| ⚠ Endorsed: Caution Advised | | | |
|---|---|---|---|
| **Program LMI Endorsement Criteria** | | | |
| | Met ☐ | Partially Met ☑ | Not Met ☐ |
| Supply Gap: | There are projected to be **104 annual job openings** throughout Los Angeles and Orange counties for *electrical and electronics repairers, commercial and industrial equipment*, which **is less than the 462 awards conferred by educational institutions**. However, these educational programs also prepare students for **six other related occupations, which account for 1,544 additional annual job openings.** *Because this program trains for a variety of occupations with high demand, there is most likely an undersupply of labor for electrical and electronics repairers, commercial and industrial equipment.* | | |
| | Met ☐ | Partially Met ☐ | Not Met ☑ |
| Self-Sufficiency Standard Living Wage[1]: | The typical entry-level wage for *electrical and electronics repairers, commercial and industrial equipment* is **$26.75**, which is **below the OC living wage of $27.13**. | | |
| | Met ☑ | Partially Met ☐ | Not Met ☐ |
| Education: | Typical education requirement for *electrical and electronics repairers, commercial and industrial equipment* is a postsecondary nondegree award and **56% of workers in the field have completed some college or an associate degree as their highest level of education.** | | |

*This LMA brief is valid for 12 months and expires November 2027.*

## Summary

The Orange County Center of Excellence for Labor Market Research (OC COE) prepared this report to determine whether there is a supply gap in the Los Angeles and Orange counties regional labor markets related to one occupation:

- Middle-Skill
  - *Electrical and Electronics Repairers, Commercial and Industrial Equipment (49-2094)*

Although the number of awards exceeds demand for these occupations, supply is likely overstated because related educational programs train for six additional occupations. When considering the demand across these occupations, it is likely the region faces a supply gap for *electrical and electronics repairers, commercial and industrial equipment*. Additionally, typical education requirements for this occupation align with a community college education. However, entry-level wages are below the Self-Sufficiency Standard living wage.

[1] The living wage endorsement criteria in this report uses the University of Washington's Center for Women's Welfare Self-Sufficiency Standard, which the COE refers to as a living wage; Orange County's living wage of $27.13, was last updated in March 2024.

**Therefore, due to some regional labor market criteria being met, the COE endorses this proposed program.**

Exhibit 1 lists the occupational demand, supply, typical entry-level education, and educational attainment for the middle-skill occupation included in this report.

Exhibit 1: Labor Market Endorsement Summary

| Occupation (SOC) | Demand (Annual Openings) | Supply (CC and Non-CC) | Entry-Level Hourly Earnings (25th Percentile) | Typical Entry-Level Education | Community College Educational Attainment |
|---|---|---|---|---|---|
| Electrical and Electronics Repairers, Commercial and Industrial Equipment (49-2094) | LA: 73<br>OC: 32 | LA: 418<br>OC: 44 | OC: $26.75 | Post-secondary nondegree award | 56% |
| **Total** | **104** | **462** | **N/A** | **N/A** | **N/A** |

## Demand

- In Los Angeles and Orange counties, the number of jobs related to *electrical and electronics repairers, commercial and industrial equipment* is projected to decrease 1% through 2030, equating to 104 annual job openings.
- Hourly entry-level wages for *electrical and electronics repairers, commercial and industrial equipment* are $26.75 in Orange County, which is below the Self-Sufficiency Standard living wage.
- There were 575 online job postings for *electrical and electronics repairers, commercial and industrial equipment* over the past 12 months. The highest number of postings were for repair technicians, service technicians, and maintenance specialists.
- The typical entry-level education for *electrical and electronics repairers, commercial and industrial equipment* is an associate degree.
- Approximately 56% of workers in the field have completed some college or an associate degree as their highest level of educational attainment.

