



Labor Market Analysis for Program Recommendation Game Audio Production Occupations Cabrillo College

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

Based on all available data, there appears to be an “undersupply” of Game Audio Production workers compared to the demand for this cluster of occupations in the Bay region and in the SC-Monterey sub-region (Monterey, San Benito, Santa Cruz counties). There is a projected annual gap of about 1,963 students in the Bay region and 321 students in the SC-Monterey Sub-Region.

Introduction

This report provides student outcomes data on employment and earnings for TOP 1005.00 Commercial Music programs in the state and region. It is recommended that these 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 Cabrillo College and in the region.

This report profiles Game Audio Production Occupations in the 12 county Bay region and in the SC-Monterey sub-region for a proposed new program at Cabrillo College. Labor market information (LMI) is not available at the eight-digit SOC Code level for Video Game Designers (15-1255.01), therefore, the data shown in Tables 1 and 2 is for Web Developers and Digital Interface Designers (at the six digit SOC level) and likely overstates demand for Video Game Designers. Tables 3, 4, 6, 9, 10 and 11 use job postings data from Burning Glass at the eight-digit SOC Code level for Video Game Designers (15-1255.01).

- **Web Developers and Digital Interface Designers (15-1257):** Design, create, and modify Web sites. Analyze user needs to implement Web site content, graphics, performance, and capacity. May integrate Web sites with other computer applications. May convert written, graphic, audio, and video components to compatible Web formats by using software designed to facilitate the creation of Web and multimedia content. Excludes “Multimedia Artists and Animators” (27-1014).
Entry-Level Educational Requirement: Associate’s degree
Training Requirement: None
Percentage of Community College Award Holders or Some Postsecondary Coursework: 26%
- **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.
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: 39%
- **Production Workers, All Other (51-9199):** All production workers not listed separately.
Entry-Level Educational Requirement: High school diploma or equivalent

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

Percentage of Community College Award Holders or Some Postsecondary Coursework: 31%

Occupational Demand

Table 1. Employment Outlook for Game Audio Production Occupations in Bay Region

Occupation	2020 Jobs	2025 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	25% Hourly Earning	Median Hourly Wage
Web Developers and Digital Interface Designers	11,299	12,887	1,587	14%	6,662	1,332	\$37	\$76
Sound Engineering Technicians	578	645	67	12%	447	89	\$25	\$57
Production Workers, All Other	5,602	5,553	-48	-1%	3,480	696	\$12	\$38
Total	17,479	19,085	1,606	9%	10,589	2,117		

Source: EMSI 2021.3

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 Game Audio Production Occupations in SC-Monterey Sub-region

Occupation	2020 Jobs	2025 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	25% Hourly Earning	Median Hourly Wage
Web Developers and Digital Interface Designers	1,916	2,198	282	15%	1,148	230	\$40	\$81
Sound Engineering Technicians	103	123	20	20%	93	19	\$26	\$59
Production Workers, All Other	612	583	-28	-5%	376	75	\$12	\$39
Total	2,631	2,904	273	10%	1,617	324		

Source: EMSI 2021.3

SC-Monterey Sub-Region includes: Monterey, San Benito, Santa Cruz Counties

Job Postings in Bay Region and SC-Monterey Sub-Region

Table 3. Number of Job Postings by Occupation for latest 12 months (Dec 2020 - Nov 2021)

Occupation	Bay Region	SC-Monterey
Web Developers	19,651	262
Production Workers, All Other	6,835	346
Sound Engineering Technicians	294	13
Recycling and Reclamation Workers	52	2

Source: Burning Glass

**Table 4a. Top Job Titles for Game Audio Production Occupations for latest 12 months (Dec 2020 - Nov 2021)
Bay Region**

Title	Bay	Title	Bay
Backend Engineer	671	Web Developer	335
Machine Operator	647	Backend Engineer - Remote	297

Title	Bay	Title	Bay
Front End Engineer	618	Manufacturing Associate	296
Senior Backend Engineer	596	Ux Researcher	287
Senior Front End Engineer	581	Front End Engineer - Remote	263
Production Associate	552	Senior Ux Designer	262
Ux Designer	479	Ui Developer	256
Front End Developer	476	Ui/Ux Designer	180
Production Worker	468	Ruby On Rails Developer	145

