Fire Academy

Inland Empire/Desert Region (Riverside and San Bernardino counties)

Summary

Fire Academy
(TOP 2133.50)
Community College Program

→

Provides training for
3 Community College-level
Occupations

Over the next five years (2021-2026), community-college-level fire academy employment is projected to

Increase
Employment by
15%

416
Annual Job
Openings

Median Hourly Earnings
$30.75 to $49.12
Above the Hourly Living
Wage Standard ($21.82)

655 Total Annual Awards
In Fire Academy Programs

665
Program Awards from
Community College Programs

0
Program Awards from Other
Postsecondary Education Providers
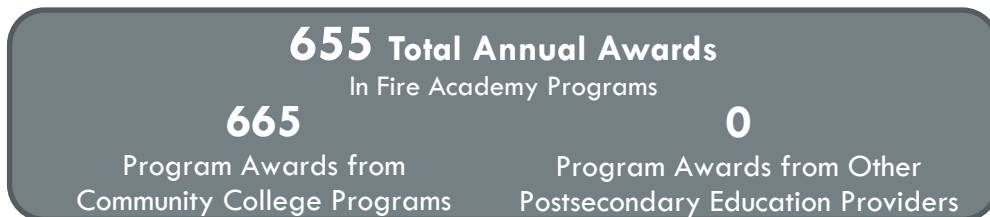
The Inland Empire/Desert Centers of Excellence
👍 **Recommends**
**Fire Academy Program Expansion
to meet the need for workers in the region**

Introduction

California Community College fire academy programs (TOP 2133.50) prepare students for employment through instruction related to the principles and techniques of preventing, controlling and extinguishing fires, including firefighter operations, maintenance of firefighting equipment, fire rescue procedures, and applicable laws and regulations (Taxonomy of Programs, 2012). The knowledge, skills, and abilities trained by fire academy programs lead to three distinct occupations, collectively referred to as the fire academy occupational group in this report.

- First-Line Supervisors of Firefighting and Prevention Workers (SOC 33-1021)
- Firefighters (33-2011)
- Fire Inspectors and Investigators (33-2021)

Job Counts and Projections

In 2021, the region had 3,593 total fire academy jobs. By 2026, employment is projected to increase by 15%; 416 job openings are expected annually due to the region's new job growth and replacement needs. Exhibit 1 displays the job counts, five-year projected job growth, openings, and the share of incumbent workers aged 55 years and older.

Exhibit 1: Five-year projections for the fire academy occupational group, Inland Empire/Desert Region, 2021-2026

Occupation	2021 Jobs	2026 Jobs	5-Yr % Change	5-Yr Openings (New + Replacement Jobs)	Annual Openings (New + Replacement Jobs)	% of workers age 55+
Firefighters	3,143	3,591	14%	1,788	358	7%
First-Line Supervisors of Firefighting and Prevention Workers	360	446	24%	231	46	20%
Fire Inspectors and Investigators	91	107	18%	62	12	27%
Total	3,593	4,144	15%	2,081	416	9%

Source: Lightcast 2023.1

An online job advertisement (ad) search for jobs in the fire academy occupational group revealed the employers seeking these workers, including the median posting duration, earnings information, and in-demand skills. Over the last 12 months, there were 149 job ads posted for the fire academy occupational group in the region.

Exhibit 2 shows the number of job ads posted during the last 12 months and the regional median posting duration for these jobs. Employers in the region spend approximately 31 days filling job ads. The average regional online job is open for 28 days, indicating that it may be more challenging for employers to fill fire academy jobs than other jobs.

Exhibit 2: Job ads and time to fill, Inland Empire/Desert Region, March 2022 through February 2023

| Occupation	Job Ads	Median Job Posting Duration (Days)
Firefighters	62	21
First-Line Supervisors of Firefighting and Prevention Workers	58	25
Fire Inspectors and Investigators	29	42
Total	149	31

Source: Lightcast 2023.1

Earnings

Community colleges should ensure their training programs lead to employment opportunities that provide a living wage. The MIT living wage calculator estimates that an individual must earn $21.82 per hour or $45,386 annually in California to be self-sufficient (Glasmeier, 2023).

