Certificate at Diablo Valley College. The proposed program is intended to address the following need, as stated in the request to COE for a labor market information report: “DVC's Music Industry Studies program, CCSF's Broadcast Electronic Media Arts (BEMA) department, and Laney College's Media Communications department have collaborated in an RJV to develop regional pathways to InfoComm International's Certified Technology Specialist certification, an audiovisual (AV) professional credential. InfoComm International is the trade association representing the professional audiovisual and information communication industries worldwide and is working closely in support of this program's development. The $85 billion AV industry is growing rapidly and AV professionals earn an excellent living in a rapidly changing high tech field. Along with this growth, there is a "graying out" of the current workforce and InfoComm is concerned that there are not enough qualified new entrants. At this time, there is no supply coming from Bay Area community college programs to meet the demand.”

* **Audio-Visual and Multimedia Collections Specialists (SOC 25-9011)**: Prepare, plan, and operate multimedia teaching aids for use in education. May record, catalogue, and file materials.

*Entry-Level Educational Requirement:* *Bachelor’s Degree*

*Training Requirement:* *None*

*Percentage of Community College Award Holders or Some Postsecondary Coursework:* 12%

* **Producers and Directors (27-2012)**: Produce or direct stage, television, radio, video, or motion picture productions for entertainment, information, or instruction. Responsible for creative decisions, such as interpretation of script, choice of actors or guests, set design, sound, special effects, and choreography.
  + **Technical Directors/Managers (27-2012.05):** Coordinate activities of technical departments, such as taping, editing, engineering, and maintenance, to produce radio or television programs.

**Note:** Traditional LMI from EMSI is not available at the eight-digit level for SOC codes. So the information provided in Tables 1 and 2 are for the six-digit SOC code level. However, LMI from online job postings is available at the eight-digit SOC code level.

*Entry-Level Educational Requirement:* *Bachelor’s Degree*

*Training Requirement:* *None*

*Percentage of Community College Award Holders or Some Postsecondary Coursework:* 18%

* **Audio and Video Equipment Technicians (SOC 27-4011)**: 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.

*Entry-Level Educational Requirement:* *Postsecondary Nondegree Award*

*Training Requirement:* *Short-term on-the-job training*

*Percentage of Community College Award Holders or Some Postsecondary Coursework:* 46%

* **Sound Engineering Technicians (SOC 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.

*Entry-Level Educational Requirement:* *Postsecondary Nondegree Award*

*Training Requirement:* *Short-term on-the-job training*

*Percentage of Community College Award Holders or Some Postsecondary Coursework:* 46%

# Occupational Demand

**Table 1. Employment Outlook for Audiovisual Technology Occupations in Bay Region**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Occupation | 2017 Jobs | 2022 Jobs | 5-Yr Change | 5-Yr % Change | 5-year Open-ings | Annual Open-ings | 10% Hrly Wage | Median Hrly Wage |
| Audio-Visual & Multimedia Collections Specialists | 326 | 348 | 22 | 7% | 170 | 34 | $16.07 | $24.05 |
| Producers and Directors | 4,209 | 4,685 | 476 | 11% | 2,425 | 485 | $18.88 | $28.71 |
| Audio & Video Equipment Technicians | 3,221 | 3,475 | 254 | 8% | 1,783 | 357 | $15.14 | $22.60 |
| Sound Engineering Technicians | 803 | 846 | 44 | 5% | 423 | 85 | $15.33 | $28.66 |
| **Total** | **8,559** | **9,354** | **795** | **9%** | **4,801** | **960** | **$17.03** | **$26.23** |

*Source: EMSI 2018.1***Bay Region** includes Alameda, Contra Costa, Marin, Monterey, Napa, San Benito, San Francisco, San Mateo, Santa Clara, Santa Cruz, Solano and Sonoma Counties

**Table 2. Employment Outlook for Audiovisual Technology Occupations in East Bay Sub-Region**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Occupation | 2017 Jobs | 2022 Jobs | 5-Yr Change | 5-Yr % Change | 5-year Open-ings | Annual Open-ings | 10% Hrly Wage | Median Hrly Wage |
| Audio-Visual & Multimedia Collections Specialists | 102 | 109 | 7 | 7% | 53 | 11 | $16.83 | $23.23 |
| Producers and Directors | 749 | 839 | 89 | 12% | 436 | 87 | $17.91 | $24.13 |
| Audio & Video Equipment Technicians | 873 | 931 | 59 | 7% | 468 | 94 | $15.50 | $24.47 |
| Sound Engineering Technicians | 214 | 222 | 8 | 4% | 108 | 22 | $15.04 | $27.78 |
| **Total** | **1,937** | **2,100** | **163** | **8%** | **1,064** | **213** | **$16.45** | **$24.64** |

*Source: EMSI 2018.1***East Bay Sub-Region** includes Alameda and Contra Costa counties

