

# Fire Technology Occupations Labor Market Information Report Merritt College

Prepared by the San Francisco Bay Center of Excellence  
for Labor Market Research  
February 2019

## Recommendation

Based on all available data, there appears to be an undersupply of Fire Technology 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). The gap is about 233 students annually in the Bay region and about 18 students annually in the East Bay.

This report also provides student outcomes data on employment and earnings for programs on TOP 2133.00 - Fire 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 Merritt College and in the region.

## Introduction

This report profiles Fire Technology Occupations in the 12 county Bay region and in the East Bay sub-region for a proposed new program at Merritt College.

- **Firefighters (SOC 33-2011): Control and extinguish fires or** respond to emergency situations where life, property, or the environment is at risk. Duties may include fire prevention, emergency medical service, hazardous material response, search and rescue, and disaster assistance.  
*Entry-Level Educational Requirement: Postsecondary nondegree award*  
*Training Requirement: Long-term on-the-job training*  
*Percentage of Community College Award Holders or Some Postsecondary Coursework: 61%*
- **First-Line Supervisors of Fire Fighting and Prevention Workers (SOC 33-1021):** Directly supervise and coordinate activities of workers engaged in firefighting and fire prevention and control.  
*Entry-Level Educational Requirement: Postsecondary nondegree award*  
*Training Requirement: Moderate-term on-the-job training*  
*Percentage of Community College Award Holders or Some Postsecondary Coursework: 58%*
- **Fire Inspectors and Investigators (SOC 33-2021):** Inspect buildings to detect fire hazards and enforce local ordinances and State laws, or investigate and gather facts to determine cause of fires and explosions.  
*Entry-Level Educational Requirement: Postsecondary nondegree award*  
*Training Requirement: Moderate-term on-the-job training*  
*Percentage of Community College Award Holders or Some Postsecondary Coursework: 52%*

## Occupational Demand

**Table 1. Employment Outlook for Fire Technology 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
Firefighters	7,547	8,001	454	6%	2,967	593	\$20.21	\$40.73
First-Line Supervisors of Fire Fighting and Prevention Workers	697	757	60	9%	294	59	\$27.94	\$61.38
Fire Inspectors and Investigators	185	201	16	8%	111	22	\$31.30	\$57.34
<b>Total</b>	<b>8,428</b>	<b>8,958</b>	<b>530</b>	<b>6%</b>	<b>3,372</b>	<b>674</b>	<b>\$21.10</b>	<b>\$42.80</b>

Source: EMSI 2018.2

**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 Fire Technology Occupations in East 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
Firefighters	1,739	1,799	60	3%	633	127	\$30.94	\$45.71
First-Line Supervisors of Fire Fighting and Prevention Workers	115	120	6	5%	44	9	\$53.02	\$77.91
Fire Inspectors and Investigators	40	42	2	5%	22	4	\$36.03	\$53.43
<b>TOTAL</b>	<b>1,894</b>	<b>1,962</b>	<b>68</b>	<b>4%</b>	<b>699</b>	<b>140</b>	<b>\$32.38</b>	<b>\$47.82</b>

Source: EMSI 2018.2

**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 (Nov 2017 - Oct 2018)**

Occupation	Bay Region	East Bay
Municipal Firefighters (33-2011.01)	86	34
Forest Fire Fighting and Prevention Supervisors (33-1021.02)	20	0
Forest Firefighters (33-2011.02)	12	4
<b>Total</b>	<b>118</b>	<b>38</b>

Source: Burning Glass

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

Common Title	Bay	East Bay	Common Title	Bay	East Bay
Firefighter	69	29	Fire Technician		
Equipment Operator	6		Coordinator, Contract		
Leader	4		Customer Service Commander		
Medic	4	4	Fire Clean		
Technician	4	2	Fire Suppression Specialist/Technician		
Coordinator	3				
Incident Commander	3				

Source: Burning Glass

## Industry Concentration

**Table 5. Industries hiring Fire Technology 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)	7,752	7,808	6%	92.0%
Federal Government, Military (901200)	117	117	(2%)	1.4%
All Other Support Services (561990)	103	105	2%	1.2%
State Government, Excluding Education and Hospitals (902999)	99	100	7%	1.2%
Federal Government, Civilian, Excluding Postal Service (901199)	89	89	0%	1.0%
Convention and Trade Show Organizers (561920)	84	83	10%	1.0%

Source: EMSI 2018.4

**Table 6. Top Employers Posting Fire Technology Occupations in Bay Region and East Bay Sub-Region (Nov 2017 - Oct 2018)**

Employer	Bay	Employer	Bay	Employer	East Bay
US Army	19	Contra Costa County	2	US Army	15
Department Army	5	Daily Dispatch	2	Alameda County	2
National Testing Network	5	Guard Grabber Technologies Inc	4	Contra Costa County	2
Arup	3			Department Army	2
Capstone Fire & Safety Management	3	Aalgorithm	1	City Berkeley	1
City Redwood City	3	Alchemy Solutions Group	1	City Fremont	1
Restoration Management Company	3	Asian & Pacific Islander Wellness Center	1	City Oakland	1
State of California	3	Audubon Canyon Ranch Incorporated	1	Clayton Management	1
Alameda County	2	Bay Area Science Festival Organized By Ucsf	1	County Alameda	1
City Vallejo	2	Brightstar Media Organization	1	East Bay Regional Park District	1

Source: Burning Glass

## Educational Supply

There are 15 community colleges in the Bay Region issuing 441 awards annually on TOP 2133.00 - Fire Technology. There are three colleges issuing 122 awards annually in the East Bay sub-region.