Exhibit 3 displays the hourly earnings for the regional fire academy occupational group. The 10th percentile hourly earnings for first-line supervisors of firefighting and prevention workers and firefighters are between $22.82 and $35.99 per hour, above the living wage standard. The median hourly earnings for fire inspectors and investigators are above the living wage standard.

Exhibit 3: Hourly earnings by percentile for the fire academy occupational group, Inland Empire/Desert Region, 2021
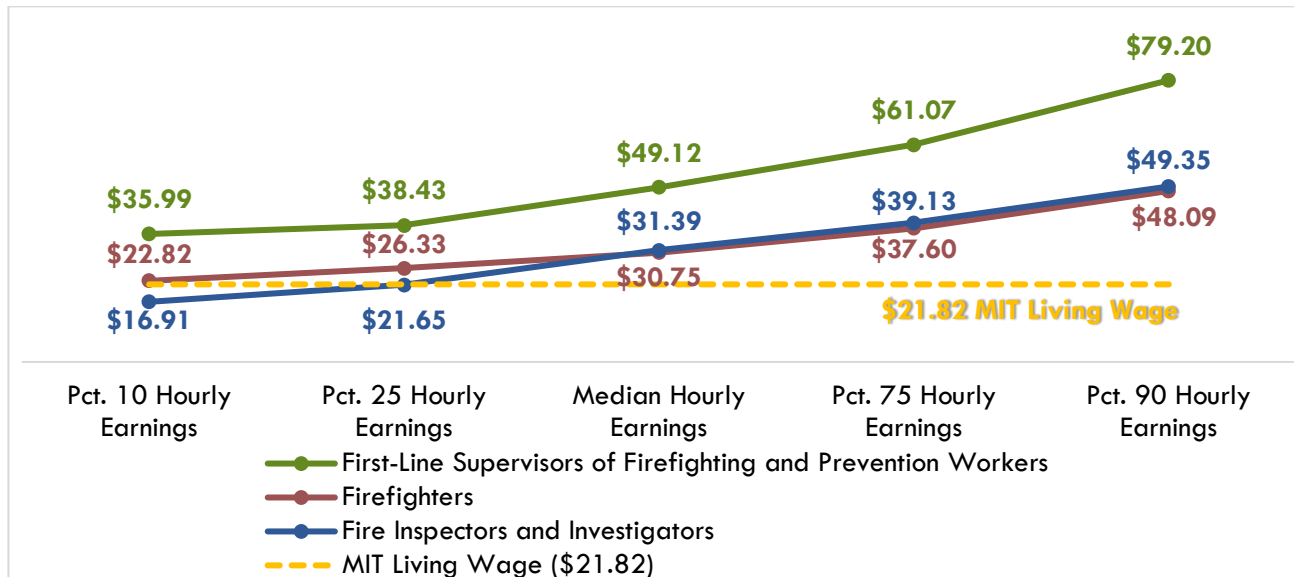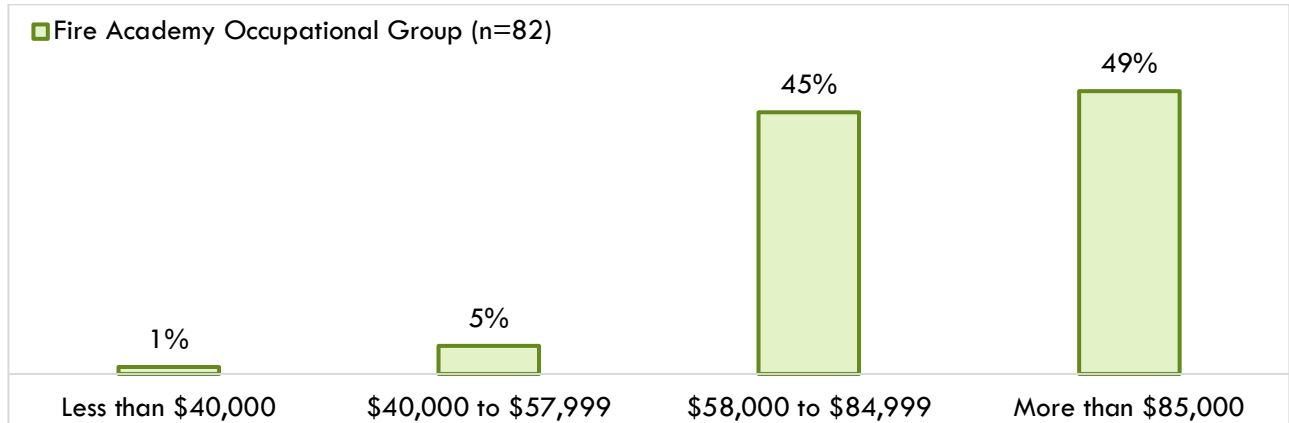

