**UX Design Occupations**

**Labor Market Information Report**

**Skyline College**

Prepared by the San Francisco Bay Center of Excellence

for Labor Market Research

August 2020

# Recommendation

Based on all available data, there appears to be a significant undersupply of UX Design 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 4,554 students in the Bay region and 1,787 students in the Mid-Peninsula Sub-Region.

This report also provides student outcomes data on employment and earnings for TOP 0614.30-Website Design and Development 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 Skyline College and in the region.

# Introduction

This report profiles UX Design Occupations in the 12 county Bay region and in the Mid-Peninsula sub-region for a proposed new program at Skyline College. Labor market information (LMI) is not available at the eight-digit SOC Code level for Software Quality Assurance Engineers and Testers (15-1199.01), 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 Software Quality Assurance Engineers and Testers. Tables 3, 4, 6, 9, and 10 use job postings data from Burning Glass at the eight-digit SOC Code level for Software Quality Assurance Engineers and Testers (15-1199.01).

|  |
| --- |
| * **Computer Occupations, All Other (15-1199 /15-1299):** All computer occupations not 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% |
| * **Web Developers / Web Developers and Digital Interface Designers (15-1134 / 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: 25*%* |

**Occupational Demand**

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Occupation  | 2019 Jobs | 2024 Jobs | 5-Yr Change | 5-Yr % Change | 5-Yr Open-ings | Average Annual Open-ings | 25% Hourly Wage | Median Hourly Wage |
| Computer Occupations, All Other |  38,974  |  42,324  | 3,350 | 9% |  19,456  |  3,891  | $41.02 | $56.51 |
| Web Developers / Web Developers and Digital Interface Designers |  11,305  |  13,309  | 2,004 | 18% |  6,679  |  1,336  | $29.02 | $45.01 |
| **TOTAL** |  **50,279**  |  **55,633**  | **5,354** | **11%** |  **26,136**  |  **5,227**  | **$38.32** | **$53.92** |

*Source: EMSI 2020.3*

**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 UX Design Occupations in Mid-Peninsula Sub-Region**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Occupation  | 2019 Jobs | 2024 Jobs | 5-Yr Change | 5-Yr % Change | 5-Yr Open-ings | Average Annual Open-ings | 25% Hourly Wage | Median Hourly Wage |
| Computer Occupations, All Other |  14,636  |  16,648  | 2,012 | 14% |  8,174  |  1,635  | $42.37 | $56.67 |
| Web Developers / Web Developers and Digital Interface Designers |  4,980  |  6,052  | 1,073 | 22% |  3,167  |  633  | $33.76 | $52.38 |
| **TOTAL** |  **19,615**  |  **22,700**  | **3,085** | **16%** |  **11,342**  |  **2,268**  | **$40.18** | **$55.58** |

*Source: EMSI 2020.3*

**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 (July 2019 - June 2020)**

| Occupation | Bay Region | **Mid-Peninsula** Sub-Region |
| --- | --- | --- |
|  Web Developers | 26,431 | 10,557 |
|  Software Quality Assurance Engineers and Testers | 12,711 | 4,082 |
|  **TOTAL** | **34,930** | **14,639** |

*Source: Burning Glass*

**Table 4a. Top Job Titles for UX Design Occupations for latest 12 months (July 2019 - June 2020) Bay Region**

|  |  |  |  |
| --- | --- | --- | --- |
| Common Title | Bay | Common Title | Bay |
| Quality Assurance Engineer | 2,770 | Software Quality Assurance Engineer | 585 |
| User Experience (UX) Designer | 2,206 | Front End Engineer, Information And Technology Industry | 524 |
| User Interface (UI) Developer | 2,102 | User Interface (UI) Designer | 506 |
| Front End Developer | 1,814 | Senior Front End Engineer, Information And Technology Industry | 487 |
| Web Developer | 1,566 | Ux Researcher | 471 |
| Software Development Engineer | 1,404 | Software Test Engineer | 468 |
| User Interface (UX)/User Experience (UX) Designer | 992 | Senior Engineer, Information And Technology Industry | 434 |
| Senior Front End Engineer | 764 | Java Developer | 404 |
| Front End Engineer | 741 | Engineer, Information And Technology Industry | 384 |
| Quality Assurance Tester | 715 | Engineer | 376 |
| Quality Assurance Analyst | 658 | PHP Developer | 319 |
| Backend Engineer | 650 | Quality Engineer | 283 |
| Senior Engineer | 645 | Web Engineer | 282 |
| Senior Backend Engineer | 633 | Ruby on Rails Developer | 282 |

