



Fire Academy

September 2017

Prepared by the Los Angeles/Orange County Center of Excellence for Labor Market Research

Occupation Codes and Descriptions

Currently, there is one occupation in the standard occupational classification (SOC) system related to the study of fire academy, and two emerging occupations in the O*NET¹ database of occupational information. The occupation titles and descriptions, as well as reported job titles are included in Exhibit 1.

Exhibit 1 – Occupations, descriptions and sample job titles

| SOC Code | Title | Description | Sample of Reported Job Titles |
|------------|------------------------|--|--|
| 33-2011 | Firefighters | 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. | Refer to Municipal Firefighters and Forest Firefighters |
| 33-2011.01 | Municipal Firefighters | Control and extinguish municipal fires, protect life and property and conduct rescue efforts. | Apparatus Operator, Fire Captain, Fire Chief, Fire Engineer, Fire Equipment Operator, Fire Fighter, Firefighter, Fireman, Safety Officer, Volunteer Firefighter |
| 33-2011.02 | Forest Firefighters | Control and suppress fires in forests or vacant public land. | Engine Boss, Fire Fighter, Fire Technician, Firefighter, Forest Fire Warden, Forest Ranger, Forest Ranger Technician, Forestry Technician (Fire), Squad Boss, Wildland Firefighter |

Source: O*NET Online

Current and Future Employment

In Los Angeles County, the number of firefighting jobs is expected to increase by 5% over the next five years. More than 300 job opportunities will be available annually for this occupation through 2021

¹ New and emerging occupations (N&E) are incorporated into the O*NET-SOC classification system based on the evolving nature of workforce requirements stemming from changes in technology, society, law, and business practices. Incorporating N&E occupations into the O*NET system makes O*NET information more beneficial and responsive. <https://www.onetcenter.org/reports/NewEmerging.html>

due to new job growth and replacement need (e.g., retirements). Exhibit 2 contains detailed employment projections data for these occupations.

Exhibit 2 – Five-year projections for firefighters in Los Angeles County

| SOC | Occupation | 2016 Jobs | 2021 Jobs | 2016 - 2021 Change | 2016 - 2021 % Change | Annual Openings |
|---------|--------------|-----------|-----------|--------------------|----------------------|-----------------|
| 33-2011 | Firefighters | 8,280 | 8,653 | 373 | 5% | 319 |

Source: Economic Modeling Specialists International (EMSI)

Earnings

In Los Angeles County, the entry-level average wage for firefighters is \$27.12 per hour, which is above the MIT Living Wage² estimate of \$13.08 per hour for a single adult. The average annual earnings for this occupation in the region is \$79,123 per year, assuming full-time employment.

Exhibit 3 contains hourly wages and annual average earnings for this occupation. Entry-level hourly earnings is represented by the 10th percentile of wages, median hourly earnings is represented by the 50th percentile of wages, and experienced hourly earnings is represented by the 90th percentile of wages, demonstrating various levels of employment.

Exhibit 3 – Earnings for firefighters in Los Angeles County, 2016

| SOC | Occupation | Entry-Level Hourly Earnings | Median Hourly Earnings | Experienced Hourly Earnings | Average Annual Earnings |
|---------|--------------|-----------------------------|------------------------|-----------------------------|-------------------------|
| 33-2011 | Firefighters | \$27.12 | \$36.22 | \$53.51 | \$79,123 |

Source: Economic Modeling Specialists International (EMSI)

Employer Job Postings

In this research brief, real-time labor market information is used to provide a more nuanced view of the current job market, as it captures job advertisements for occupations relevant to the field of study. Employer job postings are consulted to understand who is employing firefighters, and what they are looking for in potential candidates. To identify job postings related to firefighters, the following keywords/search terms were used: municipal firefighters (33-2011.01), forest firefighters (33-2011.02)

² MIT Living Wage Calculator. <http://livingwage.mit.edu/>

Top Occupations

In 2016, there were 52 employer postings for firefighters. Nearly all of the postings (92%) were for municipal firefighters (48 job postings). There were 48 job postings for the same occupations in 2015, and 38 job postings in 2014.

