** Management Information Systems Support Occupations**

**Labor Market Information Report**

**De Anza 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 Management Information Systems Support 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 3,113 students in the Bay region and 1,394 students in the Silicon Valley Sub-Region.

This report also provides student outcomes data on employment and earnings for programs on TOP 0708.20 - Computer Support 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 De Anza College and in the region.

# Introduction

This report profiles Management Information Systems Support Occupations in the 12 county Bay region and in the Silicon Valley sub-region for a proposed new program at De Anza College.

|  |
| --- |
| * **Computer User Support Specialists (SOC 15-1151):** Provide technical assistanceto computer users. Answer questions or resolve computer problems for clients in person, or via telephone or electronically. May provide assistance concerning the use of computer hardware and software, including printing, installation, word processing, electronic mail, and operating systems. Excludes “Network and Computer Systems Administrators” (15-1142).
 |
| Entry-Level Educational Requirement: Some college, *no degree* |
| Training Requirement: None |
| Percentage of Community College Award Holders or Some Postsecondary Coursework: 41% |

# Occupational Demand

**Table 1. Employment Outlook for Management Information Systems Support 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 User Support Specialists | 29,393 | 34,005 | 4,612  | 16% | 15,944 | 3,189 | $20.02  | $32.70  |

*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 Management Information Systems Support Occupations in Silicon Valley 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 User Support Specialists | 13,000 | 14,985 | 1,985  | 15% | 6,970 | 1,394 | $20.93  | $35.03  |

*Source: EMSI 2019.1*

**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 (March 2018 - Feb 2019)**

| Occupation | Bay Region | Silicon Valley |
| --- | --- | --- |
|  Computer User Support Specialists | 14,324 | 5,226 |

*Source: Burning Glass*

**Table 4. Top Job Titles for Management Information Systems Support Occupations for latest 12 months (March 2018 - Feb 2019)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Common Title | Bay | Silicon Valley | Common Title | Bay | Silicon Valley |
| Desktop Support | 1,014 | 337 | Desktop Support Analyst | 188 | 47 |
| Technical Support Engineer | 763 | 430 | Help Desk Analyst | 184 | 33 |
| Desktop Support Technician | 508 | 172 | Help Desk Support | 175 | 38 |
| Help Desk Technician | 419 | 118 | PC Technician | 170 | 46 |
| Information Technology Specialist | 411 | 93 | Desktop Support Specialist | 169 | 75 |
| Information Technology Support Specialist | 403 | 80 | Technical Support Analyst | 166 | 49 |
| Technical Support Specialist | 391 | 97 | Computer Technician | 165 | 46 |
| Information Technology Technician | 374 | 103 | Desktop Technician | 145 | 3 |
| Lead Technician | 239 | 89 | Technical Support Representative | 125 | 40 |
| Information Technology Support Technician | 225 | 65 | Applications Engineer | 124 | 68 |
| Help Desk Specialist | 214 | 62 | Help Desk | 121 | 42 |
| Customer Support Engineer | 213 | 141 | Customer Support | 106 | 26 |
| Field Service Technician | 210 | 69 | Information Technology Support Analyst | 103 | 25 |
| Geek Squad Agent | 192 | 31 | Support Specialist | 103 | 14 |

*Source: Burning Glass*

# Industry Concentration

**Table 5. Industries hiring Management Information Systems Support 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) | 5,372 | 5,515 | 18% | 18.3% |
| Computer Systems Design Services (541512) | 3,397 | 3,429 | 14% | 11.4% |
| Software Publishers (511210) | 2,181 | 2,314 | 28% | 7.7% |
| Electronic Computer Manufacturing (334111) | 2,082 | 2,153 | 9% | 7.1% |
| Internet Publishing and Broadcasting and Web Search Portals (519130) | 1,942 | 2,054 | 43% | 6.8% |
| Data Processing, Hosting, and Related Services (518210) | 1,189 | 1,305 | 47% | 4.3% |
| Colleges, Universities, and Professional Schools (State Government) (902612) | 1,141 | 1,196 | 16% | 4.0% |
| Colleges, Universities, and Professional Schools (611310) | 929 | 956 | 12% | 3.2% |
| Corporate, Subsidiary, and Regional Managing Offices (551114) | 732 | 788 | 15% | 2.6% |
| Other Computer Related Services (541519) | 739 | 755 | 22% | 2.5% |
| Colleges, Universities, and Professional Schools (Local Government) (903612) | 572 | 546 |  (14%) | 1.8% |
| Temporary Help Services (561320) | 507 | 507 | 7% | 1.7% |
| Local Government, Excluding Education and Hospitals (903999) | 465 | 468 | 6% | 1.6% |
| Computer and Computer Peripheral Equipment and Software Merchant Wholesalers (423430) | 456 | 442 |  (7%) | 1.5% |
| Elementary and Secondary Schools (Local Government) (903611) | 383 | 384 | 7% | 1.3% |