**Table 4b. Top Job Titles for UX Design Occupations for latest 12 months (July 2019 - June 2020) Mid-Peninsula Sub-Region**

|  |  |  |  |
| --- | --- | --- | --- |
| Common Title | **Mid-Peninsula** | Common Title | **Mid-Peninsula** |
| User Experience (UX) Designer | 1,079 | Quality Assurance Tester | 243 |
| Quality Assurance Engineer | 808 | Software Test Engineer | 148 |
| Software Development Engineer | 682 | Quality Assurance Lead | 136 |
| Front End Developer | 595 | Software Quality Assurance Engineer | 134 |
| User Interface (UI) Developer | 555 | User Interface (UI) Designer | 133 |
| Web Developer | 529 | PHP Developer | 130 |
| User Interface (UX)/User Experience (UX) Designer | 406 | Engineer | 130 |
| Senior Engineer | 368 | Web Engineer | 129 |
| Senior Front End Engineer | 334 | Frontend Engineer | 122 |
| Quality Assurance Analyst | 302 | Developer | 102 |
| Senior Backend Engineer | 295 | Web Designer | 96 |
| Front End Engineer | 278 | Senior Ux Researcher | 96 |
| Ux Researcher | 269 | Quality Engineer | 95 |
| Backend Engineer | 249 | Ruby on Rails Developer | 83 |

*Source: Burning Glass*

# Industry Concentration

**Table 5. Industries hiring UX 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) |
| Custom Computer Programming Services (541511) | 10,370 | 10,823 | 4% | 21% |
| Computer Systems Design Services (541512) | 5,878 | 6,047 | 3% | 12% |
| Internet Publishing and Broadcasting and Web Search Portals (519130) | 4,636 | 4,993 | 8% | 9% |
| Software Publishers (511210) | 3,910 | 4,181 | 7% | 8% |
| Federal Government, Civilian, Excluding Postal Service (901199) | 2,449 | 2,428 | -1% | 5% |
| Data Processing, Hosting, and Related Services (518210) | 2,282 | 2,461 | 8% | 5% |
| Corporate, Subsidiary, and Regional Managing Offices (551114) | 1,624 | 1,637 | 1% | 3% |
| Other Computer Related Services (541519) | 1,527 | 1,611 | 6% | 3% |
| Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology) (541715) | 702 | 710 | 1% | 1% |
| Administrative Management and General Management Consulting Services (541611) | 648 | 685 | 6% | 1% |
| Colleges, Universities, and Professional Schools (State Government) (902612) | 564 | 567 | 1% | 1% |
| Electronic Computer Manufacturing (334111) | 548 | 563 | 3% | 1% |
| Local Government, Excluding Education and Hospitals (903999) | 528 | 531 | 1% | 1% |
| Colleges, Universities, and Professional Schools (611310) | 526 | 538 | 2% | 1% |
| Temporary Help Services (561320) | 493 | 494 | 0% | 1% |

