**Management Information Systems Occupations**

**Labor Market Information Report**

**Las Positas College**

Prepared by the San Francisco Bay Center of Excellence

for Labor Market Research

October 2020

# Recommendation

Based on all available data, there appears to be an undersupply of Management Information Systems 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 4,738 students in the Bay region and 708 students in the East Bay Sub-Region.

**Introduction**

This report provides student outcomes data on employment and earnings for TOP 0799.00-Other Information Technology 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 Las Positas College and in the region.

This report profiles Management Information Systems Occupations in the 12 county Bay region and in the East Bay sub-region for a proposed new program at Las Positas College.

|  |
| --- |
| * **Computer Network Support Specialists (15-1152 / 15-1231):** Analyze, test, troubleshoot, and evaluate existing network systems, such as local area network (LAN), wide area network (WAN), and Internet systems or a segment of a network system. Perform network maintenance to ensure networks operate correctly with minimal interruption. Excludes “Network and Computer Systems Administrators” (15-1142) and “Computer Network Architects” (15-1143).
 |
| Entry-Level Educational Requirement: Associate's degree |
| Training Requirement: None |
| Percentage of Community College Award Holders or Some Postsecondary Coursework: 41% |
|  |
| * **Computer User Support Specialists (15-1151 / 15-1232):** Provide technical assistance to 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 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 Network Support Specialists |  6,417  |  7,464  | 1,048 | 16% |  3,896  |  779  | $29.20 | $39.11 |
| Computer User Support Specialists |  33,416  |  38,498  | 5,081 | 15% |  19,839  |  3,968  | $26.55 | $35.04 |
| **TOTAL** |  **39,833**  |  **45,962**  | **6,129** | **15%** |  **23,735**  |  **4,747**  | **$26.97** | **$35.69** |

*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 Management** **Information Systems Occupations in East Bay 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 Network Support Specialists |  1,304  |  1,384  | 80 | 6% |  633  |  127  | $27.41 | $35.72 |
| Computer User Support Specialists |  6,071  |  6,411  | 340 | 6% |  2,906  |  581  | $24.87 | $31.42 |
| **TOTAL** |  **7,374**  |  **7,794**  | **420** | **6%** |  **3,539**  |  **708**  | **$25.32** | **$32.18** |

*Source: EMSI 2020.3*

**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 (October 2019 - September 2020)**

| Occupation | Bay Region | East Bay Sub-Region |
| --- | --- | --- |
| Computer User Support Specialists | 13,637 | 4,671 |
| Computer Network Support Specialists | 1,115 | 375 |
|  **TOTAL** | **14,752** | **5,046** |

*Source: Burning Glass*

**Table 4a. Top Job Titles for Management** **Information Systems Occupations for latest 12 months (October 2019 - September 2020) Bay Region**

|  |  |  |  |
| --- | --- | --- | --- |
| Common Title | Bay | Common Title | Bay |
| Desktop Support | 355 | Sap Abap | 90 |
| Technical Support Engineer | 330 | Help Desk | 80 |
| IT Support Specialist | 277 | IT Support | 77 |
| Desktop Support Technician | 270 | Sap | 75 |
| Technical Support Specialist | 163 | Pc Technician | 74 |
| Help Desk Technician | 139 | Technical Support | 71 |
| Field Service Technician | 139 | Technician Lead | 70 |
| IT Support Technician | 128 | Workstation Pc Technician | 69 |
| Desktop Support Specialist | 116 | IT Help Desk Technician | 62 |
| IT Technician | 108 | Help Desk Support | 61 |
| Customer Success Engineer | 100 | Computer Technician | 54 |
| Desktop Support Engineer | 98 | Customer Support Engineer | 52 |
| IT Specialist | 94 | Technical Support Analyst | 51 |
| Desktop Support Analyst | 91 | Network Technician | 51 |

**Table 4b. Top Job Titles for Management** **Information Systems Occupations for latest 12 months (October 2019 - September 2020) East Bay Sub-Region**

|  |  |  |  |
| --- | --- | --- | --- |
| Common Title | East Bay | Common Title | East Bay |
| IT Support Specialist | 134 | Desktop Support Analyst | 31 |
| Desktop Support | 131 | It Specialist | 30 |
| Technical Support Engineer | 110 | Salesforce Technician Lead | 28 |
| Desktop Support Technician | 98 | IT Technician | 26 |
| Technical Support Specialist | 81 | Customer Support | 24 |
| Desktop Support Specialist | 55 | Service Desk Analyst | 22 |
| Customer Success Engineer | 54 | IT Support Analyst | 22 |
| Desktop Support Engineer | 53 | Technical Support Manager | 21 |
| IT Support Technician | 46 | Technical Support | 21 |
| Help Desk | 37 | Sap Abap | 21 |
| IT Support | 35 | Technician Lead | 20 |
| Help Desk Technician | 35 | Technical Support Analyst | 19 |
| Field Service Technician | 34 | Customer Engineer | 19 |
| Integration Lead | 32 | Application Support Engineer | 19 |

