** Graphic Design Occupations**

**Labor Market Information Report**

**Chabot College**

Prepared by the San Francisco Bay Center of Excellence

for Labor Market Research

March 2019

# Recommendation

Based on all available data, there appears to be a significant undersupply of Graphic 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 2,824 students in the Bay region and 587 students in the East Bay 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 Chabot College and in the region.

# Introduction

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

|  |
| --- |
| * **Graphic Designers (SOC 27-1024):** Design or create graphics to meet specific commercial or promotional needs, such as packaging, displays, or logos. May use a variety of mediums to achieve artistic or decorative effects.
 |
| Entry-Level Educational Requirement: Bachelor's degree |
| Training Requirement: None |
| Percentage of Community College Award Holders or Some Postsecondary Coursework: 29% |
|  |
| * **Web Developers (SOC 15-1134)**: 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: 25*%* |
|  |
| * **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*%* |

# Occupational Demand

**Table 1. Employment Outlook for Graphic Design 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 |
| Graphic Designers | 12,797 | 13,191 | 393  | 3% | 6,476 | 1,295 | $16.35  | $23.65  |
| Web Developers | 10,306 | 12,242 | 1,937  | 19% | 5,802 | 1,160 | $20.83  | $38.90  |
| Multimedia Artists and Animators | 4,730 | 5,028 | 298  | 6% | 2,247 | 449 | $13.65  | $38.08  |
| **Total** | **27,833** | **30,461** | **2,628**  | **9%** | **14,526** | **2,905** | **$17.55**  | **$31.75**  |

*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 Graphic Design Occupations in East Bay 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 |
| Graphic Designers | 3,342 | 3,393 | 51  | 2% | 1,614 | 323 | $15.79  | $21.74  |
| Web Developers | 2,177 | 2,327 | 150  | 7% | 951 | 190 | $19.56  | $28.48  |
| Multimedia Artists and Animators | 907 | 946 | 39  | 4% | 404 | 81 | $12.21  | $31.02  |
| **TOTAL** | **6,426** | **6,666** | **241**  | **4%** | **2,969** | **594** | **$16.56**  | **$25.33**  |

*Source: EMSI 2019.1*

**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 (March 2018 - Feb 2019)**

| Occupation | Bay Region | East Bay |
| --- | --- | --- |
|  Web Developers | 25,242 | 3,029 |
|  Graphic Designers | 4,022 | 588 |
|  Multimedia Artists and Animators | 949 | 117 |
| **Total** |  **30,213**  |  **3,734**  |

*Source: Burning Glass*

**Table 4. Top Job Titles for Graphic Design Occupations for latest 12 months (March 2018 - Feb 2019)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Common Title | Bay | East Bay | Common Title | Bay | East Bay |
| User Experience (UX) Designer | 2,761 | 228 | Engineer | 390 | 10 |
| Front End Developer | 1,778 | 208 | Ruby on Rails Developer | 389 | 55 |
| Graphic Designer | 1,755 | 300 | Senior Engineer | 346 | 14 |
| Web Developer | 1,588 | 313 | Web Engineer | 339 | 30 |
| User Interface (UI) Developer | 1,480 | 202 | Backend Engineer | 316 | 16 |
| Software Development Engineer | 1,242 | 85 | Senior Backend Engineer | 316 | 7 |
| User Interface (UX)/User Experience (UX) Designer | 1,219 | 224 | Java Developer | 307 | 30 |
| Visual Designer | 1,060 | 83 | Web Designer | 283 | 66 |
| PHP Developer | 1,017 | 364 | Front End Web Developer | 262 | 37 |
| Front End Engineer | 615 | 35 | Production Artist | 237 | 44 |
| Interaction Designer | 517 | 57 | Developer | 203 | 34 |
| UX Researcher | 467 | 23 | Web Applications Developer | 200 | 44 |
| User Interface (UI) Designer | 454 | 29 | Senior UI Engineer | 184 | 17 |
| Senior Front End Engineer | 449 | 20 | Back End Engineer | 182 | 14 |