**Table 7. Awards on TOP 2133.00 - Fire Technology in the Bay Region**

College	Sub-Region	Headcount	Associates	Certificates	Total
<b>Cabrillo</b>	Santa Cruz & Monterey	1,402	20	2	22
<b>Chabot</b>	East Bay	220	12	2	14
<b>Las Positas</b>	East Bay		10	11	21
<b>Foothill</b>	East Bay	273			
<b>Gavilan</b>	Santa Cruz & Monterey	213			
<b>Hartnell</b>	Santa Cruz & Monterey	593			
<b>Las Positas</b>	East Bay	202			
<b>Los Medanos</b>	East Bay		24	63	87
<b>Merritt</b>	East Bay	79			
<b>Mission</b>	Silicon Valley	425	27		27
<b>Monterey</b>	Santa Cruz & Monterey	653	2	2	4
<b>San Francisco</b>	Mid-Peninsula	348	14	56	70
<b>San Mateo</b>	Mid-Peninsula	286	24	23	47

<b>Santa Rosa</b>	North Bay	619	32	102	134
<b>Solano</b>	North Bay	183	10	5	15
<b>Total Bay Region</b>		<b>5,496</b>	<b>175</b>	<b>266</b>	<b>441</b>
<b>Total East Bay Sub-Region</b>		<b>774</b>	<b>46</b>	<b>76</b>	<b>122</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 labor market gap in the Bay region with 674 annual openings for the Fire Technology occupational cluster and 441 annual awards for an annual undersupply of 233 students. In the East Bay, there is a small gap with 140 annual openings and 122 annual awards for an annual undersupply of 18 students.

## Student Outcomes

**Table 8. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 2133.00 - Fire Technology**

2015-16	Bay (All CTE Programs)	Merritt College (All CTE Programs)	State (TOP 2133.00)	Bay (TOP 2133.00)	East Bay (TOP 2133.00)	Merritt College (TOP 2133.00)
% Employed Four Quarters After Exit	74%	70%	72%	85%	84%	97%
Median Quarterly Earnings Two Quarters After Exit	\$10,310	\$9,613	\$17,806	\$22,478	\$11,582	\$7,914
Median % Change in Earnings	46%	41%	30%	30%	48%	76%
% of Students Earning a Living Wage	63%	60%	71%	79%	79%	50%

Source: Launchboard Pipeline (version available on 11/6/18)

## Skills, Certifications and Education

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

Skill	Postings	Skill	Postings	Skill	Postings
Fire Protection	41	Cleaning	8	Telecommunications	6
Repair	26	Hydraulics	8	Basic Trauma Life Support (BTLS)	5
Fire Suppression	24	Medical Emergencies	7	Customer Service	5
Emergency Medical Care	22	Patient Care	7	Incident Command System	5
Equipment Operation	18	Prevention Activities	7	Network Testing	5
Emergency Services	17	Project Management	7	Public Health and Safety	5
HAZMAT	17	Scheduling	7	Trauma	5
Life Support	17	Training Programs	7	Algebra	4
Cardiopulmonary Resuscitation (CPR)	15	Chemistry	6	Heavy Lifting	4
Advanced Cardiac Life Support (ACLS)	11	Self-Contained Breathing Apparatus (SCBA)	6	Medical Coding	4

Source: Burning Glass

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

Note: 43% 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
Emergency Medical Technician (EMT)	49	Driver/Operator Mobile Water Supply	6
Driver's License	35	HazMat Operations	6
Firefighter	31	Security Clearance	6
Firefighter I	27	Fire Inspector I	5
Certified Patient Account Technician	19	HazMat Technician	5
Paramedic Certification	18	Hazardous Materials Technician	5
Firefighter II	13	Wildland Firefighter	5
National Registry of Emergency Medical Technicians (NREMT)	12	American Heart Association Certification	3
First Aid Cpr Aed	10	Fire Instructor I	3
Aerial Rescue and Fire Fighting (ARFF)	8	Medical Examiner's License	3
Driver/Operator Pumper	8	Asbestos Worker	2
Airport Firefighter	7	Basic Cardiac Life Support Certification	2

Source: Burning Glass

**Table 11. Education Requirements for Fire Technology Occupations in Bay Region**

Note: 54% 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	47 (87%)
Associate Degree	7 (13%)
Bachelor's Degree or Higher	0 (0%)

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 CCCC 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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