**Project Management Occupations**

**Labor Market Information Report**

**Mission College**

Prepared by the San Francisco Bay Center of Excellence

for Labor Market Research

September 2020

# Recommendation

Based on all available data, there appears to be an undersupply of Project Management workers compared to the demand for this cluster of occupations in the Bay region and in the Silicon Valley sub-region (Santa Clara County). There is a projected annual gap of about 7,289 students in the Bay region and 2,915 students in the Silicon Valley Sub-Region.

This report also provides student outcomes data on employment and earnings for TOP 0506.00-Business Management 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 Mission College and in the region.

# Introduction

This report profiles Project Management Occupations in the 12 county Bay region and in the Silicon Valley sub-region for a proposed new program at Mission College. Labor market information (LMI) is not available at the eight-digit SOC Code level for Information Technology Project Managers (15-1199.09), 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 Information Technology Project Managers. Tables 3, 4, 6, 9, 10 and 11 use job postings data from Burning Glass at the eight-digit SOC Code level for Information Technology Project Managers (15-1199.09).

|  |
| --- |
| * **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% |
|  |
| * **Computer and Information Systems Managers (11-3021):** Plan, direct, or coordinate activities in such fields as electronic data processing, information systems, systems analysis, and computer programming. Excludes “Computer Occupations" (15-1111 through 15-1199).
 |
| Entry-Level Educational Requirement: Bachelor's *degree* |
| Training Requirement: None |
| Percentage of Community College Award Holders or Some Postsecondary Coursework: 21*%* |
|  |

**Occupational Demand**

**Table 1. Employment Outlook for Project Management 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 |
| Computer and Information Systems Managers |  38,017  |  42,345  | 4,328 | 11% |  20,011  |  4,002  | $73.84 | $91.69 |
| **TOTAL** |  **76,990**  |  **84,669**  | **7,679** | **10%** |  **39,467**  |  **7,893**  | **$57.22** | **$73.88** |

*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 Project Management Occupations in Silicon Valley 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 |  14,080  |  15,400  | 1,320 | 9% |  7,129  |  1,426  | $47.30 | $64.70 |
| Computer and Information Systems Managers |  15,012  |  16,681  | 1,669 | 11% |  7,855  |  1,571  | $77.52 | $95.17 |
| **TOTAL** |  **29,092**  |  **32,081**  | **2,989** | **10%** |  **14,984**  |  **2,997**  | **$62.89** | **$80.42** |

*Source: EMSI 2020.3*

**Silicon Valley Sub-Region includes:** Santa Clara County

### Job Postings in Bay Region and Silicon Valley Sub-Region

**Table 3. Number of Job Postings by Occupation for latest 12 months (Sept 2019 - Aug 2020)**

| **Occupation** | **Bay Region** | **Silicon Valley Sub-Region** |
| --- | --- | --- |
| Information Technology Project Managers | 15,549 | 5,712 |
| Computer and Information Systems Managers | 2,062 | 701 |
|  **TOTAL** | **17,611** | **6,413** |

*Source: Burning Glass*

**Table 4a. Top Job Titles for Project Management Occupations for latest 12 months (Sept 2019 - Aug 2020) Bay Region**

|  |  |  |  |
| --- | --- | --- | --- |
| Common Title | Bay | Common Title | Bay |
| Technical Project Manager | 1,274 | Software Manager | 166 |
| Project Manager | 1,077 | Release Manager | 157 |
| Information Technology Project Manager | 1,052 | Software Development Manager | 153 |
| Information Technology Manager | 879 | Chief Information Officer | 145 |
| Scrum Master | 572 | Technical Manager | 140 |
| Technical Lead | 404 | Senior Project Manager | 135 |
| Technology Manager | 355 | Technical Consultant | 125 |
| Director of Technology | 347 | Information Technology Project Coordinator | 123 |
| Infrastructure Project Manager | 308 | Sap Project Manager | 107 |
| Director of Information Technology | 268 | Agile Coach | 107 |
| Director of Engineering | 263 | Digital Project Manager | 101 |
| Information Technology Program Manager | 248 | Delivery Manager | 83 |
| Service Specialist, Information And Technology Industry | 216 | Systems Engineering Manager | 77 |
| Chief Technology Officer | 211 | Specialist, Information And Technology Industry | 75 |

