

Fire Technology Occupations Labor Market Information Report Chabot 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 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 127 students annually in the Bay region and 5 students annually in the East Bay Sub-Region.

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 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 Chabot 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 the review of an existing program at Chabot College.

- **First-Line Supervisors of Fire Fighting and Prevention Workers (SOC 33-1021):** Directly supervise and coordinate activities of workers engaged in fire fighting 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%
- **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%

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
First-Line Supervisors of Fire Fighting and Prevention Workers	697	757	60	9%	59	47	\$27.94	\$61.38
Fire Inspectors and Investigators	185	201	16	8%	22	19	\$31.30	\$57.34
Firefighters	7,547	8,001	454	6%	593	502	\$20.21	\$40.73
Total	8,428	8,958	530	6%	674	568	\$21.10	\$42.80

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 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
First-Line Supervisors of Fire Fighting and Prevention Workers	115	120	6	5%	9	8	\$53.02	\$77.91
Fire Inspectors and Investigators	40	42	2	5%	4	4	\$36.03	\$53.43
Firefighters	1,739	1,799	60	3%	127	115	\$30.94	\$45.71
TOTAL	1,894	1,962	68	4%	140	126	\$32.38	\$47.82

Source: EMSI 2018.4

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 (Jan 2018 - Dec 2018)

Occupation	Bay Region	East Bay
Fire Inspectors (33-2021.01)	148	52
Municipal Fire Fighting and Prevention Supervisors (33-1021.01)	122	32
Municipal Firefighters (33-2011.01)	106	40
Forest Fire Fighting and Prevention Supervisors (33-1021.02)	25	1
Forest Firefighters (33-2011.02)	14	4
Total	415	129

Source: Burning Glass

Table 4. Top Job Titles for Fire Technology Occupations for latest 12 months (Jan 2018 - Dec 2018)

Common Title	Bay	East Bay	Common Title	Bay	East Bay
Firefighter	77	34	Fighter	5	4
Battalion Chief	22	1	Fire Marshal	5	3
Fire Chief	20	6	Inspector	5	3
Alarm Inspector	19	5	Specialist	5	0
Fire Sprinkler Foreman	14	4	Deputy Chief Health Officer, Medical Imaging	4	0
Fire Inspector	11	6	Deputy Marshal	4	3
Damage Prevention Awareness Spc,Senior	10	3	Leader	4	0
Sprinkler/Inspector	8	7	Medic	4	4

Chief	7	0	Assistant Marshal	3	0
Fire Sprinkler Inspector	7	1	Be The Boss And Set Own Rate	3	0
Coordinator	6	0	Captain	3	2
Equipment Operator	6	0	Deputy Chief	3	1
Technician	6	2	Field Chief	3	0
Alarm Specialist	5	1	Fire Inspector I	3	2

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 and East Bay Sub-Region (Jan 2018 - Dec 2018)

Employer	Bay	Employer	Bay	Employer	East Bay
US Army	34	Amenify	3	US Army	22
State of California	24	Arup	3	Johnson Controls Inc	12
Johnson Controls Incorporated	17	Bay Alarm Company	3	City Fremont	9
Todd Morris Fire Protection	12	City Hayward	3	County Contra Costa	5
Pacific Gas and Electric Company	10	City Oakland	3	County Alameda	4
City Fremont	9	City Redwood City	3	Todd Morris Fire	4
Commercial Fire Protection Incorporated	8	City Sunnyvale	3	Alameda County	3
Daily Dispatch	8	Contra Costa County	3	City Oakland	3
County Contra Costa	5	County Of Monterey Auditor Controller	3	Contra Costa County	3
County Sonoma	5	Fiore Industries Incorporated	3	Pacific Gas and Electric Company	3
IBM	5	Hue & Cry, Inc	3	Stanley	3
National Testing Network	5	Presidio Incorporated	3	Bay Area Construction	2
Capstone Fire & Safety Management	4	Stanley	3	City Berkeley	2
City Vallejo	4	US Navy	3	City Hayward	2
County Alameda	4	Bay Alarm	2	Jr Wagner Fire Protection, Inc	2
Department Army	4	Bay Area Construction	2	Siemens	2
Restoration Management Company	4	Berkeley Turkish School	2	Tesla	2
Alameda County	3	California State University	2	Ares Corporation	1

Source: Burning Glass

Educational Supply

There are 10 community colleges in the Bay Region issuing 441 awards annually on TOP 2133.00 - Fire Technology. There are three colleges in the East Bay Sub-Region issuing 121 awards annually on this TOP code.