*Source: Burning Glass*

# Industry Concentration

**Table 5. Industries hiring Graphic Design 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) |
| Internet Publishing and Broadcasting and Web Search Portals (519130) | 3,713 | 3,914 | 39% | 13.9% |
| Custom Computer Programming Services (541511) | 3,088 | 3,156 | 13% | 11.2% |
| Graphic Design Services (541430) | 2,550 | 2,445 |  (12%) | 8.7% |
| Interior Design Services (541410) | 2,004 | 2,027 | 7% | 7.2% |
| Computer Systems Design Services (541512) | 1,826 | 1,808 | 7% | 6.4% |
| Software Publishers (511210) | 1,267 | 1,318 | 21% | 4.7% |
| Advertising Agencies (541810) | 585 | 581 |  (2%) | 2.1% |
| Data Processing, Hosting, and Related Services (518210) | 499 | 542 | 39% | 1.9% |
| Corporate, Subsidiary, and Regional Managing Offices (551114) | 502 | 528 | 10% | 1.9% |
| Motion Picture and Video Production (512110) | 529 | 520 |  (3%) | 1.8% |
| Other Computer Related Services (541519) | 483 | 489 | 14% | 1.7% |
| Electronic Shopping and Mail-Order Houses (454110) | 460 | 475 | 24% | 1.7% |
| Other Specialized Design Services (541490) | 440 | 449 | 11% | 1.6% |
| Industrial Design Services (541420) | 421 | 422 | 6% | 1.5% |
| Commercial Printing (except Screen and Books) (323111) | 375 | 365 |  (19%) | 1.3% |
| Administrative Management and General Management Consulting Services (541611) | 320 | 335 | 23% | 1.2% |
| Independent Artists, Writers, and Performers (711510) | 345 | 332 |  (10%) | 1.2% |
| Public Relations Agencies (541820) | 284 | 281 | 1% | 1.0% |

*Source: EMSI 2019.1*

**Table 6. Top Employers Posting Graphic Design Occupations in Bay Region and East Bay Sub-Region (March 2018 - Feb 2019)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Employer | Bay | Employer | Bay | Employer | East Bay |
| Capital Markets Placement | 659 | Servicenow | 56 | Capital Markets Placement | 283 |
| Apple Inc. | 300 | Tranzeal, Inc | 56 | Microsoft Corporation | 41 |
| Google Inc. | 243 | Bayone Solutions | 55 | Scoop Technologies | 41 |
| Amazon | 153 | Gap Inc. | 55 | Workday, Inc | 35 |
| Facebook | 152 | Fast Forward Accelerate Good | 54 | Ellie Mae | 26 |
| Cisco Systems Incorporated | 145 | Workday, Inc | 54 | Tesla Motors | 25 |
| Scoop Technologies | 128 | Osi Engineering, Inc | 52 | Bio-Rad Laboratories | 23 |
| Microsoft Corporation | 117 | Infoobjects Inc | 49 | Ideahelix | 20 |
| Paypal | 105 | Revature | 48 | General Electric Company | 14 |
| Redolent, Inc | 101 | Stanford University | 45 | Revature | 14 |
| Walmart / Sam's | 89 | United States Technical Solutions | 45 | Kaiser Permanente | 13 |
| Sony Electronics Incorporated | 83 | Splunk | 43 | Logitech | 13 |
| IBM | 79 | Avesta Computer Services | 42 | Scrumlink, Inc | 13 |
| Williams-Sonoma | 79 | Intelliswift Software | 42 | VF Corporation | 13 |
| Adobe Systems | 77 | Sapvix | 42 | Veeva Systems | 12 |
| SAP | 71 | Splunk, Inc | 42 | Logic Soft Incorporated | 11 |
| eBay | 68 | Xoriant Incorporated | 41 | Tesla | 11 |
| JP Morgan Chase Company | 63 | Sis Systems Integration Solutions, Inc | 40 | Albertsons | 10 |
| Salesforce | 63 | Accenture | 39 | Dpp Tech, Inc | 10 |
| Vmware Incorporated | 62 | Alpha Net Consulting Llc | 39 | Matchpoint Solutions Incorporated | 10 |
| Coinbase | 61 | Gorilla Logic | 38 | Osisoft Incorporated | 10 |
| Oracle | 61 | Safeguard Scientifics Incorporated | 38 | Tailored Brands, Llc | 10 |

