

# Labor Market Analysis for Program Recommendation

# IT Technical Support Occupations

# De Anza College

## Prepared by the San Francisco Bay Center of Excellence for Labor Market Research

**January 2022**

## Recommendation

Based on all available data, there appears to be an “undersupply” of Information Technology (IT) Technical 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 4,088 students in the Bay region and 1,580 students in the Silicon Valley Sub-Region.

## Introduction

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

This report profiles Information Technology (IT) Technical 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 Network Support Specialists (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 (15-1232):** 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 IT Technical Support Occupations in Bay Region**

| **Occupation** | **2020 Jobs** | **2025 Jobs** | **5-yr Change** | **5-yr % Change** | **5-yr Total Openings** | **Annual Openings** | **25% Hourly Earning** | **Median Hourly Wage** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Computer Network Support Specialists | 5,615 | 6,507 | 891 | 16% | 3,496 | 699 | $33 | $66 |
| Computer User Support Specialists | 28,162 | 32,436 | 4,273 | 15% | 17,236 | 3,447 | $29 | $61 |
| **Total** | **33,777** | **38,943** | **5,166** | **15%** | **20,732** | **4,146** |  |  |
| Source: EMSI 2021.3 | | | | | | | | |

**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 IT Technical Support Occupations in Silicon Valley Sub-region**

| **Occupation** | **2020 Jobs** | **2025 Jobs** | **5-yr Change** | **5-yr % Change** | **5-yr Total Openings** | **Annual Openings** | **25% Hourly Earning** | **Median Hourly Wage** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Computer Network Support Specialists | 2,190 | 2,543 | 352 | 16% | 1,368 | 274 | $31 | $65 |
| Computer User Support Specialists | 10,208 | 11,965 | 1,756 | 17% | 6,530 | 1,306 | $25 | $58 |
| **Total** | **12,398** | **14,508** | **2,110** | **17%** | **7,898** | **1,580** | **$26.06** | **$59.24** |
| Source: EMSI 2021.3 | | | | | | | | |

**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 (Dec 2020 - Nov 2021)**

| **Occupation** | **Bay Region** | **Silicon Valley** |
| --- | --- | --- |
| Computer User Support Specialists | 11,498 | 3,813 |
| Computer Network Support Specialists | 1,191 | 551 |
| Source: Burning Glass | | |

**Table 4a. Top Job Titles for IT Technical Support Occupations for latest 12 months (Dec 2020 - Nov 2021) Bay Region**

| **Title** | **Bay** | **Title** | **Bay** |
| --- | --- | --- | --- |
| It Support Specialist | 355 | Desktop Support Analyst | 95 |
| Technical Support Engineer | 223 | It Specialist | 92 |
| Desktop Support Technician | 217 | It Help Desk Technician | 70 |
| Desktop Support | 201 | Hardware Technician | 64 |
| Technical Support Specialist | 173 | Geek Squad Consultation Agent | 63 |
| It Technician | 144 | Desktop Support Specialist | 59 |
| It Support Technician | 137 | Technician Lead | 59 |
| Field Service Technician | 110 | Desktop Technician | 56 |
| Help Desk Technician | 100 | It Support | 56 |
| Source: Burning Glass | | | |

**Table 4b. Top Job Titles for IT Technical Support Occupations for latest 12 months (Dec 2020 - Nov 2021) Silicon Valley Sub-Region**

| **Title** | **Silicon Valley** | **Title** | **Silicon Valley** |
| --- | --- | --- | --- |
| Technical Support Engineer | 100 | Technical Support Specialist | 32 |
| It Support Specialist | 80 | It Help Desk Technician | 31 |
| Desktop Support | 79 | Customer Success Engineer | 28 |
| Desktop Support Technician | 69 | Desktop Support Analyst | 27 |
| It Technician | 53 | Help Desk Technician | 27 |
| Hardware Technician | 42 | Customer Support Engineer | 25 |
| It Support Technician | 39 | It Support | 22 |
| Technician Lead | 38 | Field Service Technician | 21 |
| It Specialist | 32 | Network Technician | 21 |
| Source: Burning Glass | | | |

