

# Video Game Design Occupations

# Labor Market Information Report

# Ohlone College

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

**May 2021**

## Recommendation

Based on all available data, there appears to be an “undersupply” of Video Game Design workers compared to the demand for this cluster of occupations in the Bay region and in the East Bay sub-region (Alameda and Contra Costa counties). There is a projected annual gap of about 2,150 students in the Bay region and 385 students in the East Bay Sub-Region.

## Introduction

This report provides student outcomes data on employment and earnings for TOP 0614.20 - Electronic Game Design 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 Ohlone College and in the region.

This report profiles Video Game Design Occupations in the 12 county Bay region and in the East Bay sub-region for a proposed new program at Ohlone College.

* **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%
* **Special Effects Artists and Animators (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: 26%
* **Film and Video Editors (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: 24%

## Occupational Demand

**Table 1. Employment Outlook for Video Game Design Occupations in Bay Region**

| **Occupation** | **2019 Jobs** | **2024 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 | 11,306 | 13,134 | 1,828 | 16% | 6,400 | 1,280 | $ 29.03 | $ 45.02 |
| Special Effects Artists and Animators | 5,227 | 5,632 | 405 | 8% | 3,364 | 673 | $ 28.71 | $ 40.79 |
| Film and Video Editors | 1,645 | 1,789 | 144 | 9% | 1,000 | 200 | $ 22.51 | $ 31.32 |
| **Total** | **18,178** | **20,555** | **2,377** | **13%** | **10,764** | **2,153** | **$28.35** | **$42.56** |
| Source: EMSI 2020.4 |

**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 Video Game Design Occupations in East Bay Sub-region**

| **Occupation** | **2019 Jobs** | **2024 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 | 2,195 | 2,359 | 164 | 7% | 1,024 | 205 | $ 23.65 | $ 39.97 |
| Special Effects Artists and Animators | 1,102 | 1,121 | 19 | 2% | 627 | 125 | $ 24.65 | $ 37.06 |
| Film and Video Editors | 479 | 519 | 40 | 8% | 287 | 57 | $ 22.96 | $ 32.71 |
| **Total** | **3,776** | **3,999** | **223** | **6%** | **1,938** | **387** | **$23.85** | **$38.20** |
| Source: EMSI 2020.4 |

**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 (Apr 2020 - Mar 2021)**

| **Occupation** | **Bay Region** | **East Bay** |
| --- | --- | --- |
| Computer Occupations, All Other | 1,377 | 130 |
| Video Game Designers | 919 | 110 |
| Multimedia Artists and Animators | 549 | 83 |
| Film and Video Editors | 127 | 14 |
| Source: Burning Glass |

**Table 4a. Top Job Titles for Video Game Design Occupations for latest 12 months (Apr 2020 - Mar 2021) Bay Region**

| **Title** | **Bay** | **Title** | **Bay** |
| --- | --- | --- | --- |
| Senior Consultant | 114 | Sales Consultant, Technology | 17 |
| Interaction Designer | 56 | Professional Services Consultant | 16 |
| Video Editor | 42 | Senior Gameplay Engineer | 14 |
| Game Designer | 32 | Vfx Artist | 13 |
| Technical Marketing Engineer | 31 | Senior Consultant 5G | 13 |
| Motion Graphic Designer | 21 | D Artist And Modeler | 13 |
| Environment Artist | 21 | Senior Environment Artist | 12 |
| Senior Interaction Designer | 20 | Interactive Designer | 12 |
| Animator | 18 | Content Creator | 12 |
| Source: Burning Glass |

**Table 4b. Top Job Titles for Video Game Design Occupations for latest 12 months (Apr 2020 - Mar 2021) East Bay Sub-Region**

| **Title** | **East Bay** | **Title** | **East Bay** |
| --- | --- | --- | --- |
| Senior Consultant | 23 | Senior 3D Designer Museum Exhibition Designer | 4 |
| Master Interaction Designer | 9 | Game Designer | 4 |
| Content Creator | 6 | Video Editor Motion Graphic | 3 |
| Animator | 6 | Technical Sourcer, Specialized Technology | 3 |
| Senior Consultant 5G | 5 | Storyboard Artist Contract | 3 |
| Lead Vfx Artist | 5 | Senior Game Engineer | 3 |
| Business Systems Consultant | 5 | Senior Consultant Pega Robotics | 3 |
| Vfx Artist | 4 | Sap Success Factors | 3 |
|  |  | Mro Coordinator | 3 |
| Source: Burning Glass |

## Industry Concentration

**Table 5. Industries hiring Video Game Design Workers in Bay Region**

| **Industry – 6 Digit NAICS (No. American Industry Classification) Codes** | **Jobs in Industry (2019)** | **Jobs in Industry (2024)** | **% Change (2019-24)** | **% Occupation Group in Industry (2019)** |
| --- | --- | --- | --- | --- |
| Software Publishers | 2,567 | 3,515 | 37% | 16% |
| Internet Publishing and Broadcasting and Web Search Portals | 3,035 | 3,401 | 12% | 16% |
| Custom Computer Programming Services | 2,546 | 2,831 | 11% | 14% |
| Computer Systems Design Services | 1,423 | 1,502 | 6% | 8% |
| Motion Picture and Video Production | 1,394 | 1,303 | -7% | 7% |
| Data Processing, Hosting, and Related Services | 492 | 648 | 32% | 3% |
| Other Computer Related Services | 394 | 438 | 11% | 2% |
| Independent Artists, Writers, and Performers | 297 | 298 | 0% | 2% |
| Corporate, Subsidiary, and Regional Managing Offices | 279 | 254 | -9% | 1% |
| Graphic Design Services | 251 | 222 | -11% | 1% |
| Source: EMSI 2020.4 |

