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**Electrician Apprenticeship Program Report**

**For Greater South Bay and Peninsula Region**

**(Santa Clara and San Mateo Counties)**

**November 2014**

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| **Electrician** |

CIP 2010: A program that prepares individuals to apply technical knowledge and skills to install, operate, maintain, and repair electric apparatus and systems such as residential, commercial, and industrial electric-power wiring; and DC and AC motors, controls, and electrical distribution panels. Includes instruction in the principles of electronics and electrical systems, wiring, power transmission, safety, industrial and household appliances, job estimation, electrical testing and inspection, and applicable codes and standards.

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| **Target Occupations**‡ |
| First-Line Supervisors of Construction Trades and Extraction Workers (47-1011) |
| Electricians (47-2111) |
| Helpers--Electricians (47-3013) |
| Electrical and Electronics Repairers, Powerhouse, Substation, and Relay (49-2095) |
| Security and Fire Alarm Systems Installers (49-2098) |
| Signal and Track Switch Repairers (49-9097) |

‡Based on EMSI crosswalk of the Classification of Instructional Programs (CIP) codes with Standard Occupational Classification (SOC) codes as published by the U.S. Department of Education.

In 2014, the number of electrician jobs in the target occupations in Santa Clara and San Mateo Counties totaled 10,095. The Bureau of Labor Statistics (BLS) expects the total number of positions to increase by 3.0% over the next three years. Regional openings in 2014, which included created jobs and turnover, totaled 287. Completions in electrician programs totaled 160 from two institutions, with an additional 197 completions from other related programs. These other programs are linked to multiple occupations and not all those who complete will enter the target occupations indicated in this report.

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| **Target Occupation Performance** |
| **10,095\*** | **3.0%** | **$31.42/hr** |
| **Jobs (2014)** | **Growth (2014-2017)** | **Median Earnings** |
| National Location Quotient: 0.74† | National: 1.5% | National: $24.28/hr |

\*Based on total number of jobs for target occupations in Santa Clara and San Mateo Counties.

†Represents occupation density as compared to national average (national average=1).

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| Regional Openings (2014)\*\* | 287 |  |
| Regional Program Completions (2013) | 160 |  |
| All Regional Completions for Target Occupations†† (2013) | 357 |  |

\*\*Openings include created jobs and turnover.

†† Includes all regional programs applicable to target occupations.

**Electrician Occupations Performance**

| **Target Occupations** | **Regional Openings (2014)** | **Median Hourly Earnings** | **Growth (2014-2017)** |
| --- | --- | --- | --- |
| First-Line Supervisors of Construction Trades and Extraction Workers (47-1011) | 98 | $35.13 | 3.2% |
| Electricians (47-2111) | 138 | $29.74 | 2.2% |
| Helpers--Electricians (47-3013) | 12 | $16.69 | 7.8% |
| Security and Fire Alarm Systems Installers (49-2098) | 37 | $28.81 | 5.3% |
| Signal and Track Switch Repairers (49-9097) | 0 | $27.07 | 3.0% |
| Electrical and Electronics Repairers, Powerhouse, Substation, and Relay (49-2095) | 1 | $42.35 | 2.4% |

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| **Regional Electrician Training Providers** |
| **3** | **160\*** |
| **Institutions** | **Completions (2013)** |

\*Based on IPEDS data.



| **Institution** | **Degrees** | **Certificates** | **Total Completions** |
| --- | --- | --- | --- |
| Institute for Business and Technology | 0 | 88 | 88 |
| College of San Mateo | 0 | 42 | 42 |
| Foothill College | 1 | 29 | 30 |

Other regional programs may train individuals eligible for the targeted electrician occupations, which are based on an occupation-program crosswalk developed by the Department of Education. These additional programs are offered at CET Sobrato and Gilroy, San Jose City College and the College of San Mateo. As noted earlier, many postsecondary programs are linked to multiple occupations and not all those who complete the program will enter the target occupation.

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| **Educational programs** |
| **9** | **357** |
| **Programs (2013)** | **Completions (2013)** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Program | 2009 | 2010 | 2011 | 2012 | 2013 |
| Electrician (46.0302) | 191 | 260 | 147 | 164 | 160 |
| Building Construction Technology (46.0415) | 0 | 18 | 122 | 149 | 152 |
| Plumbing Technology/Plumber (46.0503) | 64 | 9 | 0 | 28 | 41 |
| Building/Home/Construction Inspection/Inspector (46.0403) | 12 | 8 | 1 | 7 | 4 |
| Industrial Electronics Technology/Technician (47.0105) | 1 | 0 | 0 | 0 | 0 |
| Construction Trades, Other (46.9999) | 45 | 0 | 0 | 0 | 0 |
| Electrical and Power Transmission Installers, Other (46.0399) | 28 | 67 | 0 | 0 | 0 |
| Building/Property Maintenance (46.0401) | 60 | 177 | 14 | 0 | 0 |
| Construction Trades, General (46.0000) | 0 | 0 | 0 | 0 | 0 |

 **Target Occupations Demographics**

The demographics among those employed in electrician occupations in Santa Clara and San Mateo Counties for 2013 show that almost are men (94%) and almost all are distributed among two age groups: 25-44 years old (50%), 45-64 years old (41%).