Source: Lightcast 2023.1

Advertised Salary from Online Job Ads

Exhibit 4 displays online job ad salary data for the fire academy occupational group over the last 12 months. Online job ad salary information reveals employers are willing to pay fire academy workers more than $84,700 annually, above the region's $45,386 annual ($21.82 hourly) living wage standard. Consider the salary information cautiously since only 55% (82 out of 149) of online job ads for these occupations provided salary information.

Exhibit 4: Advertised salary information, Inland Empire/Desert Region, March 2023 – February 2022

Source: Lightcast 2023.1

Job Titles, Employers, Skills, Education, and Work Experience

Exhibit 5 displays the job titles most frequently included in ads for the fire academy occupational group over the last 12 months. Displaying job titles may provide insight into the positions available to students after completing a program. The most frequently sought job title was firefighter/paramedic.

Exhibit 5: Job titles most frequently included in job ads for the fire academy occupational group, Inland Empire/Desert Region, March 2023 – February 2022

Job Title	Job Ads
Firefighters/Paramedics	35
Firefighters	16
Fire Chiefs	16
Fire Captains	10
Battalion Chiefs	9
Deputy Fire Chiefs	6
Master Firefighters	6
Fire Prevention Specialists	5
All other job titles	46
Total	**149**

Source: Lightcast 2023.1

Exhibit 6 displays the employers that posted the most job ads during the last 12 months. Showing employer names provides insight into where students may find employment after completing a program. The City of Hemet posted the most job ads for the fire academy occupational group in the region.

Exhibit 6: Employers posting the most job ads for the fire academy occupational group, Inland Empire/Desert Region, March 2023 – February 2022

Employers	Job Ads
City of Hemet	13
San Bernardino County	18
Riverside County	7
City of Redlands	7
Arrowbear Lake Fire Department	7
State of California	7
City of Cathedral	6
City of Victorville	6
City of Riverside	5
City of Rialto	5
All other employers	68
Total	**149**

Source: Lightcast 2023.1

Exhibit 7 lists a sample of specialized and employability skills employers seek for workers to fill positions in the fire academy occupational group. Specialized skills are occupation-specific skills that employers request for industry or job competency. Employability skills are foundational skills that transcend industries and occupations; this category is often referred to as "soft skills." The skills requested in job ads may be utilized to guide curriculum development.

Exhibit 7: Sample of in-demand skills from employer job ads, Inland Empire/Desert Region, March 2023 – February 2022

Specialized skills *(n=149)*	Employability skills
• Fire Prevention • Emergency Medical Services • Fire Science • Cardiopulmonary Resuscitation (CPR) • Fire Alarm Systems	• Communication Skills • Management • Writing • Driving Record • Planning

Source: Lightcast 2023.1

Exhibit 8 displays the minimum advertised education requirements for the fire academy occupational group. Approximately 69% of employers posting job ads for the fire academy occupational group sought candidates with a high school diploma or equivalent.

Exhibit 8: Minimum advertised education requirements for the fire academy occupational group, Inland Empire/Desert Region, March 2023 – February 2022.