Source: Burning Glass

Table 4b. Top Job Titles for Game Audio Production Occupations for latest 12 months (Dec 2020 - Nov 2021) SC-Monterey Sub-Region

Title	SC-Monterey	Title	SC-Monterey
Machine Operator	46	Hired Senior Front End Engineer	12
Senior Backend Engineer	26	Hired Senior Backend Engineer	11
Senior Front End Engineer	26	Third Person In Charge	10
Backend Engineer	22	Operator	9
Front End Engineer - Remote	21	Equipment Operator	8
Backend Engineer - Remote	20	Deli Production Team Member	7
Production Worker	19	Front End Developer Entry Level	7
Front End Engineer	18	Hired Backend Engineer - Remote	7
Production Associate	17	Machine Operator Mechanic	6

Source: Burning Glass

Industry Concentration

Table 5. Industries hiring Game Audio Production Workers in Bay Region

Industry – 6 Digit NAICS (No. American Industry Classification) Codes	Jobs in Industry (2020)	Jobs in Industry (2025)	% Change (2020-25)	% Occupation Group in Industry (2020)
Internet Publishing and Broadcasting and Web Search Portals	2,171	2,768	27%	13%
Custom Computer Programming Services	2,204	2,501	13%	13%
Software Publishers	1,459	1,778	22%	8%
Temporary Help Services	1,645	1,689	3%	10%
Computer Systems Design Services	1,196	1,297	8%	7%

Industry – 6 Digit NAICS (No. American Industry Classification) Codes	Jobs in Industry (2020)	Jobs in Industry (2025)	% Change (2020-25)	% Occupation Group in Industry (2020)
Data Processing, Hosting, and Related Services	487	593	22%	3%
Other Computer Related Services	338	387	14%	2%
Electronic Shopping and Mail-Order Houses	235	258	10%	1%
Corporate, Subsidiary, and Regional Managing Offices	244	227	-7%	1%
Crop Production	220	220	0%	1%

Source: EMSI 2021.3

Table 6. Top Employers Posting Game Audio Production Occupations in Bay Region and SC-Monterey Sub-Region (Dec 2020 - Nov 2021)

Employer	Bay	Employer	SC-Monterey
Uber	218	Threshold Enterprises Limited	21
Amazon	217	Fireclay Tile	10
Apple Inc.	193	University Of California	9
Google Inc.	178	Joby Aviation	9
Multi Color Corporation	174	Pratt Industries Incorporated	8
Facebook	142	Employnet	8
Cisco Systems Incorporated	133	Pilot Flying J	7
Lucid Motors Inc	109	Lockheed Martin Corporation	7
Danaher Corporation	107	Schnitzer Steel Industries	6
TTM Technologies	105	Pratt Industries	6

Source: Burning Glass

Educational Supply

There are seven (7) community colleges in the Bay Region issuing 84 awards on average annually (last 3 years ending 2018-19) on TOP 1005.00 Commercial Music. In the SC-Monterey Sub-Region, there is one (1) community college (Cabrillo) that issued 3 awards on average annually (last 3 years) on this TOP code.

There are a four (4) other CTE educational institutions in the Bay Region issuing 70 awards on average annually (last 3 years ending 2016-17) on TOP 1005.00 Commercial Music. There are no other CTE educational institutions in the SC-Monterey Sub-Region issuing awards on average annually (last 3 years) on this TOP code.

Table 7a. Community College Awards on TOP 1005.00 Commercial Music in Bay Region

College	Subregion	Associate	Certificate Low	Noncredit	Total
Cabrillo	SC-Monterey	1	2	0	3

College	Subregion	Associate	Certificate Low	Noncredit	Total
Diablo Valley	East Bay	11	10	0	21
Foothill	Silicon Valley	13	4	0	17
Las Positas	East Bay	0	0	1	1
Los Medanos	East Bay	7	25	0	32
Ohlone	East Bay	0	0	0	0
West Valley	Silicon Valley	0	10	0	10
Total		32	51	1	84

Source: Data Mart

Note: The annual average for awards is 2016-17 to 2018-19.

