



Labor Market Analysis for Program Recommendation

Music and Technology Occupations

College of San Mateo

Prepared by the San Francisco Bay Center of Excellence for Labor Market Research
October 2022

Recommendation

Based on all available data, there appears to be an “undersupply” of Music and Technology workers compared to the demand for this cluster of occupations in the Bay region and in the Mid-Peninsula sub-region (San Francisco, San Mateo counties). There is a projected annual gap of about 1,152 students in the Bay region and 378 students in the Mid-Peninsula 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 College of San Mateo and in the region.

This report profiles Music and Technology Occupations in the 12 county Bay region and in the Mid-Peninsula sub-region for a proposed new program at College of San Mateo.

- **Music Directors and Composers (27-2041):** Conduct, direct, plan, and lead instrumental or vocal performances by musical groups, such as orchestras, bands, choirs, and glee clubs. Includes arrangers, composers, choral directors, and orchestrators.
Entry-Level Educational Requirement: Bachelor's degree
Training Requirement: None
Percentage of Community College Award Holders or Some Postsecondary Coursework: 18%
- **Musicians and Singers (27-2042):** Play one or more musical instruments or sing. May perform on stage, for on-air broadcasting, or for sound or video recording.
Entry-Level Educational Requirement: No formal educational credential
Training Requirement: Long-term on-the-job training
Percentage of Community College Award Holders or Some Postsecondary Coursework: 28%
- **Audio and Video Technicians (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. Excludes “Sound Engineering Technicians” (27-4014).
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%

- **Broadcast Technicians (27-4012):** 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.
Entry-Level Educational Requirement: Associate's degree
Training Requirement: Short-term on-the-job training
Percentage of Community College Award Holders or Some Postsecondary Coursework: 39%
- **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%

Occupational Demand

Table 1. Employment Outlook for Music and Technology 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
Music Directors and Composers	1,342	1,384	42	3%	843	169	\$15	\$27
Musicians and Singers	5,586	5,581	-5	-0%	3,333	667	\$17	\$36
Audio and Video Technicians	2,787	2,890	103	4%	1,548	310	\$21	\$28
Broadcast Technicians	486	522	37	8%	298	60	\$17	\$25
Sound Engineering Technicians	615	722	106	17%	437	87	\$20	\$30
Total	10,816	11,099	283	3%	6,458	1,293		

Source: EMSI 2022.1

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 Music and Technology Occupations in Mid-Peninsula 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
Music Directors and Composers	351	360	9	2%	218	44	\$17	\$31
Musicians and Singers	1,501	1,502	1	0%	894	179	\$19	\$37
Audio and Video Technicians	944	968	24	3%	514	103	\$23	\$31
Broadcast Technicians	292	308	16	6%	170	34	\$18	\$28
Sound Engineering Technicians	270	303	33	12%	175	35	\$22	\$31
Total	3,358	3,441	83	2%	1,971	395		

Source: EMSI 2022.1

Mid-Peninsula Sub-Region includes: San Francisco, San Mateo Counties

Job Postings in Bay Region and Mid-Peninsula Sub-Region

Table 3. Number of Job Postings by Occupation for latest 12 months

Occupation	Bay Region	Mid-Peninsula
Audio and Video Equipment Technicians	993	408
Sound Engineering Technicians	375	119
Broadcast Technicians	268	136
Musicians, Instrumental	134	41
Music Directors	103	37
Singers	53	0
Music Composers and Arrangers	11	0

Source: Burning Glass

Table 4a. Top Job Titles for Music and Technology Occupations for latest 12 months - Bay Region

Title	Bay	Title	Bay
Audio Visual Technician	86	Av Support Technician	13
Av Technician	40	Interaction Sound Designer	13
Studio Coordinator	29	Audio Visual Event Technician	12
Board Operator	23	Music Director	12
Audio/Video Technician	19	Senior Technician Walt Theater	12
Audio Visual Support Technician	18	Audio Visual Field Technician	12
Studio Technician	17	Audio Technician	11
Event Technician, Audio Visual	15	Audio Visual Installation Technician	11
Audio Engineer	13	Broadcast Engineer	11

Source: Burning Glass

Table 4b. Top Job Titles for Music and Technology Occupations for latest 12 months - Mid-Peninsula Sub-Region

Title	Mid-Peninsula	Title	Mid-Peninsula
Audio Visual Technician	39	Broadcast Engineer	9
Studio Technician	17	Video Technician	8
Board Operator	15	Audio Technician	8
Interaction Sound Designer	12	Audio Visual Event Technician	8
Av Technician	12	Home Theater Installer	6

Event Technician, Audio Visual	11	Station Broadcast Engineer	6
Studio Coordinator	9	Av Support Technician	6