Fire Academy Occupational Group (n=94)

Bachelor's degree	19%
Associate degree	12%
High school or GED	69%
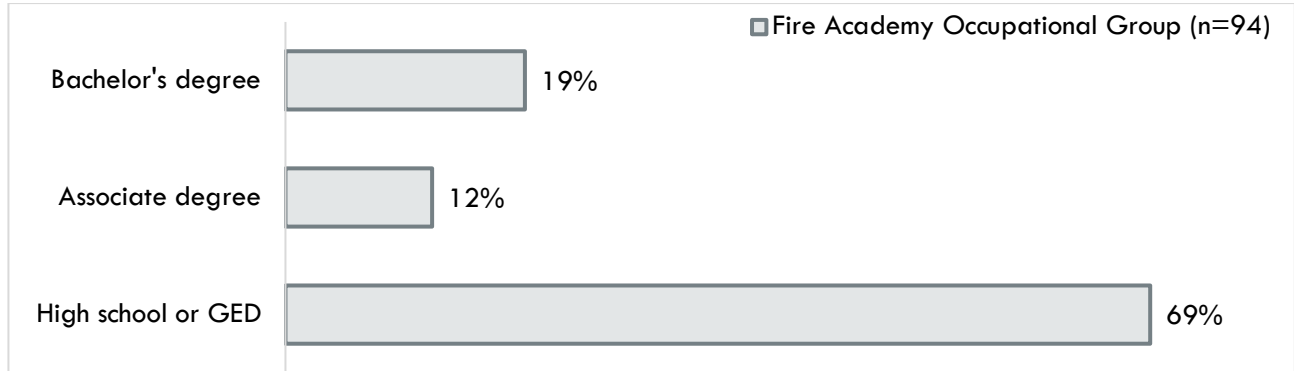
Source: Lightcast 2023.1

Exhibit 9 displays the real-time work experience requirements from employer job ads. Only 44% of employer job ads included experience requirements. Of job ads with experience requirements, approximately 40% were posted for candidates with four or more years of experience, and 35% were posted for candidates with zero to one year of previous work experience.

Exhibit 9: Real-time work experience requirements, Inland Empire/Desert Region, March 2023 – February 2022

Fire Academy Occupational Group (n=65)

0 to 1 year	2 to 3 years	4+ years
35%	25%	40%
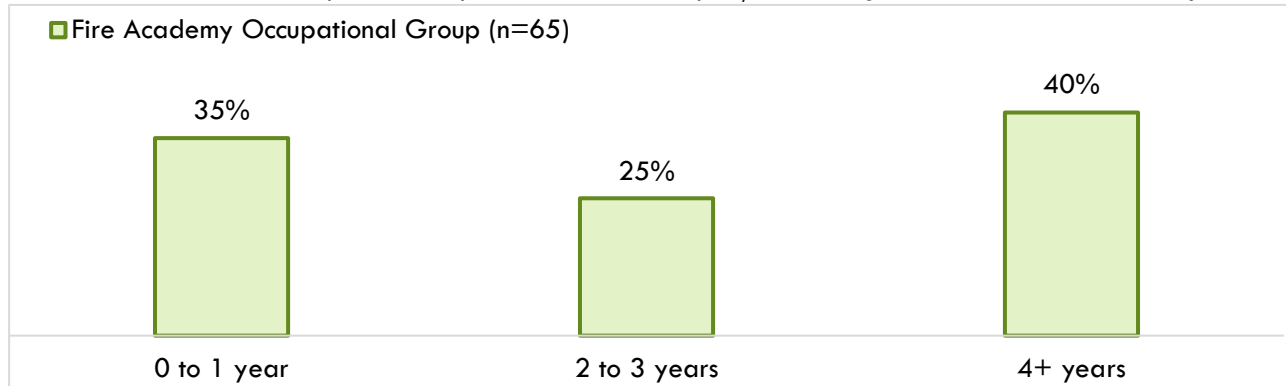
Source: Lightcast 2023.1

Certifications

Exhibit 10 displays the certifications most frequently requested by employers in job ads for the fire academy occupational group. Approximately 31% of employer job ads sought candidates with the Firefighter I certification. This certification is issued by the California Office of the State Marshall and requires that candidates complete the Firefighter I academic training and certification exam (California Office of the State Fire Marshal, 2023). For more information regarding firefighter certifications, please visit the California State Fire Marshal website.

