** Digital Media Occupations**

**Labor Market Information Report**

**Canada College**

Prepared by the San Francisco Bay Center of Excellence

for Labor Market Research

May 2019

# Recommendation

Based on all available data, there appears to be a significant undersupply of Digital Media workers compared to the demand for this cluster of occupations in the Bay region and in the Mid-Peninsula sub-region (San Francisco and San Mateo Counties.) There is a projected annual gap of about 2,459 students in the Bay region and 1,005 students in the Mid-Peninsula Sub-Region.

This report also provides student outcomes data on employment and earnings for programs on TOP 0614.00 - Digital Media 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 Canada College and in the region.

# Introduction

This report profiles Digital Media Occupations in the 12 county Bay region and in the Mid-Peninsula sub-region for a proposed new program at Canada College. Labor market information (LMI) is not available at the eight-digit SOC Code level for Video Game Designers (15-1199.11), therefore, the data shown in Tables 1 and 2 is for Computer Occupations, All Other (at the six digit SOC level) and likely overstates demand for Video Game Designers. Tables 3, 4, 6, 9, and 10 use job postings data from Burning Glass at the eight-digit SOC Code level for Video Game Designers (15-1199.11).

|  |
| --- |
| * **Computer Occupations, All Other (SOC 15-1199):** All computer occupationsnot listed separately. Excludes “Computer and Information Systems Managers” (11-3021), “Computer Hardware Engineers” (17-2061), “Electrical and Electronics Engineers” (17-2070), “Computer Science Teachers, Postsecondary” (25-1021), “Multimedia Artists and Animators” (27-1014), “Graphic Designers” (27-1024), “Computer Operators” (43-9011), and “Computer, Automated Teller, and Office Machine Repairs” (49-2011).
 |
| Entry-Level Educational Requirement: Bachelor's degree |
| Training Requirement: None |
| Percentage of Community College Award Holders or Some Postsecondary Coursework: 35% |
| * **Camera Operators, Television, Video**, **and Motion Picture (SOC 27-4031):** Operate television, video, or motion picture camera to record images or scenes for various purposes, such as TV broadcasts, advertising, video production, or motion pictures.
 |
| Entry-Level Educational Requirement: Bachelor's *degree* |
| Training Requirement: None |
| Percentage of Community College Award Holders or Some Postsecondary Coursework: 27*%* |
| * **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: None |
| Percentage of Community College Award Holders or Some Postsecondary Coursework: 27*%* |
| * **Film and Video Editors (SOC 27-4032):** Edit moving images on film, video, or other media. May edit or synchronize soundtracks with images. Excludes “Sound Engineering Technicians”(27-4014).
 |
| Entry-Level Educational Requirement: Bachelor's *degree* |
| Training Requirement: None |
| Percentage of Community College Award Holders or Some Postsecondary Coursework: 27*%* |

# Occupational Demand

**Table 1. Employment Outlook for Digital Media Occupations in Bay Region**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Occupation  | 2017 Jobs | 2022 Jobs | 5-Yr Change | 5-Yr % Change | 5-Yr Open-ings | Average Annual Open-ings | 10% Hourly Wage | Median Hourly Wage |
| Computer Occupations, All Other | 19,731 | 21,972 | 2,242  | 11% | 9,101 | 1,820 | $26.99  | $53.32  |
| Camera Operators, Television, Video, and Motion Picture | 731 | 767 | 35  | 5% | 391 | 78 | $15.50  | $22.18  |
| Multimedia Artists and Animators | 4,730 | 5,028 | 298  | 6% | 2,247 | 449 | $13.65  | $38.08  |
| Film and Video Editors | 1,599 | 1,758 | 159  | 10% | 960 | 192 | $20.00  | $29.51  |
| **Total** | **26,791** | **29,526** | **2,735**  | **10%** | **12,698** | **2,540** | **$23.91**  | **$48.36**  |

*Source: EMSI 2019.1*

**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 Digital Media Occupations in Mid-Peninsula Sub-Region**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Occupation  | 2017 Jobs | 2022 Jobs | 5-Yr Change | 5-Yr % Change | 5-Yr Open-ings | Average Annual Open-ings | 10% Hourly Wage | Median Hourly Wage |
| Computer Occupations, All Other | 7,898 | 9,046 | 1,147  | 15% | 3,912 | 782 | $28.37  | $53.70  |
| Camera Operators, Television, Video, and Motion Picture | 303 | 309 | 6  | 2% | 150 | 30 | $16.96  | $25.97  |
| Multimedia Artists and Animators | 1,686 | 1,825 | 140  | 8% | 823 | 165 | $14.83  | $40.72  |
| Film and Video Editors | 686 | 739 | 52  | 8% | 389 | 78 | $18.77  | $29.17  |
| **TOTAL** | **10,574** | **11,919** | **1,345**  | **13%** | **5,274** | **1,055** | **$25.26**  | **$49.24**  |