**Table 4b. Top Job Titles for Project Management Occupations for latest 12 months (Sept 2019 - Aug 2020) Silicon** **Valley Sub-Region**

|  |  |  |  |
| --- | --- | --- | --- |
| **Common Title** | **Silicon Valley** | **Common Title** | **Silicon Valley** |
| Technical Project Manager | 547 | Sap Project Manager | 79 |
| Project Manager | 460 | Chief Technology Officer | 78 |
| Information Technology Project Manager | 298 | Technical Consultant | 60 |
| Information Technology Manager | 255 | Technical Manager | 52 |
| Scrum Master | 178 | Service Specialist, Information And Technology Industry | 49 |
| Infrastructure Project Manager | 158 | Manager | 49 |
| Technical Lead | 156 | Systems Engineering Manager | 48 |
| Director of Technology | 142 | Delivery Manager | 47 |
| Information Technology Program Manager | 132 | Agile Coach | 40 |
| Technology Manager | 120 | Chief Information Officer | 36 |
| Director of Engineering | 111 | Release Manager | 34 |
| Director of Information Technology | 95 | Project Manager, Scrum | 33 |
| Software Manager | 90 | Senior Project Manager | 32 |
| Software Development Manager | 79 | Specialist, Information And Technology Industry | 25 |

*Source: Burning Glass*

# Industry Concentration

**Table 5. Industries hiring Project Management 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) | 15,205 | 17,615 | 16% | 20% |
| Computer Systems Design Services (541512) | 8,700 | 9,621 | 11% | 11% |
| Internet Publishing and Broadcasting and Web Search Portals (519130) | 5,837 | 7,128 | 22% | 8% |
| Software Publishers (511210) | 5,794 | 6,951 | 20% | 8% |
| Corporate, Subsidiary, and Regional Managing Offices (551114) | 3,544 | 3,618 | 2% | 5% |
| Data Processing, Hosting, and Related Services (518210) | 3,437 | 4,323 | 26% | 4% |
| Federal Government, Civilian, Excluding Postal Service (901199) | 2,624 | 2,540 | -3% | 3% |
| Other Computer Related Services (541519) | 2,178 | 2,627 | 21% | 3% |
| Electronic Computer Manufacturing (334111) | 1,583 | 1,674 | 6% | 2% |
| Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology) (541715) | 1,434 | 1,482 | 3% | 2% |
| Local Government, Excluding Education and Hospitals (903999) | 1,149 | 1,180 | 3% | 1% |
| Administrative Management and General Management Consulting Services (541611) | 963 | 1,153 | 20% | 1% |
| Research and Development in Biotechnology (except Nanobiotechnology) (541714) | 891 | 1,107 | 24% | 1% |
| Colleges, Universities, and Professional Schools (State Government) (902612) | 790 | 794 | 1% | 1% |
| Colleges, Universities, and Professional Schools (611310) | 776 | 840 | 8% | 1% |

*Source: EMSI 2020.3*

**Table 6. Top Employers Posting Project Management Occupations in Bay Region and Silicon Valley Sub-Region (Sept 2019 - Aug 2020)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Employer** | **Bay** | **Employer** | **Bay** | **Employer** | **Silicon Valley** |
| The Save Mart Companies | 200 | Splunk | 61 | Cisco Systems Inc | 127 |
| Cisco Systems Inc | 161 | Walmart / Sam's | 60 | Apple Inc. | 126 |
| Infosys | 134 | Oracle | 60 | Google Inc. | 102 |
| Facebook | 133 | Vmware Inc | 59 | Infosys | 94 |
| Wells Fargo | 130 | Genentech | 59 | IBM | 64 |
| Apple Inc. | 127 | Visa | 52 | Microsoft Corporation | 59 |
| Google Inc. | 119 | Blue Cross Blue Shield of California | 52 | Vmware Inc | 54 |
| Accenture | 117 | Pacific Gas and Electric Co | 51 | Amazon | 48 |
| Amazon | 108 | JP Morgan Chase Co | 44 | The Save Mart Companies | 40 |
| Deloitte | 104 | Thermo Fisher Scientific Inc | 43 | Splunk | 39 |
| Salesforce | 93 | Charles Schwab | 42 | Deloitte | 39 |
| Microsoft Corporation | 88 | Stanford University | 39 | Walmart / Sam's | 37 |
| KPMG | 85 | Intelliswift Software | 38 | Nvidia Corporation | 32 |
| PricewaterhouseCoopers | 83 | Year Up | 37 | Anthem Blue Cross | 32 |
| Anthem Blue Cross | 79 | Wipro | 37 | Akshaya Inc | 31 |
| Copy Of The Save Mart Companies | 77 | Albertsons | 36 | Accenture | 30 |
| IBM | 67 | Disney | 35 | Stanford University | 29 |