Exhibit 10: Certifications most frequently required by employers, Inland Empire/Desert Region, March 2022 through February 2023

Certification	Jobs Ads
Firefighter 1 Certification	46
Paramedic (EMT-P)	40
Advanced Cardiovascular Life Support (ACLS) Certification	32

Source: Lightcast 2023.1

Student Completions and Programs Outcomes

Regional community colleges use two program codes for their fire programs; fire technology (TOP 2133.00) and fire academy (2133.50). Combined, regional community colleges have issued 655 awards annually in fire programs.

Fire Technology (2133.00): Principles and techniques of preventing, controlling and extinguishing fires, including firefighter operations, maintenance of firefighting equipment, fire rescue procedures, and applicable laws and regulations (Taxonomy of Programs, 2012).

Fire Academy (2133.50): Studies specific to local and state training requirements for employment and post-employment advancement (Taxonomy of Programs, 2012).

Exhibits 11 and 12 display student completions for fire technology (TOP 2133.00) and fire academy (2133.50) programs. Program completion and student outcome methodologies can be found in the appendix.

Exhibit 11: Annual average community college awards for fire technology programs, Inland Empire/Desert Region, Academic Years 2019-2022

TOP 2133.00 – Fire Technology (Local Program Title)	Academic Year 2019-20	Academic Year 2020-21	Academic Year 2021-22	Total CC Annual Average Awards, Academic Years 2019-22
Chaffey College (Fire Prevention Inspector, Fire Technology: Professional Firefighter)				**46**
Associate Degree	24	25	31	27
Certificate 30 < 60 semester units	0	1	0	0
Certificate 16 < 30 semester units	25	19	12	19
Copper Mountain College (Fire Technology)				**4**
Associate Degree	2	4	2	3
Certificate 16 < 30 semester units	2	2	0	1

TOP 2133.00 – Fire Technology (Local Program Title)	Academic Year 2019-20	Academic Year 2020-21	Academic Year 2021-22	Total CC Annual Average Awards, Academic Years 2019-22
Crafton Hills College (Fire Technology)				**17**
Associate Degree	11	17	24	17
College of the Desert (Fire Technology)				**13**
Associate Degree	8	5	13	9
Certificate 16 < 30 semester units	7	7	0	5
Moreno Valley College (Chief Officer, Fire Officer, Fire Service Leadership, Fire Technology)				**45**
Associate Degree	7	27	27	20
Certificate 16 < 30 semester units	13	31	29	24
Mt. San Jacinto College (Fire Technology)				**17**
Associate Degree	12	8	17	12
Certificate 16 < 30 semester units	8	3	3	5
Palo Verde College (Fire Science Technology, Fire Technology, Fire Science: Leadership, Aircraft Rescue Firefighting, Chief Officer, Company Officer, Fire Apparatus Driver/Operator, Fire Command, Fire Inspector I, Fire Inspector II, Fire Investigator I, Hazardous Materials Specialist, Instructor, Technical Rescue)				**0**
Associate Degree	0	0	0	0
Certificate 30 < 60 semester units	0	0	0	0
Victor Valley College (All Risk Firefighter, Basic Firefighter, Fire Prevention Officer, Fire Technology, IFSAC/Pro-Board I, Intermediate Firefighter, Introduction to Firefighting, Urban Search and Technical Rescue)				**355**
Associate Degree	30	11	20	20
Certificate 60+ semester units	0	0	1	0
Certificate 16 < 30 semester units	130	193	203	175
Certificate 8 < 16 semester units	130	151	195	159
Total	**409**	**504**	**577**	**497**

Source: MIS Data Mart, COCI

Exhibit 12: Annual average community college awards for fire academy programs, Inland Empire/Desert Region, Academic Years 2019-2022