*Source: EMSI 2019.1*

**Mid-Peninsula Sub-Region** includes San Francisco and 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 (April 2018 - March 2019)**

| Occupation | Bay Region | Mid-Peninsula |
| --- | --- | --- |
|  Video Game Designers (15-1199.011) | 1,262 | 599 |
|  Multimedia Artists and Animators (27-1014.00) | 977 | 477 |
|  Camera Operators, Television, Video, and Motion Picture (27-4031.00) | 289 | 154 |
|  Film and Video Editors (27-4032.00) | 216 | 135 |
|  **Total** |  **2,744**  |  **1,365**  |

*Source: Burning Glass*

**Table 4. Top Job Titles for Digital Media Occupations for latest 12 months (April 2018 - March 2019)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Common Title | Bay | Mid-Peninsula | Common Title | Bay | Mid-Peninsula |
| Interaction Designer | 480 | 226 | Environment Artist | 23 | 13 |
| Video Editor | 209 | 134 | Technical Pm | 23 | 6 |
| Videographer | 186 | 96 | Camera Operator | 19 | 4 |
| Game Designer | 125 | 86 | 3D Modeler | 17 | 8 |
| Animator | 113 | 60 | Summer Instructor, Video Game Design | 17 | 4 |
| Graphic Designer | 102 | 50 | Photography Producer | 16 | 15 |
| Interactive Designer | 53 | 32 | Developer | 15 | 5 |
| Technology | 44 | 0 | Sap Apo | 15 | 0 |
| Visual Effects Artist | 43 | 28 | 3D Designer | 14 | 9 |
| Senior Engineer | 32 | 25 | Technology Evangelist | 14 | 5 |
| Content Producer | 25 | 15 | Lead Game Designer | 13 | 11 |
| Concept Artist | 24 | 15 | Senior Concept Artist | 13 | 7 |
| Content Creator | 24 | 16 | Cinematographer | 12 | 7 |
| Engineer | 24 | 17 | Creator, Food Service Industry | 12 | 9 |

*Source: Burning Glass*

# Industry Concentration

**Table 5. Industries hiring Digital Media Workers in Bay Region**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Industry – 6 Digit NAICS (No. American Industry Classification) Codes | Jobs in Industry (2017) | Jobs in Industry (2022) | % Change (2017-22) | % in Industry (2017) |
| Custom Computer Programming Services (541511) | 4,195 | 4,664 | 17% | 4.1% |
| Internet Publishing and Broadcasting and Web Search Portals (519130) | 2,540 | 3,238 | 10% | 3.0% |
| Computer Systems Design Services (541512) | 2,405 | 2,626 | 10% | 3.9% |
| Software Publishers (511210) | 2,082 | 2,410 | 8% | 4.2% |
| Federal Government, Civilian, Excluding Postal Service (901199) | 1,567 | 1,547 | 6% | 4.3% |
| Data Processing, Hosting, and Related Services (518210) | 1,011 | 1,265 | 4% | 3.5% |
| Motion Picture and Video Production (512110) | 804 | 794 | 3% | 21.1% |
| Corporate, Subsidiary, and Regional Managing Offices (551114) | 759 | 802 | 3% | 0.9% |
| Other Computer Related Services (541519) | 616 | 719 | 2% | 4.3% |
| Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology) (541715) | 328 | 303 | 1% | 0.8% |
| Temporary Help Services (561320) | 297 | 310 | 1% | 0.5% |
| Colleges, Universities, and Professional Schools (611310) | 255 | 268 | 1% | 0.7% |
| Administrative Management and General Management Consulting Services (541611) | 250 | 299 | 1% | 1.3% |
| Local Government, Excluding Education and Hospitals (903999) | 249 | 261 | 1% | 0.2% |
| Teleproduction and Other Postproduction Services (512191) | 247 | 233 | 1% | 21.4% |
| Electronic Computer Manufacturing (334111) | 246 | 250 | 1% | 0.4% |

*Source: EMSI 2019.1*

**Table 6. Top Employers Posting Digital Media Occupations in Bay Region and Mid-Peninsula Sub-Region (April 2018 - March 2019)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Employer | Bay | Employer | Bay | Employer | Mid-Peninsula |
| Google Inc. | 53 | Sony Electronics  | 13 | Facebook | 23 |
| Apple Inc. | 33 | 2K Games | 11 | Google Inc. | 19 |
| Facebook | 27 | Cisco Systems  | 11 | Electronic Arts  | 17 |
| Cryptic Studios  | 21 | Ford Motor Company | 11 | Disney | 16 |
| Electronic Arts  | 20 | Mediazoo | 11 | Accenture | 15 |
| Disney | 18 | Big Fish Games, Inc | 10 | Zynga | 14 |
| Machine Zone | 18 | Machinezone | 10 | Sony Electronics  | 13 |
| Accenture | 17 | Pocket Gems | 10 | Activision | 12 |
| Activision | 15 | Bank of America | 9 | Specialtys Cafe Bakery | 11 |
| Capital Markets Placement | 15 | Dignity Health | 9 | Pocket Gems | 10 |
| Amazon | 14 | Fast Forward Accelerate Good | 9 | Fast Forward Accelerate Good | 9 |
| Specialtys Cafe Bakery | 14 | Gear | 9 | Gear | 9 |
| Walmart / Sam's | 14 | Lululemon | 9 | Bank of America | 8 |
| Zynga | 14 | Pro Pipe | 9 | Crystal Dynamics  | 8 |

*Source: Burning Glass*

# Educational Supply

There are 7 community colleges in the Bay Region issuing 81 awards on average annually (last 3 years) on TOP 0614.00 - Digital Media. There are two colleges in the Mid-Peninsula Sub-Region issuing 50 awards on average annually (last 3 years) on this TOP code.