*Source: Burning Glass*

# Educational Supply

There are 13 community colleges in the Bay Region issuing 180 awards on average annually (last 3 years ending 2018-19) on TOP 0506.00-Business Management. There are three (3) colleges in the Silicon Valley Sub-Region issuing 49 awards on average annually (last 3 years) on this TOP code.

There are two (2) Other Educational Institutions in the Bay Region issuing 14 awards on average annually (last 3 years ending 2016-17) on TOP 0506.00-Business Management. There are no Other Educational Institutions in the Silicon Valley Sub-Region issuing awards on this TOP code.

There are six (6) Other Educational Institutions in the Bay Region issuing 410 Bachelor’s degrees on TOP 0506.00-Business Management. There are two (2) Other Educational Institutions in the Silicon Valley Sub-Region issuing 33 Bachelor’s degrees on average annually (last 3 years) on this TOP code.

**Table 7. Awards on TOP 0506.00-Business Management in Bay Region**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **College** | **Sub-Region** | **Associates** | **Certificate Low Unit** | **Total** |
| Chabot | East Bay | 1 | 6 | 7 |
| Contra Costa | East Bay | 33 | 32 | 65 |
| De Anza | Silicon Valley | 9 | 22 | 31 |
| Diablo Valley | East Bay |  | 5 | 5 |
| Laney | East Bay | 3 |  | 3 |
| Merritt | East Bay |  | 4 | 4 |
| Monterey | SC - Monterey |  | 2 | 2 |
| Napa | North Bay | 1 |  | 1 |
| San Jose City | Silicon Valley | 3 | 7 | 10 |
| San Mateo | Mid-Peninsula | 6 | 8 | 14 |
| Santa Rosa | North Bay | 11 | 15 | 26 |
| Solano | North Bay | 4 | 1 | 5 |
| West Valley | Silicon Valley | 4 | 4 | 8 |
| **Total Bay Region** | **76** | **104** | **180** |
| **Total Silicon** **Valley Sub-Region** | **16** | **33** | **49** |

# Source: Data Mart

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

**Table 7b. Other Educational Institution Awards on TOP 0506.00-Business Management in Bay Region**

|  |  |  |  |
| --- | --- | --- | --- |
| **College** | **Sub-Region** | **Award < 1 academic yr.** | **Total** |
| CET-Watsonville | SC - Monterey | 13 | 13 |
| Golden Gate University-San Francisco | Mid-Peninsula | 1 | 1 |
| **Total Bay Region** | **14** | **14** |
| **Total Silicon** **Valley Sub-Region** | **0** | **0** |

# Source: Data Mart

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

**Table 7c. Bachelor’s Degree Awards on TOP 0506.00-Business Management in Bay Region**

|  |  |  |
| --- | --- | --- |
| College | Sub-Region | Bachelor’s Degree |
| Cogswell College | Silicon Valley | 1 |
| FIDM-Fashion Institute of Design & Merchandising-San Francisco | Mid-Peninsula | 31 |
| Mills College | East Bay | 6 |
| Santa Clara University | Silicon Valley | 32 |
| University of California-Santa Cruz | SC - Monterey | 264 |
| University of San Francisco | Mid-Peninsula | 76 |
| **Total Bay Region** | **410** |
| **Total Silicon** **Valley Sub-Region** | **33** |

# 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 7,893 annual openings for the Project Management occupational cluster and 604 annual (3-year average) awards from community colleges and Other Educational Institutions for an annual undersupply of 7,289 students. In the Silicon Valley Sub-Region, there is also a gap with 2,997 annual openings and 82 annual (3-year average) awards from community colleges and Other Educational Institutions for an annual undersupply of 2,915 students.