*Source: Burning Glass*

# Industry Concentration

**Table 5. Industries hiring Management** **Information Systems 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) | 7,896 | 9,704 | 23% | 20% |
| Computer Systems Design Services (541512) | 4,508 | 5,298 | 18% | 11% |
| Software Publishers (511210) | 3,556 | 4,506 | 27% | 9% |
| Internet Publishing and Broadcasting and Web Search Portals (519130) | 2,315 | 2,954 | 28% | 6% |
| Data Processing, Hosting, and Related Services (518210) | 1,903 | 2,676 | 41% | 5% |
| Electronic Computer Manufacturing (334111) | 1,889 | 2,009 | 6% | 5% |
| Colleges, Universities, and Professional Schools (State Government) (902612) | 1,429 | 1,590 | 11% | 4% |
| Colleges, Universities, and Professional Schools (611310) | 1,278 | 1,412 | 10% | 3% |
| Other Computer Related Services (541519) | 1,128 | 1,436 | 27% | 3% |
| Corporate, Subsidiary, and Regional Managing Offices (551114) | 1,049 | 1,090 | 4% | 3% |
| Local Government, Excluding Education and Hospitals (903999) | 684 | 718 | 5% | 2% |
| Temporary Help Services (561320) | 620 | 636 | 3% | 2% |
| Elementary and Secondary Schools (Local Government) (903611) | 607 | 629 | 4% | 2% |
| Colleges, Universities, and Professional Schools (Local Government) (903612) | 548 | 452 | -18% | 1% |
| Computer and Computer Peripheral Equipment and Software Merchant Wholesalers (423430) | 444 | 345 | -22% | 1% |
| Wired Telecommunications Carriers (517311) | 408 | 356 | -13% | 1% |

*Source: EMSI 2020.3*

**Table 6. Top Employers Posting Management Information Systems Occupations in Bay Region and East Bay Sub-Region (October 2019 - September 2020)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Employer** | **Bay** | **Employer** | **Bay** | **Employer** | **East** **Bay** |
| Best Buy | 122 | Sunpower Corporation | 30 | Milestone Technologies | 57 |
| Amazon | 88 | Splunk | 30 | Milestone Technologies Inc | 54 |
| Milestone Technologies Inc | 87 | Genentech | 30 | Amazon | 46 |
| Milestone Technologies | 81 | Cloudious Llc | 30 | Wells Fargo | 43 |
| Excell | 69 | US Government | 29 | Pacific Gas and Electric Co | 33 |
| Pacific Gas and Electric Co | 53 | Bcforward | 29 | Facebook | 30 |
| Microsoft Corporation | 53 | Google Inc. | 28 | Accenture | 24 |
| Anthem Blue Cross | 52 | Cogent Infotech Corp | 28 | Excell | 23 |
| IBM | 51 | Palo Alto Networks | 27 | Citrix | 21 |
| Wells Fargo | 50 | Codeforce 360 | 27 | Genentech | 20 |
| Accenture | 46 | Cisco Systems Inc | 27 | Microsoft Corporation | 19 |
| Facebook | 40 | Apple Inc. | 27 | Cogent Infotech Corp | 18 |
| Tesla | 34 | Sgic Cloud Technologies Inc | 26 | Best Buy | 18 |
| Thermo Fisher Scientific Inc | 33 | Splunk, Inc | 25 | Deloitte | 17 |
| Wipro | 32 | Lawrence Livermore National Laboratory | 25 | Splunk, Inc | 14 |
| Astreya | 32 | Svk Technology Solutions | 24 | Splunk | 14 |
| Vmware Incorporated | 30 | KLA-Tencor | 24 | Pinterest | 14 |

*Source: Burning Glass*

# Educational Supply

There is one (1) community college in the Bay Region issuing 9 awards on average annually (last 3 years ending 2018-19) on TOP 0799.00-Other Information Technology. There are no colleges in the East Bay Sub-Region issuing awards on average annually (last 3 years) on this TOP code.