Exhibit 4 – Top occupations in job postings (n=52)

| SOC Code | Occupation | Job Postings, Full Year 2016 |
|-----------------|------------------------|---|
| 33-2011.01 | Municipal Firefighters | 48 |
| 33-2011.02 | Forest Firefighters | 4 |

Source: Labor Insight/Jobs (Burning Glass)

Top Titles

The top job titles for employers posting ads for firefighters are listed in Exhibit 5. Firefighter is mentioned as the job title in 69% of all relevant job postings (36 postings).

Exhibit 5 –Job titles (n=52)

| Title | Job Postings, Full Year 2016 |
|-------------------------|---|
| Firefighter | 36 |
| Call Fire Fighter | 3 |
| Fire Fighter Specialist | 2 |

Source: Labor Insight/Jobs (Burning Glass)

Top Employers

Exhibit 6 lists the major employers hiring professionals in the field of firefighters. Top employers postings job ads included County of Los Angeles, City of South Pasadena, and City of Downey. The top worksite cities in the region for these occupations were Los Angeles, Downey, Burbank, El Segundo, and South Pasadena.

Exhibit 6 – Top employers (n=37)

| Employer | Job Postings, Full Year 2016 |
|------------------------|---|
| County of Los Angeles | 6 |
| City of South Pasadena | 3 |
| City of Downey | 3 |

Source: Labor Insight/Jobs (Burning Glass)

Certifications and Skills

Emergency medical technician (EMT) is the most sought after certification for this occupation, and was included on 82% of the postings that specified a certification. Other certifications that were largely

present on postings were firefighter (61% of postings) and certified patient account technician (33%). Job-specific skills desired by employers are inspection, fire suppression, CPR, and fire protection.

Exhibit 7 –Job certifications (n=39) and job skills (n=36)

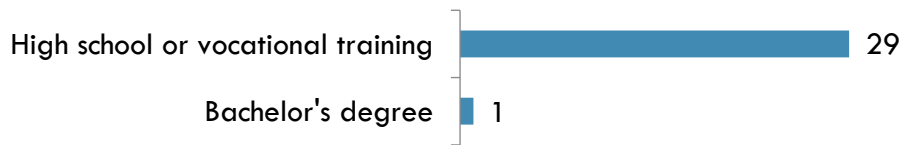
| Certification | Job Postings, Full Year 2016 | Skills | Job Postings, Full Year 2016 |
|--------------------------------------|------------------------------|-------------------------------------|------------------------------|
| Emergency Medical Technician (EMT) | 32 | Inspection | 15 |
| Firefighter | 24 | Fire Suppression | 13 |
| Certified Patient Account Technician | 13 | Cardiopulmonary Resuscitation (CPR) | 9 |
| Paramedic Certification | 9 | Fire Protection | 8 |

Source: Labor Insight/Jobs (Burning Glass)

Advertised Education Levels

Exhibit 8 displays the education level requested by employers in online job ads. The majority of employers were looking for a candidate with high school or vocational training. Approximately 42% of job postings did not specify a level of education.

Exhibit 8 – 2016 Online job ads with minimum advertised education requirements for firefighters (n=30)



Source: Labor Insight/Jobs (Burning Glass)

Industry Concentration

Firefighting jobs in Los Angeles County are most often found in the local government, excluding education and hospitals industry (95% of total jobs in the industry). Exhibit 9 shows the industries that are the largest employers of firefighters in Los Angeles County.

Exhibit 9 – Industries with the largest number of firefighters, 2016

| NAICS (6-Digit) | Industry | Occupation Group Jobs in Industry | % of Occupation Group in Industry |
|----------------------------|---|--|--|
| 903999 | Local Government, Excluding Education and Hospitals | 7,902 | 95% |
| 561990 | All Other Support Services | 106 | 1% |
| 901199 | Federal Government, Civilian, Excluding Postal Service | 54 | 1% |

Source: Economic Modeling Specialists International (EMSI)

Education and Training

Exhibit 10 shows the typical entry-level education requirement for the occupations of interest, along with the typical on-the-job training, and percentage of workers in the field who hold a community college award or have completed some postsecondary courses. About 64% of the workforce in this occupation has completed some community college education as their highest level of education, signaling that this occupation is relevant for community college students.