*Source: Burning Glass*

# Educational Supply

There are seven colleges in the Bay Region issuing 81 awards on average annually (last 3 years) on TOP 0614.00 - Digital Media. Las Positas College is the only college in the East Bay Sub-Region issuing awards on this TOP code, issuing 7 awards on average annually (last 3 years).

**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 East Bay Sub-Region** |  **1,297**  |  **6**  |  **1**  |  **7**  |

# *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 2,905 annual openings for the Graphic Design occupational cluster and 81 annual (3-year average) awards for an annual undersupply of 2,824 students. In the East Bay Sub-Region, there is also a gap with 594 annual openings and 7 annual (3-year average) awards for an annual undersupply of 587 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) | Chabot College (All CTE Programs) | State (0614.00) | Bay (0614.00) | East Bay (0614.00) | Chabot College (0614.00) |
| % Employed Four Quarters After Exit | 74% | 74% | 59% | 59% | 61% | n/a |
| Median Quarterly Earnings Two Quarters After Exit | $10,550 | $9,425 | $5,036 | $6,920 | $6,097 | $5,928 |
| Median % Change in Earnings | 46% | 71% | 51% | 35% | 51% | n/a |
| % of Students Earning a Living Wage | 63% | 60% | 35% | 38% | 35% | n/a |

*Source: Launchboard Pipeline (version available on 3/8/19)*

# Skills and Education

**Table 9. Top Skills for Graphic Design Occupations in Bay Region (March 2018 - Feb 2019)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Skill | Postings | Skill | Postings | Skill | Postings |
| JavaScript | 12,012 | UX Wireframes | 3,408 | Product Management | 2,405 |
| Adobe Photoshop | 5,926 | CSS | 3,304 | Unit Testing | 2,186 |
| Java | 5,201 | Python | 3,111 | E-Commerce | 2,156 |
| Web Application Development | 5,175 | Prototyping | 3,094 | Typesetting | 2,098 |
| HTML5 | 4,860 | jQuery | 3,087 | MySQL | 2,078 |
| Web Development | 4,424 | Adobe Illustrator | 3,054 | Object-Oriented Analysis and Design (OOAD) | 1,919 |
| Graphic Design | 4,160 | Adobe Acrobat | 2,925 | Syntactically Awesome Style Sheets (SASS) | 1,890 |
| React Javascript | 4,097 | Interaction Design | 2,902 | AJAX | 1,785 |
| Software Engineering | 4,092 | Web Site Design | 2,901 | Project Management | 1,696 |
| Visual Design | 3,925 | Adobe Creative Suite | 2,862 | JavaScript Object Notation (JSON) | 1,693 |
| AngularJS | 3,880 | Git | 2,740 | Ruby on Rails | 1,671 |
| Adobe Indesign | 3,676 | SQL | 2,552 | Bootstrapping | 1,662 |
| User Interface (UI) Design | 3,624 | Node.js | 2,541 | Scrum | 1,580 |
| Software Development | 3,560 | Hypertext Preprocessor (PHP) | 2,493 | Product Design | 1,577 |
| Front-end Development | 3,430 | User Research | 2,436 | Product Development | 1,573 |

*Source: Burning Glass*

**Table 10. Education Requirements for Graphic Design Occupations in Bay Region**

Note: 54% 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 | 228 (2%) |
| Associate Degree | 142 (1%) |
| Bachelor’s Degree or Higher | 13,520 (97%) |

*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

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