### Job Postings in Bay Region and East Bay Sub-Region

**Table 3. Number of Job Postings by Occupation for latest 12 months (March 2017 – February 2018)**

|  |  |  |
| --- | --- | --- |
| Occupation | Bay Region | East Bay |
| Audio and Video Equipment Technicians (27-4011.00) | 370 | 43 |
| Sound Engineering Technicians (27-4014.00) | 137 | 7 |
| Audio-Visual and Multimedia Collections Specialists (25-9011.00) | 25 | 3 |
| Technical Directors/Managers (27.2012.05) | 0 | 0 |
| **Total** | **532** | **53** |

*Source: Burning Glass*

**Table 4. Top Job Titles for Audiovisual Technology Occupations for latest 12 months (March 2017 – February 2018)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Common Title | Bay | East Bay | Common Title | Bay | East Bay |
| Audio Visual Technician | 175 | 24 | Hardware Engineer | 8 | 0 |
| Director of Event Technology | 26 | 1 | Audio Visual Specialist | 6 | 0 |
| Video Production Specialist | 10 | 2 | Sound Designer | 6 | 0 |
| Audio Dsp Engineer | 8 | 0 | Technical Specialist - Audio Visual | 6 | 0 |
| Audio Engineer | 8 | 0 | Theater Technician | 6 | 3 |

*Source: Burning Glass*

# Industry Concentration

**Table 5. Industries hiring Audiovisual Technology Workers in Bay Region**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Industry – 4 Digit NAICS (No. American Industry Classification) Codes | Jobs in Industry (2017) | Jobs in Industry (2022) | % Change (2017-22) | % in Industry (2017) |
| Motion Picture and Video Industries (5121) | 2,235 | 2,502 | 12% | 26.1% |
| Radio and Television Broadcasting (5151) | 702 | 700 | (0%) | 8.2% |
| Other Information Services (5191) | 674 | 872 | 29% | 7.9% |
| Education and Hospitals (Local Government) (9036) | 374 | 392 | 5% | 4.4% |
| Commercial & Industrial Machinery & Equipment Rental & Leasing (5324) | 338 | 387 | 14% | 4.0% |
| Performing Arts Companies (7111) | 338 | 360 | 7% | 3.9% |
| Independent Artists, Writers, and Performers (7115) | 331 | 308 | (7%) | 3.9% |
| Colleges, Universities, and Professional Schools (6113) | 299 | 338 | 13% | 3.5% |
| Sound Recording Industries (5122) | 288 | 287 | (0%) | 3.4% |
| Advertising, Public Relations, and Related Services (5418) | 286 | 310 | 8% | 3.3% |
| Cable and Other Subscription Programming (5152) | 277 | 254 | (8%) | 3.2% |
| Education and Hospitals (State Government) (9026) | 244 | 264 | 8% | 2.8% |
| Computer Systems Design and Related Services (5415) | 167 | 202 | 21% | 1.9% |
| Promoters of Performing Arts, Sports, and Similar Events (7113) | 161 | 177 | 10% | 1.9% |
| Religious Organizations (8131) | 157 | 165 | 5% | 1.8% |
| Local Government, Excluding Education and Hospitals (9039) | 108 | 116 | 7% | 1.3% |
| Employment Services (5613) | 90 | 97 | 8% | 1.1% |

*Source: EMSI 2018.1*

**Table 6. Top Employers Posting Jobs in Bay Region and East Bay for latest 12 months (March 2017 – February 2018)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Employer** | **Bay** | **Employer** | **Bay** | **Employer** | **East Bay** |
| Psav Presentation Services | 105 | Lab126 | 6 | Psav Presentation Services | 5 |
| Apple Inc. | 25 | Compass Group | 5 | Whitlock | 5 |
| Psav | 24 | Excell | 5 | Live Nation Worldwide | 4 |
| Amazon.com | 17 | Google Inc. | 5 | Psav | 3 |
| Williams-Sonoma | 8 | Whitlock | 5 | University Of California Berkeley | 3 |
| Live Nation Worldwide | 7 | Facebook | 4 | University of California | 3 |

*Source: Burning Glass*

# Educational Supply

The proposed TOP code for this program is TOP 0699.00 - Other Media and Communications. Only San Jose City College awards degrees or certificates on that TOP code in the Bay Region. According to COCI, the program title is Media Arts. At the time of the writing of this report, other programs at community colleges or other postsecondary educational institutes are not showing up. In addition, there are no community colleges issuing awards on CIP 10.0203 - Recording Arts Technology/Technician, which is the closest match to this program of study.

**Table 7. Other Media and Communications Programs on TOP 0699.00.00 in Bay Region**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| College | Sub-Region | CC Headcount | Associate Degrees | Certificates or Other Credit Awards | Total Awards |
| San Jose | Silicon Valley | on another TOP | 0 | 2 | 2 |
| San Francisco | Mid-Peninsula | 11 | 0 | 0 | 0 |
| **Total Bay Region** | | **11** | **0** | **2** | **2** |
| **Total East Bay Sub-Region** | | **0** | **0** | **0** | **0** |

# *Source: IPEDS, Data Mart and Launchboard*

NOTE: For Community Colleges, the annual average for Associate Degrees and Certificates is 2014-17. Headcount is for 2016-17. There appears to be no programs at Other Educational Postsecondary Institutes based on a crosswalk of TOP to CIP codes.