# Student Outcomes

**Table 8. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 0506.00-Business Management**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **2017-18** | **Bay** All CTE Programs | **Mission College** All CTE Programs | **State** 0506.00 | **Bay** 0506.00 | **Silicon Valley** 0506.00 | **Mission College** 0506.00 |
| % Employed Four Quarters After Exit | 74% | 77% | 64% | 67% | 68% | n/a |
| Median Quarterly Earnings Two Quarters After Exit | $10,550 | $8,007 | $8,707 | $10,788 | $15,125 | n/a |
| Median % Change in Earnings | 46% | 49% | 27% | 29% | 15% | n/a |
| % of Students Earning a Living Wage | 63% | 66% | 56% | 50% | 62% | n/a |

*Source: Launchboard Pipeline (version available on (9/15/20)*

# Skills, Certifications and Education

**Table 9. Top Skills for Project Management Occupations in Bay Region (Sept 2019 - Aug 2020)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Skill** | **Postings** | **Skill** | **Postings** | **Skill** | **Postings** |
| Project Management | 8,875 | Java | 1,426 | Product Development | 982 |
| Budgeting | 4,413 | Change Management | 1,365 | Software as a Service  | 974 |
| Scrum | 3,660 | Quality Assurance and Control | 1,314 | Agile Development | 947 |
| Software Development | 3,166 | Oracle | 1,305 | Waterfall Development Process | 921 |
| Project Planning and Development Skills | 2,705 | SAP | 1,291 | Confluence | 910 |
| Scheduling | 2,684 | Systems Development Life Cycle (SDLC) | 1,284 | Conflict Management | 902 |
| Scrum Master | 2,140 | Microsoft Project | 1,254 | Enterprise Resource Planning (ERP) | 839 |
| Atlassian JIRA | 2,099 | Product Management | 1,207 | Quality Management | 821 |
| Stakeholder Management | 1,706 | Information Systems | 1,190 | Process Improvement | 799 |
| Software Engineering | 1,693 | Salesforce | 1,118 | Key Performance Indicators (KPIs) | 787 |
| Business Process | 1,670 | Staff Management | 1,042 | DevOps | 776 |
| Customer Service | 1,607 | Python | 1,037 | Business Development | 740 |
| SQL | 1,461 | E-Commerce | 1,017 | Linux | 728 |

*Source: Burning Glass*

**Table 10. Certifications for Project Management Occupations in Bay Region (Sept 2019 - Aug 2020)**

Note: 75% 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.

|  |  |  |  |
| --- | --- | --- | --- |
| **Certification** | **Postings** | **Certification** | **Postings** |
| Project Management Certification | 2,700 | Information Systems Certification | 81 |
| Project Management Professional (PMP) | 1,989 | Six Sigma Certification | 69 |
| Certified ScrumMaster (CSM) | 931 | Certified Scrum Product Owner (CSPO) | 62 |
| IT Infrastructure Library (ITIL) Certification | 448 | Certified in Risk and Information Systems Control | 61 |
| Driver's License | 241 | Certified Public Accountant (CPA) | 61 |
| PMI Agile Certified Practitioner (PMI-ACP) | 168 | Lean Six Sigma Certification | 57 |
| Agile Certification | 168 | Certified Scrum Trainer (CST) | 54 |
| Certified Information Systems Auditor (CISA) | 154 | Certified Internal Auditor (CIA) | 54 |
| Certified Scrum Professional (CSP) | 133 | Chartered Financial Analyst (CFA) | 47 |
| Certified Information Systems Security Professional (CISSP) | 121 | Six Sigma Black Belt Certification | 45 |
| Security Clearance | 112 | PMI Certified Associate in Project Management (CAPM) | 45 |
| Certified Information Security Manager (CISM) | 103 | Cisco Certified Network Associate (CCNA) | 40 |

*Source: Burning Glass*

**Table 11. Education Requirements for Project Management Occupations in Bay Region**

Note: 42% 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 | 536 | 5% |
| Associate Degree | 112 | 1% |
| Bachelor’s Degree or Higher | 8,818 | 94% |

*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