

Game Audio Occupations

Labor Market Information Report

Prepared by the San Francisco Bay Center of Excellence
for Labor Market Research
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Recommendation

Based on all available data included in this report, there appears to be an undersupply of workers to fill Game Audio occupations compared to the demand for this cluster of occupations in the Bay region and the two-county sub-region of San Mateo and Santa Clara counties. The annual gap between demand and supply is at least 120 in the Bay region and at least 50 in the sub-region. The gap could be even larger if demand for the Multimedia Artists and Animators occupation is included in the demand calculation. Even when a more conservative demand number is used, the undersupply still warrants the addition of Foothill's new Game Audio program.

This report also provides some student outcomes data on employment and earnings for programs that may be training students for these Game Audio occupations at several Bay region colleges. It is recommended that this data be reviewed to better understand how student outcomes for these Digital Audio programs compare to student outcomes in the Bay region for all programs and the state for the TOP code where some of these programs tend to be coded.

Introduction

This report profiles a cluster of Game Audio related occupations in the 12 county Bay Region and a two-county sub-region (Santa Clara and San Mateo County) for a new Certificate of Achievement in Game Audio at Foothill College.

- **Multimedia Artists and Animators (SOC 27–1014):** Create special effects, animation, or other visual images using film, video, computers, or other electronic tools and media for use in products or creations, such as computer games, movies, music videos, and commercials.

Entry-Level Educational Requirement: Bachelor’s Degree

Training Requirement: Moderate-term on-the-job training

Percentage of Community College Award Holders or Some Postsecondary Coursework: 29%

- **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: 44%

- **Film and Video Editors (SOC 27–4032):** Edit moving images on film, video, or other media. May edit or synchronize soundtracks with images.

Entry-Level Educational Requirement: Bachelor’s Degree

Training Requirement: None

Percentage of Community College Award Holders or Some Postsecondary Coursework: 29%

Occupational Demand

Table 1. Employment Outlook for Occupations Related to Game Audio in the Bay Region

Occupation	2016 Jobs	2021 Jobs	5-Yr Change	5-Yr % Change	5-year Openings	Annual Openings	10% Hrly Wage	Median Hrly Wage
Multimedia Artists and Animators	4,323	4,660	337	8%	2,417	483	\$12.93	\$35.29
Film and Video Editors	1,322	1,513	191	14%	832	166	\$21.16	\$27.84
Sound Engineering Technicians	808	866	58	7%	456	91	\$15.36	\$29.47
Total	6,453	7,040	586	9%	3,704	741	\$14.92	\$33.03

Source: EMSI 2017.3

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 Occupations Related to Game Audio in the Two-County Sub-Region

Occupation	2016 Jobs	2021 Jobs	5-Yr Change	5-Yr % Change	5-year Openings	Annual Openings	10% Hrly Wage	Median Hrly Wage
Multimedia Artists and Animators	1,748	1,959	211	12%	1,045	209	\$16.23	\$40.29
Film and Video Editors	421	507	86	20%	291	58	\$21.34	\$30.59
Sound Engineering Technicians	197	223	26	13%	125	25	\$16.73	\$31.01
Total	2,366	2,689	323	14%	1,461	292	\$17.18	\$37.79

Source: EMSI 2017.3

Two-County Sub-Region includes San Mateo and Santa Clara Counties

Job Postings in Bay Region and Two-County (San Mateo and Santa Clara Counties) Sub-Region

Table 3. Number of Job Postings by Occupation for latest 12 months (Nov. 2016 – Oct. 2017)

Occupation	Bay Region	Two-County
Multimedia Artists and Animators (27-1014)	746	377
Sound Engineering Technicians (27-4014)	147	104
Film and Video Editors (27-4032)	125	22
Total	1,018	503

Source: Burning Glass

Table 4. Top Job Titles for Game Audio Occupations for latest 12 months (Nov. 2016 – Oct. 2017)