TOP 2133.50 – Fire Academy (Local Program Title)	Academic Year 2019-20	Academic Year 2020-21	Academic Year 2021-22	Total CC Annual Average Awards, Academic Years 2019-22
Crafton Hills College (Firefighter 1 Basic Training Academy)				**58**
Certificate 8 < 16 semester units	60	57	56	58
College of the Desert (Basic Fire Fighter)				**7**
Certificate 16 < 30 semester units	20	0	0	7
Moreno Valley College (Firefighter Academy)				**91**
Associate Degree	18	15	24	19
Certificate 16 < 30 semester units	71	60	86	72
Victor Valley College (Fire Fighter)				**3**
Certificate 30 < 60 semester units	4	3	2	3
Total	**173**	**135**	**168**	**159**

Source: MIS Data Mart, COCI

California program outcome data may provide useful insight into the likelihood of success for the proposed program. Community college student outcome information based on the selected TOP code and region is provided in Exhibits 13 and 14.

Exhibit 13: 2133.00 – Fire technology strong workforce program outcomes, Inland Empire/Desert Region, Academic Year 2019-2020 (Unless Noted)

Strong Workforce Program Metrics: 2133.00 – Fire Technology	Inland Empire/Desert Region	California
Unduplicated count of enrolled students (2020-21)	3,407	30,678
Completed 9+ career education units in one year (2020-21)	23%	25%
Students who completed a noncredit CTE or workforce preparation course (2020-21)	73%	58%
Students who earned a degree, certificate, or attained apprenticeship (2020-21)	221	1,946
Transferred to a four-year institution (transfers)	42	329
Job closely related to the field of study (2018-19)	71%	72%
Median annual earnings (all exiters)	$61,760	$53,048
Median change in earnings (all exiters)	26%	39%
Attained a living wage (completers and skills-builders)	74%	66%

Sources: LaunchBoard Community College Pipeline and Strong Workforce Program Metrics

Exhibit 14: 2133.50 – Fire academy strong workforce program outcomes, Inland Empire/Desert Region, Academic Year 2019-2020 (Unless Noted)

Strong Workforce Program Metrics: 2133.50 – Fire Academy	Inland Empire/Desert Region	California
Unduplicated count of enrolled students (2020-21)	447	5,208
Completed 9+ career education units in one year (2020-21)	53%	44%
Students who completed a noncredit CTE or workforce preparation course (2020-21)	-	57%
Students who earned a degree, certificate, or attained apprenticeship (2020-21)	128	1,443
Transferred to a four-year institution (transfers)	-	73
Job closely related to the field of study (2018-19)	79%	85%
Median annual earnings (all exiters)	$104,624	$88,602
Median change in earnings (all exiters)	34%	39%
Attained a living wage (completers and skills-builders)	88%	78%

Sources: LaunchBoard Community College Pipeline and Strong Workforce Program Metrics

Other postsecondary institutions may utilize fire science/fire-fighting CIP code (43.0203) for their fire academy programs. No other regional postsecondary education issued awards using this program code over the last three academic years institution. The following is the program description for fire science/fire-fighting CIP programs.

A program focusing on the theory and practice of fires and fire-fighting. Includes instruction in fire chemistry and physics, combustible materials, computer science, building construction, fire codes and related laws, fire hydraulics, fire command, fire prevention/inspection, fire protection systems, fire suppression systems, fire/arson investigation, occupational safety, equipment operation, emergency medicine and communications. (IPEDS, 2023).

Summary of Findings

Community college fire academy programs provide the knowledge, skills, and abilities that prepare students for employment in three community college-level occupations. The fire academy occupational group is expected to have 416 annual job openings through 2026, increasing employment by 15%. The 10th percentile hourly earnings for first-line supervisors of firefighting and prevention workers and firefighters are between $22.82 and $35.99 per hour, above the living wage standard. The median hourly earnings for fire inspectors and investigators are above the living wage standard.

Regional community colleges have issued a combined total of 655 awards annually in fire technology (TOP 2133.00) and fire academy (2133.50) programs over the previous three academic years (2019-22). No other regional postsecondary educational institutions issued awards related to fire academy training over the last three academic years. Please note, students exiting program may earn an associate degree and multiple

certificates. This likely indicates that fewer than 655 students are exiting firefighter programs than the total count suggests. An annual average of 127 combined associate degrees in the fire technology (TOP 2133.00) and fire academy (2133.50) programs.

