

# Maintenance Technician Occupations Labor Market Information Report Solano College

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

Based on all available data, there appears to be a significant undersupply of Maintenance Technician workers compared to the demand for this cluster of occupations in the Bay region and in the North Bay sub-region (Marin, Napa, Solano and Sonoma Counties). The gap is about 5,130 students annually in the Bay region and 795 students annually in the North Bay sub-region.

This report also provides student outcomes data on employment and earnings for programs on TOP 0956.00 - Manufacturing and Industrial Technology in the state and region. It is recommended that this 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 Solano College and in the region.

## Introduction

This report profiles Maintenance Technician Occupations in the 12 county Bay region and in the North Bay sub-region for a proposed new program at Solano College.

- **Maintenance Workers, Machinery (SOC 49-9043):** Lubricate machinery, change parts, or perform other routine machinery maintenance. Excludes "Maintenance and Repair Workers, General" (49-9071).  
*Entry-Level Educational Requirement: High school diploma or equivalent*  
*Training Requirement: Long-term on-the-job training*  
*Percentage of Community College Award Holders or Some Postsecondary Coursework: 39%*
- **Maintenance and Repair Workers, General (SOC 49-9071):** Perform work involving the skills of two or more maintenance or craft occupations to keep machines, mechanical equipment, or the structure of an establishment in repair. Duties may involve pipe fitting; boiler making; insulating; welding; machining; carpentry; repairing electrical or mechanical equipment; installing, aligning, and balancing new equipment; and repairing buildings, floors, or stairs. Excludes "Maintenance Workers, Machinery" (49-9043).  
*Entry-Level Educational Requirement: High school diploma or equivalent*  
*Training Requirement: Moderate-term on-the-job training*  
*Percentage of Community College Award Holders or Some Postsecondary Coursework: 38%*
- **Installation, Maintenance, and Repair Workers, All Other (SOC 49-9099):** All, installation, maintenance, and repair workers not listed separately.  
*Entry-Level Educational Requirement: High school diploma or equivalent*  
*Training Requirement: Moderate-term on-the-job training*  
*Percentage of Community College Award Holders or Some Postsecondary Coursework: 37%*
- **Helpers--Installation, Maintenance, and Repair Workers (SOC 49-9098):** Help installation, maintenance, and repair workers in maintenance, parts replacement, and repair of vehicles, industrial machinery, and electrical and electronic equipment. Perform duties such as furnishing tools, materials, and supplies to other workers; cleaning work area, machines, and tools; and holding materials or tools for other workers.  
*Entry-Level Educational Requirement: High school diploma or equivalent*

Training Requirement: Short-term on-the-job training

Percentage of Community College Award Holders or Some Postsecondary Coursework: 22%

## Occupational Demand

**Table 1. Employment Outlook for Maintenance Technician Occupations in Bay Region**

Occupation	2017 Jobs	2022 Jobs	5-Yr Change	5-Yr % Change	5-Yr Openings	Annual Openings	10% Hourly Wage	Median Hourly Wage
Maintenance Workers, Machinery	1,700	1,862	162	10%	1,048	210	\$15.32	\$28.44
Maintenance and Repair Workers, General	33,745	36,376	2,631	8%	19,360	3,872	\$13.57	\$22.98
Installation, Maintenance, and Repair Workers, All Other	5,766	5,998	232	4%	2,991	598	\$13.19	\$19.75
Helpers--Installation, Maintenance, and Repair Workers	3,266	3,515	249	8%	2,334	467	\$11.11	\$16.19
<b>Total</b>	<b>44,478</b>	<b>47,752</b>	<b>3,274</b>	<b>7%</b>	<b>25,734</b>	<b>5,147</b>	<b>\$13.41</b>	<b>\$22.27</b>

Source: EMSI 2018.4

**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 Maintenance Technician Occupations in North Bay Sub-Region**

Occupation	2017 Jobs	2022 Jobs	5-Yr Change	5-Yr % Change	5-Yr Openings	Annual Openings	10% Hourly Wage	Median Hourly Wage
Maintenance Workers, Machinery	216	249	33	15%	148	30	\$14.24	\$21.99
Maintenance and Repair Workers, General	5,244	5,611	367	7%	2,961	592	\$13.24	\$22.20
Installation, Maintenance, and Repair Workers, All Other	926	966	40	4%	484	97	\$12.72	\$17.56
Helpers--Installation, Maintenance, and Repair Workers	527	570	43	8%	380	76	\$10.85	\$14.22
<b>TOTAL</b>	<b>6,914</b>	<b>7,397</b>	<b>483</b>	<b>7%</b>	<b>3,973</b>	<b>795</b>	<b>\$13.02</b>	<b>\$20.97</b>