Common Title	Bay Region	Two County
Interaction Designer	414	227
Animator	133	59
Video Editor	119	19
Visual Effects Artist	42	19
Graphic Designer	33	15
Interactive Designer	31	10
Content Producer	17	2
Audio Dsp Engineer	9	9
3D Modeler	8	6

Audio Dsp Algorithm Engineer	6	6
Audio Engineer	7	5
Sound Designer	8	5

Source: Burning Glass

Industry Concentration

Table 5. Industries hiring Game Audio Occupations in Bay Region

Industry – 4 Digit NAICS (North American Industry Classification) Codes	Jobs in Industry (2016)	Jobs in Industry (2021)	% Change (2016–21)	% in Industry (2016)
Computer Systems Design and Related Services (5415)	8,661	10,234	18%	28.3%
Other Information Services (5191)	4,320	5,662	31%	14.1%
Motion Picture and Video Industries (5121)	1,653	1,775	7%	5.4%
Software Publishers (5112)	1,591	1,912	20%	5.2%
Federal Government, Civilian (9011)	1,524	1,500	(2%)	5.0%
Data Processing, Hosting, and Related Services (5182)	888	1,172	32%	2.9%
Management, Scientific & Technical Consulting Services (5416)	847	992	17%	2.8%
Management of Companies and Enterprises (5511)	724	779	8%	2.4%
Advertising, Public Relations, and Related Services (5418)	690	772	12%	2.3%
Specialized Design Services (5414)	506	529	5%	1.7%
Employment Services (5613)	429	471	10%	1.4%
Scientific Research and Development Services (5417)	428	453	6%	1.4%
Independent Artists, Writers, and Performers (7115)	426	401	(6%)	1.4%
Electronic Shopping and Mail–Order Houses (4541)	356	500	40%	1.2%
Colleges, Universities, and Professional Schools (6113)	310	349	13%	1.0%
Education and Hospitals (State Government) (9026)	303	313	3%	1.0%

Source: EMSI 2017.3

Table 6. Top Employers Posting Jobs in Bay Region and Two–County Sub–Region for latest 12 months (Nov. 2016 – Oct. 2017)

Employer	Bay Region	Employer	Two County
Apple Inc.	44	Apple Inc.	44
Intuit	17	Intuit	17
Accenture	16	Electronic Arts Incorporated	15
Electronic Arts Incorporated	15	Machine Zone	14
General Electric Company	14	Activision	12
Machine Zone	14	Facebook	10
Activision	13	Google Inc.	10
Take Two Interactive	13	Vmware	9
Amazon.com	11	Cisco Systems Incorporated	8
Google Inc.	11	Amazon.com	7

Source: Burning Glass

Educational Supply

Table 7. Digital Media: Digital Audio Programs in the Bay Region on TOP 0614.00 Digital Media and 0614.10 Multimedia and CIP 10.0304 Animation, Interactive Technology, Video Games and Special Effects and CIP 50.0411 Game and Interactive Media Design

Note: Only colleges who have programs with a Digital Audio focus under the two TOP 06 codes above in the Bay Region are included in this table. However, if they are granting other awards on those TOP codes for different program areas, then those will be included as well. From the BACCC list of new program endorsements and from a search on program titles in the Curriculum Inventory System (COCI), the following colleges in the Bay Region appear to have a Digital Media/Digital Audio program.

On their website, Berkeley City College lists a Multimedia Arts and Animation and Game Design Associate Arts Degree with a course in Sound Recording & Editing and Lab as well as some other courses that may be teaching similar skills to the Game Audio program proposed by Foothill. Diablo Valley College lists on their website a degree and certificate programs in Broadcast Communication Arts such as Basic Digital Field Production and Basic Studio. Similarly, Gavilan College has an Electronic Music/Sound Design course as part of their Digital Video Editor Specialist Certificate of Proficiency listed on their Digital Media website. College of San Mateo has an Applied Audio and Video Production Certificate of Specialization on their website. In the Curriculum Inventory System (COCI) Santa Rosa has a Digital Media: Audio degree and certificate programs.