**Table 6. Top Employers Posting Video Game Design Occupations in Bay Region and East Bay Sub-Region (Apr 2020 - Mar 2021)**

| **Employer** | **Bay** | **Employer** | **East Bay** |
| --- | --- | --- | --- |
| Deloitte | 234 | Kaiser Permanente | 12 |
| Microsoft Corporation | 66 | Virtusa Corporation | 11 |
| Activision | 64 | Striking Distance Studios | 11 |
| IBM | 50 | Wells Fargo | 9 |
| Facebook | 45 | U.S. Bancorp | 8 |
| Cisco Systems Incorporated | 43 | Pubg San Ramon | 8 |
| Wells Fargo | 41 | Pubg | 8 |
| Palo Alto Networks | 37 | Mak Technologies | 7 |
| Accenture | 32 | Blue Cross Blue Shield of California | 7 |
| Ernst & Young | 28 | Infosys | 6 |
| Source: Burning Glass |

## Educational Supply

There are two (2) community colleges in the Bay Region issuing 3 awards on average annually (last 3 years ending 2018-19) on TOP 0614.20 - Electronic Game Design. In the East Bay Sub-Region, there is one (1) community college that issued 2 awards on average annually (last 3 years) on this TOP code.

**Table 7. Community College Awards on TOP 0614.20 - Electronic Game Design in Bay Region**

| **College** | **Subregion** | **Associate** | **Certificate Low** | **Total** |
| --- | --- | --- | --- | --- |
| Diablo Valley | East Bay | 2 | 0 | 2 |
| Santa Rosa | North Bay | 1 | 0 | 1 |
| **Total** |  | **3** | **0** | **3** |
| 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 2,153 annual openings for the Video Game Design occupational cluster and 3 annual (3-year average) awards for an annual undersupply of 2,150 students. In the East Bay Sub-Region, there is also a gap with 387 annual openings and 2 annual (3-year average) awards for an annual undersupply of 385 students.

## Student Outcomes

**Table 8. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 0614.20 - Electronic Game Design**

| **Metric Outcomes** | **Bay****All CTE Program** | **Ohlone****All CTE Program** | **State 0614.20** | **Bay 0614.20** | **East Bay 0614.20** | **Ohlone College 0614.20** |
| --- | --- | --- | --- | --- | --- | --- |
| Students with a Job Closely Related to Their Field of Study | 75% | 72% | 43% | N/A | N/A | N/A |
| Median Annual Earnings for SWP Exiting Students | $44,575 | $88,529 | $19,578 | N/A | N/A | N/A |
| Median Change in Earnings for SWP Exiting Students | 31% | 18% | 47% | N/A | N/A | N/A |
| Exiting Students Who Attained the Living Wage | 52% | 73% | 30% | N/A | N/A | N/A |
| Source: Launchboard Strong Workforce Program from version 2017-18. |

## Skills, Certifications and Education

**Table 9. Top Skills for Video Game Design Occupations in Bay Region (Apr 2020 - Mar 2021)**

| **Skill** | **Posting** | **Skill** | **Posting** |
| --- | --- | --- | --- |
| Project Management | 479 | Game Development | 186 |
| SAP | 407 | Marketing | 186 |
| Adobe Photoshop | 302 | Prototyping | 171 |
| Python | 289 | DevOps | 160 |
| Business Development | 288 | Scheduling | 159 |
| Business Process | 278 | Information Systems | 158 |
| Maya | 237 | Java | 154 |
| Product Management | 227 | Interaction Design | 152 |
| Customer Contact | 221 | Video Editing | 148 |
| Budgeting | 220 | Adobe Illustrator | 147 |
| Customer Service | 214 | Thought Leadership | 146 |
| Animation | 207 | C++ | 145 |
| Software Development | 206 | Enterprise Resource Planning (ERP) | 145 |
| SQL | 191 | Level design | 141 |
| Source: Burning Glass |

**Table 10. Certifications for Video Game Design Occupations in Bay Region (Apr 2020 - Mar 2021)**

| **Certification** | **Posting** | **Certification** | **Posting** |
| --- | --- | --- | --- |
| Certified Information Systems Security Professional (CISSP) | 91 | Certified Information Security Manager (CISM) | 23 |
| Project Management Certification | 59 | SAP Certification | 22 |
| Certified Information Systems Auditor (CISA) | 52 | SANS/GIAC Certification | 17 |
| Cisco Certified Internetwork Expert (CCIE) | 49 | Cisco Certified Network Professional (CCNP) | 13 |
| Project Management Professional (PMP) | 44 | Licensed Attorney | 12 |
| Driver's License | 42 | CompTIA Security+ | 10 |
| Security Clearance | 38 | Certified Public Accountant (CPA) | 9 |
| Cisco Certified Network Associate (CCNA) | 38 | GIAC Security Essentials Certification | 8 |
| Check Point Certified Security Administrator | 28 | Juniper Networks Certified Internet Expert | 7 |
| IT Infrastructure Library (ITIL) Certification | 27 | First Aid Cpr Aed | 7 |
| Source: Burning Glass |

*Note: 88% of records have been excluded because they do not include a certification. As a result, the chart below may not be representative of the full sample.*

**Table 11. Education Requirements for Video Game Design Occupations in Bay Region**

| **Education (minimum advertised)** | **Latest 12 Mos. Postings** | **Percent 12 Mos. Postings** |
| --- | --- | --- |
| High school or vocational training | 83 | 5% |
| Associate's degree | 12 | 1% |
| Bachelor's degree and higher | 1,580 | 94% |
| Source: Burning Glass |

*Note: 44% 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.*

## 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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