Source: EMSI 2018.4

**North Bay Sub-Region** includes Marin, Napa, Solano and Sonoma Counties

## Job Postings in Bay Region and North Bay Sub-Region

**Table 3. Number of Job Postings by Occupation for latest 12 months (Nov 2017 - Oct 2018)**

Occupation	Bay Region	North Bay
Maintenance and Repair Workers, General (49-9071.00)	9,795	917
Installation, Maintenance, and Repair Workers, All Other (49-9099.00)	524	78
Helpers--Installation, Maintenance, and Repair Workers (49-9098.00)	275	30
Maintenance Workers, Machinery (49-9043.00)	44	2
<b>Total</b>	<b>10,638</b>	<b>1,027</b>

Source: Burning Glass

**Table 4. Top Job Titles for Maintenance Technician Occupations for latest 12 months (Nov 2017 - Oct 2018)**

Common Title	Bay	North Bay	Common Title	Bay	North Bay
Maintenance Technician	2,037	217	Field Service Engineer	221	48
Service Technician	1,186	114	Maintenance Worker	207	22

Maintenance Technician Occupations in 12 County Bay Region and in North Bay Sub-Region, 2018

Field Service Technician	777	48	Maintenance Assistant	195	11
Facilities Technician	457	23	Equipment Technician	194	8
Maintenance Mechanic	334	92	Facilities Assistant	152	11
Technician	295	19	Maintenance Person	143	24
Maintenance Engineer	262	40	Building Engineer	136	11
Repair Technician	260	26	Maintenance	121	17

Source: *Burning Glass*

## Industry Concentration

**Table 5. Industries hiring Maintenance Technician 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)
Local Government, Excluding Education and Hospitals (903999)	3,508	3,531	6%	7.9%
Hotels (except Casino Hotels) and Motels (721110)	2,409	2,420	2%	5.4%
Residential Property Managers (531311)	2,261	2,301	16%	5.1%
Offices of Real Estate Agents and Brokers (531210)	1,717	1,751	4%	3.9%
Colleges, Universities, and Professional Schools (State Government) (902612)	1,477	1,536	14%	3.4%
Lessors of Residential Buildings and Dwellings (531110)	1,243	1,259	(3%)	2.8%
Janitorial Services (561720)	1,234	1,241	9%	2.8%
Colleges, Universities, and Professional Schools (611310)	999	1,025	12%	2.3%
Religious Organizations (813110)	1,001	1,016	6%	2.3%
Plumbing, Heating, and Air-Conditioning Contractors (238220)	856	863	9%	1.9%
Nonresidential Property Managers (531312)	768	771	19%	1.7%
Elementary and Secondary Schools (Local Government) (903611)	653	654	8%	1.5%
Lessors of Nonresidential Buildings (except Miniwarehouses) (531120)	581	594	0%	1.3%
Temporary Help Services (561320)	562	561	7%	1.2%
Corporate, Subsidiary, and Regional Managing Offices (551114)	454	470	8%	1.0%
Federal Government, Military (901200)	460	457	(2%)	1.0%
Local Government, Excluding Education and Hospitals (903999)	3,508	3,531	6%	7.9%

Source: *EMSI 2018.4*

**Table 6. Top Employers Posting Maintenance Technician Occupations in Bay and North Bay Sub-Region (Nov 2017 - Oct 2018)**

Employer	Bay	Employer	Bay	Employer	North Bay
Marriott International Incorporated	351	Cushman & Wakefield	55	Marriott International Incorporated	36
Google Inc.	111	John Stewart Company	55	McDonald's	24
McDonald's	91	Equity Residential	54	Interstate Hotels & Resorts	22
Avalonbay Communities Inc	84	United Parcel Service Inc	53	Comcast	15
The Home Depot Incorporated	70	Alliance Residential Co	52	State of California	15
Fpi Management	67	Eden Housing Incorporated	46	The Home Depot Incorporated	13
Autonation	65	Hyatt	41	Eden Housing Incorporated	12
Comcast	58	Interstate Hotels & Resorts	40	Hyatt	11

Maintenance Technician Occupations in 12 County Bay Region and in North Bay Sub-Region, 2018

Essex Property Trust	57	Hilton Hotel Corporation	39	Fpi Management	9
cbre	56	Sears	34	Sheraton	9

Source: Burning Glass

## Educational Supply

There are seven community colleges in the Bay Region issuing 16 awards annually on TOP 0956.00 - Manufacturing and Industrial Technology. There are no colleges in the North Bay sub-region issuing awards.