**Table 7. Community College Awards on TOP 0799.00-Other Information Technology in Bay Region**

|  |  |  |  |
| --- | --- | --- | --- |
| College | Sub-Region | Certificate Low Unit | Total |
| Santa Rosa | North Bay | 9 | 9 |
| **Total Bay Region** | **9** | **9** |
| **Total East** **Bay Sub-Region** | **0** | **0** |

# 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 4,747 annual openings for the Management Information Systems occupational cluster and 9 annual (3-year average) awards for an annual undersupply of 4,738 students. In the East Bay Sub-Region, there is also a gap with 708 annual openings and no annual (3-year average) awards for an annual undersupply of 708 students.

# Student Outcomes

**Table 8. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 0799.00-Other Information Technology**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **2017-18** | **Bay** All CTE Programs | **Las Positas College** All CTE Programs | **State** 0799.00 | **Bay** 0799.00 | **East Bay** 0799.00 | **Las Positas College** 0799.00 |
| % Employed Four Quarters After Exit | 74% | 70% | 59% | 54% | 68% | n/a |
| Median Quarterly Earnings Two Quarters After Exit | $10,550 | $11,069 | $10,093 | $10,149 | n/a | n/a |
| Median % Change in Earnings | 46% | 30% | 14% | 34% | 15% | n/a |
| % of Students Earning a Living Wage | 63% | 52% | 59% | 45% | n/a | n/a |

*Source: Launchboard Pipeline (version available on (9/30/20)*

# Skills, Certifications and Education

**Table 9. Top Skills for Management** **Information Systems Occupations in Bay Region (October 2019 - September 2020)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Skill | Postings | Skill | Postings | Skill | Postings |
| Technical Support | 6,346 | Troubleshooting Technical Issues | 1,183 | Domain Name System (DNS) | 791 |
| Customer Service | 4,322 | Network Troubleshooting | 1,120 | Wide Area Network (WAN) | 789 |
| Repair | 2,655 | Project Management | 1,096 | Hardware Experience | 774 |
| Printers | 2,033 | Software Installation | 1,077 | Business Process | 773 |
| It Support | 1,997 | Computer Installation and Setup | 1,066 | Salesforce | 750 |
| Help Desk Support | 1,979 | Hardware and Software Configuration | 1,047 | Break/Fix | 736 |
| Microsoft Active Directory | 1,977 | Python | 1,006 | Information Systems | 705 |
| Hardware and Software Installation | 1,836 | Virtual Private Networking (VPN) | 994 | Network Hardware/Software Maintenance | 702 |
| Microsoft Operating Systems | 1,450 | Transmission Control Protocol / Internet Protocol (TCP / IP) | 941 | Telecommunications | 701 |
| Linux | 1,444 | Cisco | 908 | System Administration | 699 |
| Customer Contact | 1,421 | Oracle | 839 | ITIL | 692 |
| SAP | 1,378 | Scheduling | 830 | System/Network Configuration | 682 |
| MacIntosh OS | 1,300 | Java | 825 | Software as a Service (SaaS) | 681 |
| SQL | 1,298 | Computer Hardware/Software Knowledge | 804 | Application Support | 671 |
| Hardware Troubleshooting | 1,281 | Service Level Agreement | 795 | Onboarding | 659 |

*Source: Burning Glass*

**Table 10. Certifications for Management Information Systems Occupations in Bay Region (October 2019 - September 2020)** Note: 76% 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** |
| Driver's License | 1,033 | Microsoft Certified Desktop Support Technician (Legacy) | 74 |
| Certified A+ Technician | 924 | Certified Information Systems Security Professional (CISSP) | 60 |
| IT Infrastructure Library (ITIL) Certification | 739 | ITIL Foundation | 51 |
| CompTIA Network+ | 402 | Cisco Certified Internetwork Expert (CCIE) | 45 |
| Microsoft Certified Professional (MCP) | 311 | Apple Certified Macintosh Technician | 38 |
| Cisco Certified Network Associate (CCNA) | 301 | Project Management Professional (PMP) | 36 |
| Security Clearance | 237 | Microsoft Certified Systems Engineer (Legacy) | 35 |
| Microsoft Certified Solutions Associate (MCSA) | 213 | CompTIA Linux+ | 33 |
| Microsoft Certified Solutions Expert (MCSE) | 206 | Mbe Certified | 32 |
| CompTIA Security+ | 149 | Certified Salesforce Platform Developer | 31 |
| Project Management Certification | 133 | Certified Novell Administrator | 31 |
| Cisco Certified Network Professional (CCNP) | 101 | SAP Certification | 30 |

*Source: Burning Glass*

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

|  |  |  |
| --- | --- | --- |
| **Education (minimum advertised)** | **Latest 12 Mos. Postings** | **Percent 12 Mos. Postings** |
| High school or vocational training | 1,467 | 22% |
| Associate Degree | 813 | 12% |
| Bachelor’s Degree or Higher | 4,091 | 66% |

*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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