**Gender Demographics (Regional)**

|  |  |  |
| --- | --- | --- |
| Gender |   |   |
| Male | 94% |  |
| Female | 6% |  |

**Age Demographics (Regional)**

|  |  |  |
| --- | --- | --- |
| Age |   |   |
| 14-18 | 0% |  |
| 19-24 | 6% |  |
| 25-44 | 50% |  |
| 45-64 | 41% |  |
| 65+ | 3% |  |

 **Industries Employing Electrician Occupations**

A number of industries in Santa Clara and San Mateo Counties employ those trained as electricians and its related occupations. The following table represents a regional industry breakdown of the number of electrician positions employed, the percentage of electrician jobs employed by industry and the percentage electrician jobs represent within all jobs by each industry. While electrical contractors and other wiring installation contractors employed 44.0% of all regional electricians in 2014, electricians and its related occupations represent over a half of the total jobs in that industry (51.5%).

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| **Inverse Staffing Patterns (Regional)** |
| **Industry** | **Occupation Group Jobs in Industry (2014)** | **% of Occupation Group in Industry (2014)** | **% of Total Jobs in Industry (2014)** |
| Electrical Contractors and Other Wiring Installation Contractors (238210) | 4,444 | 44.0% | 51.5% |
| Commercial and Institutional Building Construction (236220) | 610 | 6.0% | 10.0% |
| Plumbing, Heating, and Air-Conditioning Contractors (238220) | 577 | 5.7% | 4.9% |
| Residential Remodelers (236118) | 551 | 5.5% | 8.3% |
| Security Systems Services (except Locksmiths) (561621) | 383 | 3.8% | 35.7% |

 **Compatible Occupations for Electricians**

Individuals completing an electrician program share many skills and abilities with other occupations. The Occupational Information Network (O\*Net) identifies compatible occupations based on an analysis of overlapping knowledge, skills and ability. Additional education required for transition can range from short on-site training to advanced post-secondary degrees. The following table shows how much education might be needed to be employed in these compatible occupations.

**Top Ten Compatible Occupations for Electricians: Associate’s Degree or Less**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Rank | Occupation | Median Hourly Earnings | 2014 Jobs | 2014-2017 Change | 2014-2017 Estimated Annual Openings |
| 1 | Telecommunications Line Installers and Repairers | $31.27 | 1,379 |  (339) | 21 |
| 2 | Aircraft Structure, Surfaces, Rigging, and Systems Assemblers | $26.52 | 400 | 9 | 7 |
| 3 | Bus and Truck Mechanics and Diesel Engine Specialists | $23.81 | 1,197 | 22 | 26 |
| 4 | Electrical and Electronics Repairers, Commercial and Industrial Equipment | $24.77 | 749 | 10 | 14 |
| 5 | First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers | $21.17 | 1,169 | 25 | 17 |
| 6 | First-Line Supervisors of Production and Operating Workers | $29.36 | 4,642 |  (68) | 55 |
| 7 | Geothermal Technicians | $21.99 | 1,685 | 39 | 33 |
| 8 | Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters | $14.45 | 333 | 46 | 16 |
| 9 | Manufacturing Production Technicians | $28.71 | 994 | 3 | 19 |
| 10 | Power Plant Operators | $38.43 | 136 | 8 | 5 |

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| **Data Sources and Calculations** |

**State Data Sources**

This report uses state data from the following agencies: California Labor Market Information Department

**Institution Data**

The institution data in this report is taken directly from the national IPEDS database published by the U.S. Department of Education's National Center for Education Statistics.

**Completers Data**

The completers data in this report is taken directly from the national IPEDS database published by the U.S. Department of Education's National Center for Education Statistics.

**Occupation Data**

EMSI occupation employment data are based on final EMSI industry data and final EMSI staffing patterns. Wage estimates are based on Occupational Employment Statistics (QCEW and Non-QCEW Employees classes of worker) and the American Community Survey (Self-Employed and Extended Proprietors). Occupational wage estimates also affected by county-level EMSI earnings by industry.

**Staffing Patterns Data**

The staffing pattern data in this report are compiled from several sources using a specialized process. For QCEW and Non-QCEW Employees classes of worker, sources include Occupational Employment Statistics, the National Industry-Occupation Employment Matrix, and the American Community Survey. For the Self-Employed and Extended Proprietors classes of worker, the primary source is the American Community Survey, with a small amount of information from Occupational Employment Statistics.

**Industry Data**

EMSI industry data have various sources depending on the class of worker. (1) For QCEW Employees, EMSI primarily uses the QCEW (Quarterly Census of Employment and Wages), with supplemental estimates from County Business Patterns and Current Employment Statistics. (2) Non-QCEW employees data are based on a number of sources including QCEW, Current Employment Statistics, County Business Patterns, BEA State and Local Personal Income reports, the National Industry-Occupation Employment Matrix (NIOEM), the American Community Survey, and Railroad Retirement Board statistics. (3) Self-Employed and Extended Proprietor classes of worker data are primarily based on the American Community Survey, Nonemployer Statistics, and BEA State and Local Personal Income Reports. Projections for QCEW and Non-QCEW Employees are informed by NIOEM and long-term industry projections published by individual states.