*Source: EMSI 2020.3*

**Table 6. Top Employers Posting UX Design Occupations in Bay Region and Mid-Peninsula Sub-Region (July 2019 - June 2020)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Employer** | **Bay** | **Employer** | **Bay** | **Employer** | **Mid-Peninsula** |
| Apple Inc. | 499 | Intelliswift Software | 76 | Amazon | 172 |
| Amazon | 407 | Infoobjects Inc | 70 | Facebook | 141 |
| Cisco Systems Incorporated | 194 | Tesla | 67 | Wells Fargo | 102 |
| Wells Fargo | 190 | Ascent Technology Services | 67 | Infobahn Softworld Incorporated | 59 |
| Facebook | 147 | Walmart / Sam's | 62 | Salesforce | 57 |
| Infobahn Softworld Incorporated | 141 | Tranzeal, Inc | 61 | Oracle | 46 |
| Xoriant Incorporated | 121 | Splunk | 61 | Autodesk Incorporated | 42 |
| Wipro | 100 | Salesforce | 60 | Visa | 39 |
| Osi Engineering | 100 | Mumba Technologies | 59 | Bayone Solutions | 39 |
| NTT Data | 100 | Accenture | 59 | The Mom Project | 36 |
| McDonald's | 94 | Oracle | 58 | Jefferson Frank | 36 |
| Infosys | 94 | Osi Engineering, Inc | 57 | JP Morgan Chase Company | 36 |
| Google Inc. | 94 | Idc Technologies | 56 | Coinbase | 36 |
| Paypal | 90 | JP Morgan Chase Company | 55 | NTT Data | 33 |
| Bayone Solutions | 87 | It Scient | 55 | Sony Electronics Incorporated | 32 |
| Vmware Incorporated | 85 | Intellipro Incorporated | 55 | Adobe Systems | 32 |
| IBM | 78 | Virtusa | 54 | Infosys | 31 |

*Source: Burning Glass*

# Educational Supply

There are seven (7) community colleges in the Bay Region issuing 37 awards on average annually (last 3 years ending 2018-19) on TOP 0614.30-Website Design and Development. There are two (2) colleges in the Mid-Peninsula Sub-Region issuing five (5) awards on average annually (last 3 years) on this TOP code.

There are three (3) Other Educational Institutions in the Bay Region issuing 51 awards on average annually (last 3 years ending 2016-17) on TOP 0614.00 – Digital Media. There are two (2) Other Educational Institutions in the Mid-Peninsula Sub-Region issuing 49 awards on average annually (last 3 years) on this TOP code.

There are 10 Other Educational Institutions in the Bay Region issuing 585 Bachelor’s Degrees on average annually (last 3 years ending 2016-17) on TOP 0614.00 – Digital Media. There are four (4) Other Educational Institutions in the Mid-Peninsula Sub-Region issuing 427 Bachelor’s Degrees on average annually (last 3 years ending 2016-17) on this TOP code.

**Table 7a. Community College Awards on TOP 0614.30-Website Design and Development in Bay Region**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **College** | **Sub-Region** | **Associates** | **Certificate Low Unit** | **Total** |
| Berkeley City | East Bay | 2 | 3 | 5 |
| Cabrillo | SC - Monterey | 6 | 14 | 20 |
| Canada | Mid-Peninsula |  | 4 | 4 |
| Mission | Silicon Valley |  | 5 | 5 |
| Ohlone | East Bay |  | 1 | 1 |
| San Francisco | Mid-Peninsula |  | 1 | 1 |
| San Jose City | Silicon Valley | 1 |  | 1 |
| **Total Bay Region** | **9** |  **28** | **37** |
| **Total Mid-Peninsula Sub-Region** | **0** |  **5**  | **5** |

# Source: Data Mart

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

**Table 7b. Other Educational Institutions Awards on TOP 0614.00 - Digital Media in Bay Region**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **College** | **Sub-Region** | **Associate Degree** |  **1 < 2 academic yrs** | **Total** |
| Academy of Art University | Mid-Peninsula |  44  |  0  | 44 |
| Argosy University-The Art Institute of California-San Francisco | Mid-Peninsula |  3  | 2 |  5 |
| Argosy University-The Art Institute of California-Silicon Valley | Silicon Valley |  1  | 1 |  2  |
| **Total Bay Region** | **48** | **3** | **51** |
| **Total Mid-Peninsula Sub-Region** | **47** | **2** | **49** |

# Source: Data Mart

Note: The annual average for awards is 2014-15 to 2016-17.

