**Testing, Adjusting and Balancing Occupations**

**Labor Market Information Report**

**Foothill College**

Prepared by the San Francisco Bay Center of Excellence

for Labor Market Research

March 2020

# Recommendation

Based on all available data, there appears to be an undersupply of Testing, Adjusting and Balancing workers compared to the demand for this cluster of occupations in the Bay region and in the Silicon Valley sub-region (Santa Clara County). There is a projected annual gap of about 1,039 students in the Bay region and 56 students in the Silicon Valley Sub-Region.

This report also provides student outcomes data on employment and earnings for programs on TOP 0946.10 - Energy Systems 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 Foothill College and in the region.

# Introduction

This report profiles Testing, Adjusting and Balancing Occupations in the 12 county Bay region and in the Silicon Valley sub-region for a program modification at Foothill College.

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| --- |
| * **Heating, Air Conditioning, and Refrigeration Mechanics and Installers (SOC 49-9021**): Install or repair heating, central air conditioning, or refrigeration systems, including oil burners, hot-air furnaces, and heating stoves.
 |
| 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: 42% |
|  |
| * **Metal-Refining** **Furnace Operators and Tenders (SOC 51-4051):** Operate or tend furnaces, such as gas, oil, coal, electric-arc or electric induction, open-hearth, or oxygen furnaces, to melt and refine metal before casting or to produce specified types of steel. Excludes “Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic" (51-4191).
 |
| 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: 26%* |
|  |

# Occupational Demand

**Table 1. Employment Outlook for Testing, Adjusting and Balancing Occupations in Bay Region**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Occupation  | 2018 Jobs | 2023 Jobs | 5-Yr Change | 5-Yr % Change | 5-Yr Open-ings | Average Annual Open-ings | 25% Hourly Wage | Median Hourly Wage |
| Heating, Air Conditioning, and Refrigeration Mechanics and Installers |  8,012  |  9,046  | 1,034 | 13% |  5,192  |  1,038  | $20.36 | $27.98 |
| Metal-Refining Furnace Operators and Tenders |  133  |  133  | 0 | 0% |  86  |  17  | $16.91 | $18.97 |
| **Total** |  **8,146**  |  **9,179**  | **1,034** | **13%** |  **5,278**  |  **1,056**  | **$20.30** | **$27.84** |

*Source: EMSI 2019.4*

**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 Testing, Adjusting and Balancing Occupations in Silicon Valley Sub-Region**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Occupation  | 2018 Jobs | 2023 Jobs | 5-Yr Change | 5-Yr % Change | 5-Yr Open-ings | Average Annual Open-ings | 25% Hourly Wage | Median Hourly Wage |
| Heating, Air Conditioning, and Refrigeration Mechanics and Installers |  580  |  613  | 33 | 6% |  326  |  65  | $20.04 | $28.16 |
| Metal-Refining Furnace Operators and Tenders |  <10  |  10  |  |  |  <10  |  Insf. Data  | Insf. Data | Insf. Data |
| **TOTAL** |  **580**  |  **623**  | **43** | **7%** |  **326**  |  **65**  | **$20.04** | **$28.16** |

*Source: EMSI 2019.4*

**Silicon Valley Sub-Region** includes Santa Clara County

# Educational Supply

There are five (5) community colleges in the Bay Region issuing 17 awards on average annually (last 3 years) on TOP 0946.10 - Energy Systems Technology. There is one college in the Silicon Valley Sub-Region issuing nine (9) awards on average annually (last 3 years) on this TOP code.

**Table 7. Awards on TOP 0946.10 - Energy Systems Technology in Bay Region**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| College | Sub-Region | Associates | Certificate 18+ Units | Certificate Low Unit | Total |
| Cabrillo College  | Santa Cruz-Monterey |  1  |  1  |  |  2  |
| De Anza College  | Silicon Valley |  2  |  2  |  5  |  9  |
| Diablo Valley College  | East Bay |  1  |  1  |  |  2  |
| Santa Rosa Junior College  | North Bay |  |  |  2  |  2  |
| Skyline College  | Mid-Peninsula |  1  |  1  |  |  2  |
| **Total Bay Region** |  **5**  |  **5**  |  **7**  |  **17**  |
| **Total Silicon Valley Sub-Region** |  **2**  |  **2**  |  **5**  |  **9**  |

# *Source: Data Mart*

Note: The annual average for awards is 2015-16 to 2017-18.

# Gap Analysis

Based on the data included in this report, there is a labor market gap in the Bay region with 1,056 annual openings for the Testing, Adjusting and Balancing occupational cluster and 17 annual (3-year average) awards for an annual undersupply of 1,039 students. In the Silicon Valley Sub-Region, there is also a gap with 65 annual openings and 9 annual (3-year average) awards for an annual undersupply of 56 students.

# Student Outcomes

**Table 8. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 0946.10 - Energy Systems Technology**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 2015-16 | Bay (All CTE Programs) | Foothill College (All CTE Programs) | State (0946.10) | Bay (0946.10) | Silicon Valley (0946.10) | Foothill College (0946.10) |
| % Employed Four Quarters After Exit | 74% | 77% | 60% | 50% | 48% | n/a |
| Median Quarterly Earnings Two Quarters After Exit | $10,550 | $15,301 | $9,027 | $10,185 | $21,056 | n/a |
| Median % Change in Earnings | 46% | 82% | 48% | 27% | 11% | n/a |
| % of Students Earning a Living Wage | 63% | 76% | 55% | 47% | n/a | n/a |

*Source: Launchboard Pipeline (version available on 3/9/20)*

# 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 CCCCO 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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