# Gap Analysis

The labor market gap is significant in the Bay region for this cluster of occupation with total annual openings of 960 and annual supply of two awards. This represents an annual undersupply of 958 students. In the East Bay sub-region, there is also a gap with total annual openings of 213 and no awards. Even when the two occupations selected by Diablo Valley College (DVC) that require a Bachelor’s degree are excluded from the calculation for demand, to be more conservative with the demand estimate, there is still an annual undersupply in the Bay region of 440 and in the East Bay sub-region of 116.

# Student Outcomes

Note: There is very little information in the Launchboard on this TOP code in the Bay Region.

**Table 8. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 0699.00 - Other Media and Communications in 2015-16 in the State**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **2015-16** | **Bay  (All CTE Programs)** | **Diablo Valley**  **(All CTE Programs)** | **State (0699.00)** | **Bay (0699.00)** | **Top College on 0699.00 in the State** | |
| % Employed Four Quarters After Exit | 74% | 68% | 62% | 100%  (2 students) | Cusesta | 92%  (12 students) |
| Median Earnings Two Quarters After Exit | $10,310 | $9,735 | $6,245 | $6,315  (1 student) | Cuesta | $7,115  (11 students) |
| Median % Change in Earnings | 46% | 52% | 49% | 14% (1 student) | Cuesta | 240% (11 students) |
| % of Students Earning a Living Wage | 63% | 55% | 30% | 0% (1 student) | San Diego Continuing Ed | 36%  (33 students) |

*Source: Launchboard (version available on 3/9/18)*

# Skills & Certifications

**Table 9. Top Skills for Audiovisual Technology Occupations in the Bay Region (March 2017 – February 2018)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Skill** | **Postings** | **Skill** | **Postings** | **Skill** | **Postings** |
| Microsoft Office | 151 | Printers | 42 | C++ | 25 |
| Microsoft Excel | 137 | Project Management | 41 | Electrical Engineering | 25 |
| Dynamic Host Configuration Protocol (DHCP) | 112 | Photography | 40 | Inventory Control | 25 |
| Universal Serial Bus (USB) | 106 | Event Planning | 39 | Audio Recording | 24 |
| Equipment Operation | 105 | Audio Engineering | 37 | Digital Signal Processing (DSP) | 24 |
| Microsoft Operating Systems | 105 | Operations Management | 35 | Microsoft Powerpoint | 24 |
| IP Address Setup | 104 | Contract Management | 34 | Account Management | 23 |
| Switches | 103 | Python | 33 | Budgeting | 23 |
| Network Printers | 97 | Customer Service | 32 | Cost Control | 23 |
| Upselling Products and Services | 91 | Power Distribution | 32 | Debugging | 23 |
| Software Issue Resolution | 90 | Video Conferencing | 32 | Inventory Management | 23 |
| Scheduling | 65 | Software Development | 31 | MATLAB | 23 |
| Broadcast | 56 | Video Production | 31 | Software Engineering | 23 |
| Supervisory Skills | 53 | Routing | 30 | Cisco | 22 |
| Technical Support | 49 | Employee Relations | 29 | Consumer Electronics | 22 |
| Routers | 46 | Digital Video | 28 | Digital Audio | 22 |
| Repair | 44 | Music | 27 | Adobe Photoshop | 21 |
| Customer Contact | 42 | Sales Management | 27 | Validation | 21 |

*Source: Burning Glass*

**Table 10. Certifications for Audiovisual Technology Occupations in the Bay Region (March 2017 – February 2018)**

Note: 96% of records have been excluded because they do not include a certification. As a result, the chart has not been included.

**Table 11. Education Requirements in Bay Region**

|  |  |
| --- | --- |
| **Education (minimum advertised)** | **Latest 12 Mos. Postings** |
| High school or vocational training | 161 (49%) |
| Associate Degree | 16 (5%) |
| Bachelor’s Degree or Higher | 154 (46%) |

*Source: Burning Glass*

# Methodology

Occupations for this report were identified by use of skills listed in O\*Net descriptions and job descriptions in Burning Glass. Labor demand data is sourced from Economic Modeling Specialists International (EMSI) occupation data and Burning Glass job postings data. Educational supply and student outcomes data is retrieved from multiple sources, including CTE Launchboard and CCCCO Data Mart.

# Sources

O\*Net Online

Labor Insight/Jobs (Burning Glass)

Economic Modeling Specialists International (EMSI)

CTE LaunchBoard [www.calpassplus.org/Launchboard/](http://www.calpassplus.org/Launchboard/)

Statewide CTE Outcomes Survey

Employment Development Department Unemployment Insurance Dataset

Living Insight Center for Community Economic Development

Chancellor’s Office MIS system

# Contacts

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