*Source: EMSI 2019.1*

**Table 6. Top Employers Posting Management Information Systems Support Occupations in Bay Region and Silicon Valley Sub-Region (March 2018 - Feb 2019)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Employer | Bay | Employer | Bay | Employer | Silicon Valley |
| Best Buy | 288 | Macropace Technologies | 30 | Best Buy | 54 |
| Milestone Technologies Incorporated | 129 | Macy's | 30 | Cisco Systems Incorporated | 42 |
| Excell | 72 | Worldwide Techservices | 30 | Milestone Technologies Incorporated | 39 |
| Milestone Technologies | 67 | Apple Inc. | 29 | Wipro | 37 |
| Wipro | 60 | Frys Electronics | 29 | Dgn Technologies | 33 |
| Cisco Systems Incorporated | 52 | NTT Data | 29 | Google Inc. | 32 |
| Google Inc. | 40 | Accenture | 28 | Excell | 31 |
| K Anand Corporation | 38 | Techfetch Com | 28 | Macropace Technologies | 30 |
| US Army | 36 | Redpoint Ventures | 26 | K Anand Corporation | 28 |
| Astreya Partners | 35 | Cystems Logic | 25 | Techfetch Com | 26 |
| Dgn Technologies | 34 | Tekwissen | 25 | Apple Inc. | 25 |
| IBM | 33 | Codeforce 360 | 24 | Cystems Logic | 21 |
| Astreya | 32 | SAP | 24 | Codeforce 360 | 20 |
| Facebook | 32 | F2Onsite | 23 | KLA-Tencor | 20 |
| Gap Inc. | 31 | General Dynamics | 22 | Astreya | 19 |
| Kaiser Permanente | 31 | Talbridge Limited | 22 | Walkwater Technologies | 19 |

*Source: Burning Glass*

# Educational Supply

There are 7 community colleges in the Bay Region issuing 76 awards on average annually (last 3 years) on TOP 0708.20 - Computer Support. There are no colleges in the Silicon Valley Sub-Region issuing awards on this TOP code.

**Table 7. Awards on TOP 0708.20 - Computer Support in the Bay Region**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| College | Sub-Region | Headcount | Associates | Certificates | Total |
| Alameda | East Bay |  29  |  |  |  |
| Cabrillo | Santa Cruz & Monterey |  n/a  | 3 | 8 | 11 |
| Contra Costa | East Bay |  n/a  |  | 5 | 5 |
| Diablo Valley | East Bay |  n/a  | 6 | 8 | 14 |
| Gavilan | Santa Cruz & Monterey |  23  |  |  |  |
| Hartnell | Santa Cruz & Monterey |  n/a  | 3 | 2 | 5 |
| Mission | Silicon Valley | 45 |  |  |  |
| Monterey Peninsula | Santa Cruz & Monterey |  18  |  |  |  |
| Ohlone | East Bay |  n/a  | 2 | 2 | 4 |
| San Francisco | Mid-Peninsula |  260  |  | 27 | 27 |
| San Francisco College Centers | Mid-Peninsula |  n/a  |  |  |  |
| San Jose | Silicon Valley | 38 |  |  |  |
| Santa Rosa | North Bay | 86 |  | 10 | 10 |
| **Total Bay Region** |  **499**  |  **14**  |  **62**  |  **76**  |
| **Total Silicon Valley Sub-Region** | **83** | **0** | **0** | **0** |

# *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 3,189 annual openings for the Management Information Systems Support occupational cluster and 76 annual (3-year average) awards for an annual undersupply of 3,113 students. In the Silicon Valley Sub-Region, there is also a large gap with 1,394 annual openings and no annual (3-year average) awards, for an annual undersupply of 1,394 students.