College	Sub-Region	Award TOP06 Code	CC Headcount	Associate Degrees	Certificates or Other Credit Awards	Total Awards
Berkeley City	East Bay	0614.10	314	5	39	44
Diablo Valley	East Bay	061410 (students taking courses on 061400)	783	11	6	17
Gavilan	Silicon Valley	061400	15	1	1	2
San Mateo	Mid-Peninsula	061400	697	13	17	30
Santa Rosa	North Bay	061410	319	8	9	17
Academy of Art University	Mid-Peninsula (SF)	n/a	n/a	26	0	26
Total Bay Region			2,128	64	72	136
Total Two-County Sub-Region			712	14	18	32

Source: IPEDS, Data Mart and Launchboard

NOTE: Headcount of students who took one or more courses and Number of Students who received an award is for 2015–16. For Community Colleges, the annual average for Associate Degrees and Certificates is 2014–17. For Academy of Art University, the annual average for certificates is 203–16. For the 26 AA degrees from this other postsecondary institute, five of those under CIP 50.099 Music, Other are believed to correspond to their Music Production and Sound Design for Visual Media. The other 21 degrees may be awards for their Game Development and Game Programming degrees (information from their website: <https://www.academyart.edu/academics/undergraduate-education>)

Gap Analysis

There appears to be a labor market gap in the Bay region for this cluster of occupations related to Game Audio with annual openings of 257 (with demand excluded for the Multimedia Artists and Animators occupation) and annual supply of 136 awards. This represents an annual undersupply of about 120 students. In the two-county sub-region, there is also a gap, with annual openings of 83 and annual supply of 32 awards. This represents an annual undersupply of about 50 students. The gap could be even greater if demand for the Multimedia Artists and Animators occupation is included in the demand calculation. In addition, Burning Glass job postings data indicates even higher demand numbers for these occupations than EMSI data indicates.

Student Outcomes

Table 8. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 0614.00 Digital Media at DVC, Gavilan and San Mateo and 0614.10 Multimedia at Berkeley City and Santa Rosa

	Bay Region	State	Bay Region	Berkeley City	Diablo Valley	Gavilan	San Mateo	Santa Rosa
2014-15	All	0614.10	0614.10	0614.10	0614.00	0614.00	0614.00	0614.10
% Employed Four Quarters After Exit	68%	59%	57%	48%	38%	n<10	59%	n<10
Median Earnings Two Quarters After Exit	\$12,640	\$4,471	\$4,482	\$3,953	\$3,889	n<10	\$6,431	n<10
Median % Change in Earnings	37%	30%	38%	11%	17%	n<10	19%	n<10
% of Students Earning a Living Wage	51%	27%	29%	27%	32%	n<10	32%	n<10

Source: Launchboard

Skill & Certifications

Table 9. Top Skills & Certifications for Game Audio Occupations in the Bay Region (Nov 2016 – Oct 2017)

Skill	Latest 12 Mos. Postings	Skill	Latest 12 Mos. Postings	Skill	Latest 12 Mos. Postings
Adobe Photoshop	429	Prototyping	181	Software Development	104
Interaction Design	229	Adobe Aftereffects	163	Information Architecture	89
UX Wireframes	219	User Interface (UI) Design	151	Product Management	81
Adobe Illustrator	213	Process Design	135	Typesetting	75
Visual Design	205	Video Editing	125	Motion Graphics	74
Adobe Indesign	202	MAYA	121	Product Design	72
Adobe Acrobat	185	JavaScript	111	Adobe Premiere	71
Adobe Creative Suite	185	Project Management	109	Web Site Design	65
Animation	184	Graphic Design	108	Simulation	64

Source: *Burning Glass*

Note: There are no certifications requested in the job postings for these occupations.

Table 10. Education Requirements in Bay Region

Note: 50% of records have been excluded because they do not include a degree level. As a result, the chart below may not be representative of the full sample.

Education (minimum advertised)	Latest 12 Mos. Postings
High school or vocational training	16
Associate Degree	9
Bachelor's Degree or Above	488

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/

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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