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

College	Sub-Region	TOP Code	Headcount	Associates	Certificates	Total
Cabrillo	Santa Cruz & Monterey	213300	1,402	20	1	21
Chabot	East Bay	213300	216	12	2	14
Gavilan	Santa Cruz & Monterey	213300	213			
Las Positas	East Bay	213300	202	10	11	21
Los Medanos	East Bay	213300	294	24	63	86
Mission	Silicon Valley	213300	420	27		27
Monterey	Santa Cruz & Monterey	213300	607	2	2	5
San Francisco	Mid-Peninsula	213300	348	14	56	70
San Mateo	Mid-Peninsula	213300	258	24	23	47
Santa Rosa	North Bay	213300	578	32	102	134
Solano	North Bay	213300	183	10	5	16
Total Bay Region			5,961	175	265	441
Total East Bay Sub-Region			863	46	76	121

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 568 annual openings for the Fire Technology occupational cluster and 441 annual awards for an annual undersupply of 127 students. In the East Bay Sub-Region, there is a small gap with 126 annual openings and 121 annual awards for an annual undersupply of 5 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)	Chabot College (All CTE Programs)	State (2133.00)	Bay (2133.00)	East Bay (2133.00)	Chabot College (2133.00)
% Employed Four Quarters After Exit	74%	74%	77%	85%	81%	89%
Median Quarterly Earnings Two Quarters After Exit	\$10,550	\$9,425	\$35,136	\$45,400	\$22,667	\$16,515
Median % Change in Earnings	46%	71%	37%	34%	55%	95%
% of Students Earning a Living Wage	63%	60%	68%	78%	70%	68%

Source: Launchboard Pipeline (version available on 1/16/19)

Skills, Certifications and Education

Table 9. Top Skills for Fire Technology Occupations in Bay Region (Jan 2018 - Dec 2018)

Skill	Postings	Skill	Postings	Skill	Postings
Fire Protection	165	Exercise Treadmill	25	Project Management	18
Repair	103	Spirometry	25	Life Support	16
Fire Suppression	81	Hand Tools	24	Customer Contact	15

Occupational Health and Safety	48	Public Health and Safety	24	Technical Training	15
Customer Service	42	Treadmill Test	24	Cleaning	14
Self-Contained Breathing Apparatus (SCBA)	39	Cardiopulmonary Resuscitation (CPR)	23	Wiring	14
Telecommunications	32	Emergency Medical Care	23	Chemistry	13
Budgeting	30	Schematic Diagrams	22	Inspection of Safety Equipment and/or Alarm Systems	13
HAZMAT	28	Staff Management	22	Power Tools	13
Scheduling	28	Training Programs	21	Prevention Activities	13
Emergency Services	26	Equipment Moving	20	Advanced Cardiac Life Support (ACLS)	12
Equipment Operation	26	Public administration	20	Safety Codes	12
Exercise Treadmill	25	Predictive / Preventative Maintenance	19	Claims Knowledge	11
Spirometry	25	Technical Inspections	19	Inspection Records	11
Fire Protection	165	Building Codes	18	Strategic Planning	11

Source: *Burning Glass*

Table 10. Certifications for Fire Technology Occupations in the Bay Region (Jan 2018 - Dec 2018)

Note: 40% 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	156	CDL Class D	9
Emergency Medical Technician (EMT)	61	American Heart Association Certification	8
Firefighter	41	Certified Financial Planner (CFP)	8
Firefighter I	33	Driver/Operator Pumper	8
Certified Patient Account Technician	23	NICET II	7
Paramedic Certification	21	Fire Officer III	6
Firefighter II	17	HazMat Operations	6
Fire Officer	15	Cdl Class C	5
National Registry of Emergency Medical Technicians (NREMT)	15	HazMat Incident Commander	5
Fire Inspector I	14	Hazardous Materials Technician	5
Aerial Rescue and Fire Fighting (ARFF)	13	Security Clearance	5
Airport Firefighter	12	Wildland Firefighter	5
Fire Inspector	12	Board Certified/Board Eligible	4
First Aid Cpr Aed	12	Care+ Certification	4
Driver/Operator Mobile Water Supply	11	HazMat Technician	4
Fire Inspector II	11	Medical Examiner's License	4
Contractors License	10	Asbestos Worker	3

Source: *Burning Glass*

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

Note: 59% 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	118 (69%)
Associate Degree	9 (5%)
Bachelor's Degree or Higher	44 (26%)

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/
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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