**Table 7. Awards on TOP 0614.00 - Digital Media in the Bay Region**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| College | Sub-Region | Headcount | Associates | Certificates | Total |
| Berkeley City | East Bay | 317 |  |  |  |
| Cabrillo | Santa Cruz & Monterey | 405 | 7 | 9 | 16 |
| Chabot | East Bay | 153 |  |  |  |
| Diablo Valley | East Bay | 827 |  |  |  |
| Gavilan | Silicon Valley | 14 | 1 | 1 | 2 |
| Hartnell | Santa Cruz & Monterey | 172 |  |  |  |
| Las Positas | East Bay | n/a | 6 | 1 | 7 |
| San Francisco | Mid-Peninsula | 167 |  | 20 | 20 |
| San Jose City | Silicon Valley | 11 | 1 | 1 | 2 |
| San Mateo | Mid-Peninsula | 727 | 13 | 17 | 30 |
| Skyline | Mid-Peninsula | 72 |  |  |  |
| West Valley | Silicon Valley | 59 | 2 | 2 | 4 |
| **Total Bay Region** |  **2,924**  |  **30**  |  **51**  |  **81**  |
| **Total Mid-Peninsula Sub-Region** | **966** | **13** | **37** | **50** |

# *Source: IPEDS, Data Mart and Launchboard*

NOTE: Headcount of students who took one or more courses is for 2016-17. The annual average for awards is 2014-17 unless there are only awards in 2016-17. The annual average for other postsecondary is for 2013-16.

# Gap Analysis

Based on the data included in this report, there is a large labor market gap in the Bay region with 2,540 annual openings for the Digital Media occupational cluster and 81 annual (3-year average) awards for an annual undersupply of 2,459 students. In the Mid-Peninsula Sub-Region, there is also a gap with 1,055 annual openings and 50 annual (3-year average) awards for an annual undersupply of 1,005 students.

# Student Outcomes

**Table 8. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 0614.00 - Digital Media**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 2015-16 | Bay (All CTE Programs) | Canada College (All CTE Programs) | State (0614.00) | Bay (0614.00) | Mid-Peninsula (0614.00) | Canada College (0614.00) |
| % Employed Four Quarters After Exit | 74% | 66% | 59% | 59% | 57% | n/a |
| Median Quarterly Earnings Two Quarters After Exit | $10,550 | $9,520 | $5,036 | $6,920 | $8,013 | n/a |
| Median % Change in Earnings | 46% | 44% | 51% | 35% | 31% | n/a |
| % of Students Earning a Living Wage | 63% | 49% | 35% | 38% | 33% | n/a |

*Source: Launchboard Pipeline (version available on 4/9/19)*

# Skills and Education

**Table 9. Top Skills for Digital Media Occupations in Bay Region (April 2018 - March 2019)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Skill | Postings | Skill | Postings | Skill | Postings |
| Adobe Photoshop | 742 | Adobe Premiere | 235 | Software Development | 132 |
| Adobe Aftereffects | 408 | Videography | 217 | Customer Contact | 126 |
| Adobe Indesign | 333 | User Interface (UI) Design | 211 | Customer Service | 126 |
| Adobe Acrobat | 320 | Video Production | 203 | Quality Assurance and Control | 126 |
| Adobe Creative Suite | 314 | Maya | 196 | Final Cut Pro | 116 |
| Adobe Illustrator | 310 | Motion Graphics | 188 | Java | 111 |
| Animation | 308 | Social Media | 186 | 3D Modeling / Design | 110 |
| Video Editing | 302 | JavaScript | 184 | Music | 110 |
| Interaction Design | 282 | Product Management | 174 | SAP | 107 |
| UX Wireframes | 277 | Level design | 172 | Product Development | 105 |
| Prototyping | 271 | Scheduling | 172 | Product Design | 104 |
| Game Development | 265 | C++ | 150 | Information Architecture | 103 |
| Project Management | 257 | User Research | 150 | Software Engineering | 102 |
| Graphic Design | 255 | Budgeting | 145 | Human Computer Interaction | 101 |
| Visual Design | 243 | Process Design | 136 | Art Direction | 100 |

*Source: Burning Glass*

**Table 10. Education Requirements for Digital Media Occupations in Bay Region**

Note: 55% 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 | 72 (6%) |
| Associate Degree | 25 (2%) |
| Bachelor’s Degree or Higher | 1,145 (92%) |

*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

For more information, please contact:

* Doreen O’Donovan, Data Research Analyst, for Bay Area Community College Consortium (BACCC) and Centers of Excellence (CoE), doreen@baccc.net or (831) 479-6481
* John Carrese, Director, San Francisco Bay Center of Excellence for Labor Market Research, jcarrese@ccsf.edu or (415) 267-6544