Exhibit 10 – Education and training requirements, 2016

| SOC | Occupation | Typical entry- level education | Typical on-the- job training | % of Community College Award Holders or Some Postsecondary Coursework |
|------------|-------------------|---|---|--|
| 33-2011 | Firefighters | Postsecondary nondegree award | Long-term on- the-job training | 64% |

Source: Economic Modeling Specialists International, Bureau of Labor Statistics Employment Projections (Educational Attainment)

Currently, there are six community colleges in Los Angeles County that train students in the Fire Academy program. Exhibit 11 displays the headcount and annual average community college awards for each of the colleges training in this field. Headcount is the actual number of students enrolled, regardless of credit hours. It is also important to note that an award is not equivalent to a single person in search of a job opening, since a student may earn more than one award (e.g. an associate degree and a certificate).

Between 2012-2015, the total annual average community college awards conferred was 19 (19 certificates) across one program: Fire Academy (2133.50)

Exhibit 11 – CCC Student Awards (by TOP and College)

| 2012 – 2015 Annual Average | | | | | | |
|----------------------------|--------------|----------------|---------------|-----------------------|------------------|-------------------------|
| TOP Code | Program | College | CCC Headcount | CCC Associate Degrees | CCC Certificates | Total Average CC Awards |
| 2133.50 | Fire Academy | East LA | N/A | N/A | 18 | 18 |
| | | El Camino | 66 | N/A | 1 | 1 |
| | | Glendale | 109 | N/A | N/A | N/A |
| | | Mt San Antonio | 60 | N/A | N/A | N/A |
| | | Pasadena | 74 | N/A | N/A | N/A |
| | | Rio Hondo | 72 | N/A | N/A | N/A |
| Total | | | 381 | N/A | 19 | 19 |

Source: California Community Colleges Chancellor's Office MIS Data Mart

Student Outcomes

The CTE LaunchBoard provides student outcome data on the effectiveness of CTE programs. The following student outcome information was collected from exiters of the Fire Academy Program (TOP code 2133.50) in Los Angeles County for the 2013 to 2014 academic year.

- The median annual wage after program completion is \$27,910
- 53% of students are earning a living wage
- 87% of students are employed within six months after completing a program

Source: CTE LaunchBoard

Program Recommendation

This report was compiled by the Los Angeles/Orange County Center of Excellence to provide regional labor market data for the program recommendation of Fire Academy. This report is to help determine whether there is demand in the local labor market that is not being met by the supply from programs of study (CCC and non-CCC) that align with this occupation group.

Based on the data, the COE recommends the Fire Academy program in the Los Angeles County region. Reasons include:

- Over the next five years, firefighter positions are expected to increase by 5%, resulting in over 300 annual openings.
- On average, only 19 awards are conferred each year for the program Fire Academy (2133.50).
- Among all the firefighters, 64% of the workforce has completed some postsecondary coursework, signaling that these positions are relevant for community college students.

Sources

O*Net Online, Labor Insight/Jobs (Burning Glass), Economic Modeling Specialists International (EMSI), MIT Living Wage Calculator, Bureau of Labor Statistics (BLS) Education Attainment, California Community Colleges Chancellor's Office Management Information Systems (MIS) Data Mart, CTE LaunchBoard, Statewide CTE Outcomes Survey, Employment Development Department Unemployment Insurance Dataset

Lori Sanchez, Director

Center of Excellence, Los Angeles/Orange County

Notes

Data included in this analysis represents the labor market demand for positions most closely related to firefighters. Standard occupational classification (SOC) codes were chosen based on the national education level required for employment (associate degree and postsecondary certificate) as well as the proportion of current workers who hold a community college award or have had some community college training. This selection process narrows the labor market analysis to the most relevant employment opportunities for students with community college education and/or training.

Traditional labor market information was used to show current and projected employment based on data trends, as well as annual average awards granted by regional community colleges. Real-time labor market information captures job post advertisements for occupations relevant to the field of study and should not be used to establish current job openings, because the numbers may include duplicate job postings or postings intended to gather a pool of applicants. Real-time labor market information can signal demand and show what employers are looking for in potential employees, but is not a perfect measure of the quantity of open positions.