**Table 7. Awards on TOP 0956.00 - Manufacturing and Industrial Technology in the Bay Area**

College	Sub-Region	Headcount	Associates	Certificates	Total
<b>Chabot</b>	East Bay	433			
<b>DeAnza</b>	Silicon Valley	336	4	11	15
<b>Diablo Valley</b>	East Bay	43			
<b>San Francisco</b>	Mid-Peninsula			1	1
<b>San Jose City</b>	Silicon Valley	96			
<b>Santa Rosa</b>	North Bay	246			
<b>Solano</b>	North Bay	57			
<b>Total Bay Region</b>		<b>1,211</b>	<b>4</b>	<b>12</b>	<b>16</b>
<b>Total North Bay Sub-Region</b>		<b>303</b>	<b>-</b>	<b>-</b>	<b>-</b>

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 5,147 annual openings for the Maintenance Technician occupational cluster and 16 annual awards for an annual undersupply of 5,131 students. In the North Bay sub-region, there is also a gap with 795 annual openings and no annual award for an annual undersupply of 795 students.

## Student Outcomes

**Table 8. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 0956.00 - Manufacturing and Industrial Technology**

2015-16	Bay (All CTE Programs)	Solano College (All CTE Programs)	State (TOP 0956.00)	Bay (TOP 0956.00)	North Bay (TOP 0956.00)	Solano College (TOP 0956.00)
% Employed Four Quarters After Exit	75%	71%	77%	78%	79%	92%
Median Quarterly Earnings Two Quarters After Exit	\$13,996	\$7,671	\$9,658	\$11,088	\$8,498	\$10,241
Median % Change in Earnings	40%	57%	60%	60%	49%	n/a
% of Students Earning a Living Wage	63%	49%	67%	75%	64%	n/a

Source: Launchboard Pipeline (version available on 11/15/18)

## Skills, Certifications and Education

**Table 9. Top Skills for Maintenance Technician Occupations in Bay Region (Nov 2017 - Oct 2018)**

Skill	Postings	Skill	Postings	Skill	Postings
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Maintenance Technician Occupations in 12 County Bay Region and in North Bay Sub-Region, 2018

Repair	7,115	Machinery	695	Forklift Operation	378
Plumbing	3,774	Customer Contact	689	Wiring	378
Painting	2,522	Welding	629	Asset Protection	356
HVAC	2,476	Drywall	586	Boilers	356
Carpentry	2,259	Property Management	564	Furniture Moving	325
Predictive / Preventative Maintenance	1,897	Schematic Diagrams	529	Inventory Maintenance	323
Cleaning	1,860	Technical Support	517	Project Management	322
Customer Service	1,511	Electrical Systems	485	Equipment Repair	321
Scheduling	1,244	Appliance Repair	467	Equipment Maintenance	317
Hand Tools	1,098	Sales	452	Masonry	317
Power Tools	979	Safety Training	445	Plumbing Repairs	308
Lifting Ability	928	Test Equipment	438	Building Codes	302
Facility Maintenance	889	Apartment Maintenance	408	Electrical Work	302
Occupational Health and Safety	816	Laundry	404	Budgeting	296

Source: Burning Glass

**Table 10. Certifications for Maintenance Technician Occupations in the Bay Region (Nov 2017 - Oct 2018)**

Note: 61% 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	3,414	Leadership In Energy And Environmental Design (LEED) Certified	36
EPA CFC/HCFC Certification	160	Cisco Certified Network Associate (CCNA)	35
Environmental Protection Agency Certification	145	Electrician Certification	31
Certified A+ Technician	90	Security Clearance	31
Automotive Service Excellence (ASE) Certification	62	Certified Pool/Spa Operator	30
Forklift Operator Certification	59	Project Management Certification	29
Cdl Class C	53	CompTIA Network+	28
First Aid Cpr Aed	50	Microsoft Certified Professional (MCP)	26
CDL Class A	40	Epa 608	23
Cdl Class B	40	Building Maintenance	20
IT Infrastructure Library (ITIL) Certification	36	ITIL Certification	18

Source: Burning Glass

**Table 11. Education Requirements for Maintenance Technician Occupations in Bay Region**

Note: 58% 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	0 (0%)
Associate Degree	4,070 (91%)
Bachelor's Degree or Higher	5 (9%)

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 CCCCCO 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:

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