The COE recommends developing a fire academy program to meet the need for more regional firefighters. Colleges considering this program should partner with applicable employers to document their demand for more workers in this field.

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Appendix: Occupation definitions, sample job titles, five-year projections, and earnings for fire academy occupations

Occupation Definitions (SOC code), Education and Training Requirements, Community College Education Attainment

First-Line Supervisors of Firefighting and Prevention Workers (33-1021)

Directly supervise and coordinate activities of workers engaged in firefighting and fire prevention and control.

Sample job titles: Engine Boss, Fire Battalion Chief, Fire Captain, Fire Chief, Fire Lieutenant, Fire Marshal, Fire Prevention Chief, Fire Suppression Captain, Forest Fire Specialist Supervisor, Section Forest Fire Warden

Entry-Level Educational Requirement: Postsecondary nondegree award
Training Requirement: Between one- and twelve-months on-the-job training
Work Experience: Less than five years
Incumbent workers with a Community College Award or Some Postsecondary Coursework: 53%

Firefighters (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.

Sample job titles: Fire Engineer, Fire Equipment Operator, Fire Fighter, Fire Management Specialist, Fire Technician (Fire Tech), Firefighter, Forest Fire Suppression Specialist, Forestry Fire Technician (Forestry Fire Tech), Hot Shot, Wildland Firefighter

Entry-Level Educational Requirement: Postsecondary nondegree award
Training Requirement: More than twelve-months on-the-job training
Work Experience: None
Incumbent workers with a Community College Award or Some Postsecondary Coursework: 60%

Fire Inspectors and Investigators (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.

Sample job titles: Arson Investigator, Fire Code Inspector, Fire Inspector, Fire Investigator, Fire Official, Fire Prevention Inspector, Fire Prevention Specialist, Fire Protection Specialist, Fire Safety Inspector, Fire Safety Specialist

Entry-Level Educational Requirement: Postsecondary nondegree award
Training Requirement: Between one- and twelve-months on-the-job training

Work Experience: Five years or more

Incumbent workers with a Community College Award or Some Postsecondary Coursework: 47%

Appendix: Methodology

Exhibits 11 and 12 display the average annual California Community College (CCC) awards conferred during the three academic years between 2019 and 2022 from the California Community Colleges Chancellor's Office Management Information Systems (MIS) Data Mart. Awards are the combined total of associate degrees and certificates issued during the timeframe, divided by three to calculate an annual average. This is done to minimize the effect of atypical variations that might be present in a single year.

Community college student outcome information is from LaunchBoard and is based on the selected TOP code and region. These metrics are based on records submitted to the California Community Colleges Chancellor's Office Management Information Systems (MIS) by community colleges, which come from self-reported student information from CCC Apply and the National Student Clearinghouse. Employment and earnings metrics are sourced from California's Employment Development Department's Unemployment Insurance database records. When available, outcomes for completers are reported to demonstrate the impact that earning a degree or certificate can have on employment and earnings. For more information on the types of students included for each metric, please see the link for LaunchBoard's Strong Workforce Program Metrics Data Element Dictionary in the References section (LaunchBoard, 2023a). Finally, employment in a job closely related to the field of study comes from self-reported student responses on the CTE Employment Outcomes Survey (CTEOS), administered by Santa Rosa Junior College (LaunchBoard, 2023a).

Job ad data is limited to the information provided by employers and the ability of artificial intelligence search engines to identify this information. Additionally, preliminary calculations by Georgetown Center on Education and the Workforce found that "just 30 to 40 percent of openings for candidates with some college or an associate degree, and only 40 to 60 percent of openings for high school diploma holders appear online" (Carnevale et al., 2014). Online job ads often do not reveal employers' hiring intentions; it is unknown if employers plan to hire one or multiple workers from a single online job ad or collect resumes for future hiring needs. A closed job ad may not be the result of a hired worker.