Source: Burning Glass

Industry Concentration

Table 5. Industries hiring Music and Technology 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)
Religious Organizations	2,069	2,037	-2%	19%
Independent Artists, Writers, and Performers	1,882	2,034	8%	18%
Musical Groups and Artists	1,032	1,014	-2%	10%
Theater Companies and Dinner Theaters	453	478	6%	4%
Motion Picture and Video Production	405	373	-8%	3%
Internet Publishing and Broadcasting and Web Search Portals	400	400	0%	3%
Television Broadcasting	244	235	-4%	2%
Dance Companies	234	302	29%	2%
Sound Recording Studios	228	294	29%	2%
Colleges, Universities, and Professional Schools	212	219	3%	2%

Source: EMSI 2022.1

Table 6. Top Employers Posting Music and Technology Occupations in Bay Region and Mid-Peninsula Sub-Region

Employer	Bay	Employer	Mid-Peninsula
Encore Global	81	Encore Global	63
Encore	51	Encore	28
Eos	48	Astreya	25
Apple Inc.	42	Amazon	19
Amazon	37	Eos	18
Astreya	35	AV Services Inc.	12
Audio Visual Management Solutions	28	Disney	11
Disney	21		
University Of California	19	NBC	10

Facebook	18	Facebook	8
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Source: Burning Glass

Educational Supply

There are seven (7) community colleges in the Bay Region issuing 71 awards on average annually (last 3 years ending 2018-19) on TOP 1005.00 Commercial Music. In the Mid-Peninsula Sub-Region, there are no community colleges that issued awards on average annually (last 3 years) on this TOP code.

There are 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. In the Mid-Peninsula Sub-Region there are two (2) other CTE educational institutions issuing 17 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 Unit	Certificate High Unit	Total
Cabrillo	SC-Monterey	2	3	0	5
Diablo Valley	East Bay	12	7	0	19
Foothill	Silicon Valley	14	6	4	24
Las Positas	East Bay	0	3	1	4
Los Medanos	East Bay	8	0	4	12
Ohlone	East Bay	0	1	0	1
West Valley	Silicon Valley	6	0	0	6
Total		42	20	9	71

Source: Data Mart

Note: The annual average for awards is 2018-19 to 2020-21.

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 1,293 annual openings for the Music and Technology occupational cluster and 141 annual (3-year average) awards for an annual

undersupply of 1,152 students. In the Mid-Peninsula Sub-Region, there is also a gap with 395 annual openings and 17 annual (3-year average) awards for an annual undersupply of 378 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	College of San Mateo All CTE Programs	State 1005.00	Bay 1005.00	Mid-Peninsula 1005.00	College of San Mateo 1005.00
Students with a Job Closely Related to Their Field of Study	74%	74%	46%	40%	N/A	N/A
Median Annual Earnings for SWP Exiting Students	\$47,419	\$55,019	\$21,726	\$28,480	N/A	N/A
Median Change in Earnings for SWP Exiting Students	23%	20%	40%	43%	N/A	N/A
Exiting Students Who Attained the Living Wage	52%	44%	23%	27%	N/A	N/A

Source: Launchboard Strong Workforce Program Median of 2017 to 2020.

Skills, Certifications and Education

Table 9. Top Skills for Music and Technology Occupations in Bay Region

Skill	Posting	Skill	Posting
Customer Service	312	Digital Signal Processing (DSP)	117
Music	299	Equipment Operation	113
Scheduling	267	Multimedia	109
Video Conferencing	246	Wiring	109
Broadcast Industry Knowledge	216	Customer Contact	104
Repair	205	Software Issue Resolution	103
Technical Support	191	Event Planning	95
Audio / Visual Knowledge	154	Upselling Products and Services	95
Operations Management	140	Video Production	95
Vaccination	136	Satisfaction Failure Correction	93
Project Management	135	Budgeting	90
Sales	128	Audio Engineering	87
Cabling	120	Singing	86
Cisco	119	Audio Systems	85

Source: Burning Glass

Table 10. Certifications for Music and Technology Occupations in Bay Region

Certification	Posting	Certification	Posting
Driver's License	393	Audiovisual (AV) Certification	5
Project Management Certification	14	Project Management Professional (PMP)	4
Certified Teacher	14	Security Clearance	3
Cisco Certified Network Associate (CCNA)	13	Food Handler Certification	3
OSHA Safety 10 Hour	9	CompTIA Network+	3
First Aid Cpr Aed	9	Certified Public Accountant (CPA)	2
Capability Model Maturity Integration (CMMI) Certification	7	Cdl Class C	2
Occupational Safety and Health Administration Certification	6	Six Sigma Certification	1
IT Infrastructure Library (ITIL) Certification	6	Public Safety Certificate	1
Cisco Certified Network Professional (CCNP)	6	OSHA Forklift Certification	1

Source: Burning Glass

Note: 76% 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 Music and Technology Occupations in Bay Region

Education (minimum advertised)	Latest 12 Mos. Postings	Percent 12 Mos. Postings
High school or vocational training	449	48%
Associate's degree	57	6%
Bachelor's degree and higher	438	46%

Source: Burning Glass

Note: 51% 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

Contacts

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