**Table 7c. Bachelor’s Degree Awards on TOP 0614.00 - Digital Media in Bay Region**

|  |  |  |
| --- | --- | --- |
| **College** | **Sub-Region** | **Bachelor’s Degree** |
| Academy of Art University | Mid-Peninsula | 312 |
| Argosy University-The Art Institute of California-San Francisco | Mid-Peninsula | 65 |
| Argosy University-The Art Institute of California-Silicon Valley | Silicon Valley | 34 |
| California College of the Arts | Mid-Peninsula | 49 |
| Cogswell College | Silicon Valley | 43 |
| Holy Names University | East Bay | 4 |
| Mills College | East Bay | 3 |
| SAE Expression College | East Bay | 62 |
| San Francisco Art Institute | Mid-Peninsula | 1 |
| Santa Clara University | Silicon Valley | 10 |
| University of California-Santa Cruz | Santa Cruz -Monterey | 2 |
| **Total Bay Region** | **585** |
| **Total Mid-Peninsula Sub-Region** | **427** |

# Source: Data Mart

Note: The annual average for awards is 2014-15 to 2016-17.

# Gap Analysis

Based on the data included in this report, there is a large labor market gap in the Bay region with 5,227 annual openings for the UX Design occupational cluster and 673 annual (3-year average) awards from community colleges and Other Educational Institutions for an annual undersupply of 4,554 students. In the Mid-Peninsula Sub-Region, there is also a gap with 2,268 annual openings and 481 annual (3-year average) awards from community colleges and Other Educational Institutions for an annual undersupply of 1,787 students.

# Student Outcomes

**Table 8. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 0614.30 - Website Design and Development**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **2015-16** | **Bay All CTE Programs** | **Skyline College All CTE Programs** | **State (**0614.30) | **Bay (**0614.30) | **Mid-Peninsula (**0614.30) | **Skyline College (**0614.30) |
| % Employed Four Quarters After Exit | 74% | 74% | 60% | 62% | n/a | n/a |
| Median Quarterly Earnings Two Quarters After Exit | $10,550 | $9,860 | $8,598 | $9,329 | n/a | n/a |
| Median % Change in Earnings | 46% | 37% | 53% | 72% | n/a | n/a |
| % of Students Earning a Living Wage | 63% | 56% | 56% | 58% | n/a | n/a |

*Source: Launchboard Pipeline (version available on (8/6/20)*

# Skills, Certifications and Education

**Table 9. Top Skills for UX Design Occupations in Bay Region (July 2019 - June 2020)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Skill** | **Postings** | **Skill** | **Postings** | **Skill** | **Postings** |
| JavaScript | 13,984 | Unit Testing | 3,875 | User Interface (UI) Design | 2,677 |
| Java | 10,195 | Adobe Photoshop | 3,779 | PostgreSQL | 2,659 |
| Quality Assurance and Control | 8,875 | Ruby on Rails | 3,664 | Adobe Acrobat | 2,620 |
| Python | 8,143 | Selenium | 3,551 | Adobe Creative Suite | 2,608 |
| Software Engineering | 7,353 | MySQL | 3,339 | Product Management | 2,533 |
| SQL | 6,482 | Scalability Design | 3,140 | UX Wireframes | 2,470 |
| React Javascript | 6,419 | Cross-browser | 3,053 | Microsoft C# | 2,460 |
| Software Development | 5,876 | Linux | 3,006 | ECMAScript 2015 (ES2015 / ES6) | 2,434 |
| Front-end Development | 5,741 | Scrum | 2,977 | Node.js | 2,426 |
| Web Development | 5,372 | CSS | 2,916 | Version Control | 2,385 |
| Git | 5,214 | Hypertext Preprocessor (PHP) | 2,837 | Agile Development | 2,378 |
| Web Application Development | 4,772 | Debugging | 2,824 | jQuery | 2,362 |
| AngularJS | 4,306 | Atlassian JIRA | 2,785 | Object-Oriented Analysis and Design (OOAD) | 2,355 |

*Source: Burning Glass*

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

Note: 48% 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** | **Percent 12 Mos. Postings** |
| High school or vocational training | 485 | 2% |
| Associate Degree | 181 | 1% |
| Bachelor’s Degree or Higher | 18,594 | 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

For more information, please contact:

* Doreen O’Donovan, 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