## Industry Concentration

**Table 5. Industries hiring IT Technical Support Workers in Bay Region**

| **Industry – 6 Digit NAICS (No. American Industry Classification) Codes** | **Jobs in Industry (2020)** | **Jobs in Industry (2025)** | **% Change (2020-25)** | **% Occupation Group in Industry (2020)** |
| --- | --- | --- | --- | --- |
| Custom Computer Programming Services | 7,485 | 9,166 | 22% | 22% |
| Computer Systems Design Services | 4,053 | 4,685 | 16% | 12% |
| Software Publishers | 3,475 | 4,134 | 19% | 10% |
| Data Processing, Hosting, and Related Services | 2,032 | 2,484 | 22% | 6% |
| Internet Publishing and Broadcasting and Web Search Portals | 1,924 | 2,388 | 24% | 6% |
| Other Computer Related Services | 1,087 | 1,375 | 26% | 3% |
| Electronic Computer Manufacturing | 747 | 841 | 13% | 2% |
| Corporate, Subsidiary, and Regional Managing Offices | 815 | 756 | -7% | 2% |
| Colleges, Universities, and Professional Schools | 673 | 717 | 6% | 2% |
| Colleges, Universities, and Professional Schools (State Government) | 662 | 665 | 0% | 2% |
| Source: EMSI 2021.3 | | | | |

**Table 6. Top Employers Posting IT Technical Support Occupations in Bay Region and Silicon Valley Sub-Region (Dec 2020 - Nov 2021)**

| **Employer** | **Bay** | **Employer** | **Silicon Valley** |
| --- | --- | --- | --- |
| Microsoft Corporation | 214 | Microsoft Corporation | 147 |
| Best Buy | 161 | Palo Alto Networks | 87 |
| Palo Alto Networks | 87 | IBM | 39 |
| Amazon | 68 | Cynet Systems | 33 |
| University Of California | 67 | Best Buy | 32 |
| Milestone Technologies | 60 | Google Inc. | 31 |
| Cynet Systems | 59 | Applied Materials | 28 |
| Anthem Blue Cross | 54 | Anthem Blue Cross | 25 |
| Accenture | 49 | Adobe Systems | 24 |
| Lucid Motors Inc | 48 | Excell | 23 |
| Source: Burning Glass | | | |

## Educational Supply

There are eight (8) community colleges in the Bay Region issuing 58 awards on average annually (last 3 years ending 2018-19) on TOP 0708.20 Computer Support. In the Silicon Valley Sub-Region, there are no community colleges that issued awards on average annually (last 3 years) on this TOP code.

**Table 7a. Community College Awards on TOP 0708.20 Computer Support in Bay Region**

| **College** | **Subregion** | **Associate** | **Certificate Low** | **Total** |
| --- | --- | --- | --- | --- |
| Cabrillo | SC-Monterey | 3 | 7 | 10 |
| Contra Costa | East Bay | 0 | 4 | 4 |
| Diablo Valley | East Bay | 3 | 1 | 4 |
| Hartnell | SC-Monterey | 2 | 1 | 3 |
| Ohlone | East Bay | 1 | 1 | 2 |
| San Francisco | Mid-Peninsula | 0 | 26 | 26 |
| Santa Rosa | North Bay | 0 | 9 | 9 |
| Skyline | Mid-Peninsula | 0 | 0 | 0 |
| **Total** |  | **9** | **49** | **58** |
| 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 4,146 annual openings for the IT Technical Support occupational cluster and 58 annual (3-year average) awards for an annual undersupply of 4,088 students. In the Silicon Valley Sub-Region, there is also a gap with 1,580 annual openings and no annual (3-year average) awards for an annual undersupply of 1,580 students.