# Student Outcomes

**Table 8. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 0708.20 - Computer Support**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 2015-16 | Bay (All CTE Programs) | De Anza College (All CTE Programs) | State (0708.20) | Bay (0708.20) | Silicon Valley (0708.20) | De Anza College (0708.20) |
| % Employed Four Quarters After Exit | 74% | 69% | 70% | 71% | 85% | n/a |
| Median Quarterly Earnings Two Quarters After Exit | $10,550 | $10,272 | 18,121 | 18,121 | $12,931 | n/a |
| Median % Change in Earnings | 46% | 55% | 57% | 81% | 134% | n/a |
| % of Students Earning a Living Wage | 63% | 60% | 53% | 63% | 67% | n/a |

*Source: Launchboard Pipeline (version available on 3/21/19)*

# Skills, Certifications and Education

**Table 9. Top Skills for Management Information Systems Support Occupations in Bay Region (March 2018 - Feb 2019)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Skill | Postings | Skill | Postings | Skill | Postings |
| Technical Support | 6,984 | Computer Installation and Setup | 1,114 | Application Support | 731 |
| Customer Service | 4,704 | Transmission Control Protocol / Internet Protocol  | 1,107 | Oracle | 720 |
| Repair | 2,641 | SQL | 1,092 | System Administration | 692 |
| Help Desk Support | 2,361 | Virtual Private Networking (VPN) | 1,082 | Dynamic Host Configuration Protocol  | 685 |
| Printers | 2,322 | SAP | 1,023 | Scheduling | 676 |
| Microsoft Active Directory | 2,249 | Project Management | 977 | Network Hardware/ Software Maintenance | 671 |
| It Support | 2,116 | Hardware/Software | 962 | Wide Area Network | 664 |
| Hardware and Software Installation | 1,882 | Cisco | 948 | Asset Management Industry Knowledge | 662 |
| Microsoft Operating Systems | 1,698 | Network Troubleshooting | 936 | Break/Fix | 658 |
| Hardware Troubleshooting | 1,492 | Domain Name System (DNS) | 852 | Onboarding | 646 |
| Linux | 1,489 | Video Conferencing | 796 | Python | 643 |
| Customer Contact | 1,478 | Information Systems | 792 | VMware | 635 |
| Technical Troubleshooting | 1,294 | Hardware Experience | 791 | ITIL | 613 |
| MacIntosh OS | 1,250 | Service Level Agreement | 789 | OS X | 612 |
| Software Installation | 1,233 | Java | 753 | Windows Server | 609 |

*Source: Burning Glass*

**Table 10. Certifications for Management Information Systems Support Occupations in the Bay Region (March 2018 - Feb 2019)**

Note: 78% 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 |
| Certified A+ Technician | 1,046 | Apple Certified Support Professional | 39 |
| Driver's License | 865 | Vmware Certified Professional (VCP) | 34 |
| IT Infrastructure Library (ITIL) Certification | 643 | Certified Scrum Trainer (CST) | 31 |
| CompTIA Network+ | 343 | CompTIA Server+ | 29 |
| Microsoft Certified Professional (MCP) | 335 | MECP Advanced Certification | 28 |
| Cisco Certified Network Associate (CCNA) | 250 | MECP Basic Installation | 28 |
| ITIL Certification | 191 | Mobile Electronics Certified Professional | 28 |
| Microsoft Certified Solutions Expert (MCSE) | 175 | Mobile Electronics Certified Professional (MECP) | 28 |
| Microsoft Certified Solutions Associate (MCSA) | 172 | Information Technology Certification | 27 |
| Apple Certified Macintosh Technician | 146 | HDI Desktop Support Technician (DST) | 26 |
| CompTIA Security+ | 112 | Certified Information Systems Auditor (CISA) | 25 |
| Security Clearance | 99 | Certified Information Security Manager (CISM) | 22 |
| Microsoft Certified Desktop Support Technician (Legacy) | 80 | Mac Certified | 21 |
| Cisco Certified Network Professional (CCNP) | 78 | Project Management Professional (PMP) | 19 |
| Project Management Certification | 76 | Certified Novell Administrator | 18 |
| ITIL Foundation | 68 | Apple Certified Technical Coordinator | 17 |
| Cisco Certified Internetwork Expert (CCIE) | 60 | CompTIA Linux+ | 16 |
| Microsoft Certified Technology Specialist (MCTS) | 59 | Telecommunications Certification | 16 |
| Computer Science Certification | 52 | Certified Cardiographic Technician | 15 |
| Certified Information Systems Security Professional (CISSP) | 45 | Information Systems Certification | 15 |

*Source: Burning Glass*

**Table 11. Education Requirements for Management Information Systems Support Occupations in Bay Region**

Note: 57% 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 | 1,185 (19%) |
| Associate Degree | 951 (16%) |
| Bachelor’s Degree or Higher | 3,961 (65%) |

*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