Table 7b. Other CTE Institutions Awards on TOP 1005.00 Commercial Music in Bay Region

College	Subregion	Award 1 < 2 academic yrs	Bachelor's Degree	Total
Argosy University-The Art Institute of California-San Francisco	Mid-Peninsula	0	14	14
Cogswell College	Silicon Valley	0	11	11
SAE Expression College	East Bay	0	42	42
San Francisco Conservatory of Music	Mid-Peninsula	3	0	3
Total		3	67	70

Source: Data Mart; Note: The annual average for awards is 2016-17 to 2018-19.

Gap Analysis

Based on the data included in this report, there is a large labor market gap in the Bay region with 2,117 annual openings for the Game Audio Production occupational cluster and 154 annual (3-year average) awards for an annual undersupply of 1,963 students. In the SC-Monterey Sub-Region, there is also a gap with 324 annual openings and 3 annual (3-year average) awards for an annual undersupply of 321 students.

Student Outcomes

Table 8. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 1005.00 Commercial Music

Metric Outcomes	Bay All CTE Programs	Cabrillo All CTE Programs	State 1005.00	Bay 1005.00	SC-Monterey 1005.00	Cabrillo 1005.00
Students with a Job Closely Related to Their Field of Study	73%	76%	43%	37%	N/A	N/A
Median Annual Earnings for SWP Exiting Students	\$44,575	\$39,206	\$21,018	\$27,780	\$15,011	\$15,011
Median Change in Earnings for SWP Exiting Students	30%	31%	42%	50%	N/A	N/A

Metric Outcomes	Bay All CTE Programs	Cabrillo All CTE Programs	State 1005.00	Bay 1005.00	SC-Monterey 1005.00	Cabrillo 1005.00
Exiting Students Who Attained the Living Wage	53%	50%	23%	28%	N/A	N/A

Source: Launchboard Strong Workforce Program Median of 2016-18.

Skills, Certifications and Education

Table 9. Top Skills for Game Audio Production Occupations in Bay Region (Dec 2020 - Nov 2021)

Skill	Posting	Skill	Posting
JavaScript	8,333	Adobe Photoshop	2,780
Software Engineering	5,484	Unit Testing	2,522
Java	4,543	HTML5	2,438
React Javascript	4,529	Adobe Indesign	2,194
Front-end Development	4,493	Scalability Design	2,096
Web Development	3,795	Adobe Acrobat	2,072
Python	3,427	Adobe Creative Suite	2,057
Software Development	3,142	MySQL	2,048
Ruby on Rails	3,004	Hypertext Preprocessor (PHP)	2,017
SQL	3,003	Adobe Illustrator	1,997
Git	2,881	Docker Software	1,990
AngularJS	2,876	Cross-browser	1,986
Ruby	2,796	User Research	1,978
Web Application Development	2,781	User Interface (UI) Design	1,966

Source: Burning Glass

Table 10. Certifications for Game Audio Production Occupations in Bay Region (Dec 2020 - Nov 2021)

Certification	Posting	Certification	Posting
Driver's License	621	Security Clearance	24
OSHA Forklift Certification	145	North American Board of Energy Practitioners (NABCEP)	22
Food Handler Certification	82	Mbe Certified	15
ServSafe	60	IT Infrastructure Library (ITIL) Certification	15
Certified Scrum Trainer (CST)	53	Cdl Class B	15

Certification	Posting	Certification	Posting
Biotechnology Certificate	53	Project Management Professional (PMP)	13
IPC Certification	36	Hazardous Materials Certification	12
Project Management Certification	31	Cdl Class C	12
CDL Class A	28	Certified ScrumMaster (CSM)	11
Food Service Certification	26	Certified Novell Administrator	10

Source: Burning Glass

Note: 95% of records have been excluded because they do not include a certification. As a result, the chart above may not be representative of the full sample.

Table 11. Education Requirements for Game Audio Production Occupations in Bay Region

Education (minimum advertised)	Latest 12 Mos. Postings	Percent 12 Mos. Postings
High school or vocational training	3,206	21%
Associate's degree	270	2%
Bachelor's degree and higher	11,563	77%

Source: Burning Glass

Note: 44% of records have been excluded because they do not include a degree level. As a result, the chart above may not be representative of the full sample.

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 CCCCCO 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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