## Student Outcomes

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

| **Metric Outcomes** | **Bay All CTE Programs** | **De Anza All CTE Programs** | **State 0708.20** | **Bay 0708.20** | **Silicon Valley 0708.20** | **De Anza 0708.20** |
| --- | --- | --- | --- | --- | --- | --- |
| Students with a Job Closely Related to Their Field of Study | 73% | 73% | 70% | 66% | N/A | N/A |
| Median Annual Earnings for SWP Exiting Students | $44,575 | $41,081 | $36,367 | $40,766 | $39,158 | N/A |
| Median Change in Earnings for SWP Exiting Students | 30% | 31% | 18% | 23% | 34% | N/A |
| Exiting Students Who Attained the Living Wage | 53% | 50% | 48% | 40% | N/A | N/A |
| Source: Launchboard Strong Workforce Program Median of 2016-18. | | | | | | |

## Skills, Certifications and Education

**Table 9. Top Skills for IT Technical Support Occupations in Bay Region (Dec 2020 - Nov 2021)**

| **Skill** | **Posting** | **Skill** | **Posting** |
| --- | --- | --- | --- |
| Technical Support | 5,579 | Computer Installation and Setup | 1,070 |
| Customer Service | 3,872 | Software Installation | 1,047 |
| Repair | 2,492 | Hardware and Software Configuration | 1,028 |
| It Support | 2,136 | Project Management | 1,027 |
| Help Desk Support | 1,955 | Virtual Private Networking (VPN) | 1,016 |
| Microsoft Active Directory | 1,868 | SQL | 997 |
| Printers | 1,841 | Network Troubleshooting | 921 |
| Hardware and Software Installation | 1,574 | Transmission Control Protocol / Internet Protocol (TCP / IP) | 872 |
| Microsoft Operating Systems | 1,390 | Domain Name System (DNS) | 858 |
| Troubleshooting Technical Issues | 1,382 | Scheduling | 842 |
| MacIntosh OS | 1,273 | Cisco | 814 |
| Linux | 1,224 | Python | 811 |
| Hardware Troubleshooting | 1,199 | Technical Writing / Editing | 785 |
| Customer Contact | 1,197 | Onboarding | 776 |
| Source: Burning Glass | | | |

**Table 10. Certifications for IT Technical Support Occupations in Bay Region (Dec 2020 - Nov 2021)**

| **Certification** | **Posting** | **Certification** | **Posting** |
| --- | --- | --- | --- |
| Driver's License | 869 | Project Management Certification | 89 |
| Certified A+ Technician | 799 | Cisco Certified Network Professional (CCNP) | 72 |
| IT Infrastructure Library (ITIL) Certification | 590 | Certified Information Systems Security Professional (CISSP) | 48 |
| CompTIA Network+ | 348 | Apple Certified Macintosh Technician | 43 |
| Microsoft Certified Professional (MCP) | 268 | Certified Information Systems Auditor (CISA) | 42 |
| Cisco Certified Network Associate (CCNA) | 251 | Registered Behavior Technician | 40 |
| Microsoft Certified Solutions Associate (MCSA) | 184 | Microsoft Certified Desktop Support Technician (Legacy) | 35 |
| Security Clearance | 169 | Certified Information Security Manager (CISM) | 30 |
| Microsoft Certified Solutions Expert (MCSE) | 149 | Cisco Certified Internetwork Expert (CCIE) | 29 |
| CompTIA Security+ | 116 | ITIL Foundation | 28 |
| Source: Burning Glass | | | |

*Note: 76% of records have been excluded because they do not include a certification. As a result, the chart above may not be representative of the full sample.*

**Table 11. Education Requirements for Information Technology Technical Support Occupations in Bay Region**

| **Education (minimum advertised)** | **Latest 12 Mos. Postings** | **Percent 12 Mos. Postings** |
| --- | --- | --- |
| High school or vocational training | 1,881 | 27% |
| Associate's degree | 780 | 11% |
| Bachelor's degree and higher | 4,283 | 62% |
| Source: Burning Glass | | |

*Note: 45% of records have been excluded because they do not include a degree level. As a result, the chart above may not be representative of the full sample.*

## 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/  
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:

• Leila Jamoosian, Research Analyst, for Bay Area Community College Consortium (BACCC) and Centers of Excellence (CoE), [leila@baccc.net](mailto:leila@baccc.net)

• John Carrese, Director, San Francisco Bay Center of Excellence for Labor Market Research, [jcarrese@ccsf.edu](mailto:jcarrese@ccsf.edu) or (415) 267-6544