## Supply

- Between 2022 to 2024, an average of 462 awards were conferred by 13 community colleges for the middle-skill occupation in Los Angeles and Orange counties.
- From 2021 to 2024, non-community college institutions did not confer any awards for the middle-skill occupation.
- In the 2023-24 academic year, Orange County community college students that exited electronics and electric technology programs had a median annual wage of $50,780 ($24.41 per hour) post-exit, and 46% attained the regional living wage.
- In 2022-23, 40% of Orange County electronics and electric technology students that exited their programs reported working a job closely related to their field of study.

# Demand

## Occupational Projections

Exhibit 2 shows the annual percentage change in jobs for *electrical and electronics repairers, commercial and industrial equipment* from 2020 through 2030. Beginning in 2025, Orange County job levels are projected to grow at a lower rate than all occupations through 2030.

Exhibit 2: Annual Percentage Change in Jobs for Electrical and Electronics Repairers, Commercial and Industrial Equipment, 2020-2030

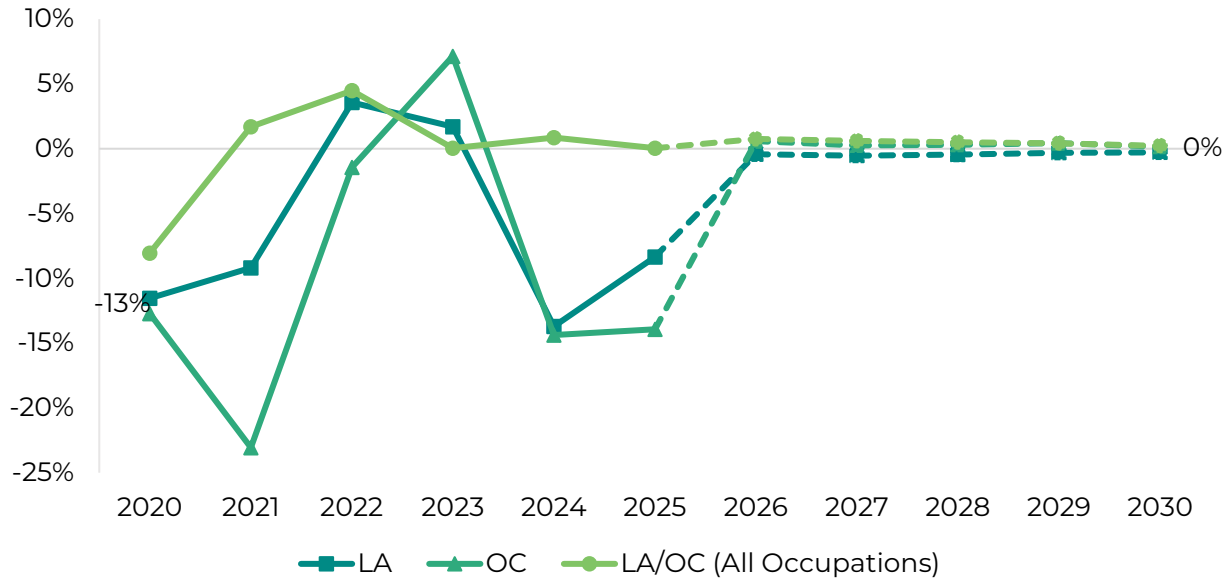



Exhibit 3 shows the five-year occupational demand projections for *electrical and electronics repairers, commercial and industrial equipment*. In Los Angeles and Orange counties, the number of jobs related to this occupation is projected to decrease 1% through 2030. There is projected to be 104 jobs available annually.

Exhibit 3: Middle-Skill Occupational Demand in Los Angeles and Orange Counties[2]

| Geography | 2025 Jobs | 2030 Jobs | 2025-2030 Change | 2025-2030 % Change | Annual Openings |
|---|---|---|---|---|---|
| Los Angeles | 924 | 905 | (18) | (2%) | 73 |
| Orange | 388 | 395 | 7 | 2% | 32 |
| **Total** | **1,312** | **1,300** | **(12)** | **(1%)** | **104** |

## Wages

The labor market endorsement in this report considers the entry-level hourly wage for *electrical and electronics repairers, commercial and industrial equipment* in Orange County as it relates to the county's living wage. Los Angeles County wages are included below to provide a complete analysis of the LA/OC region.

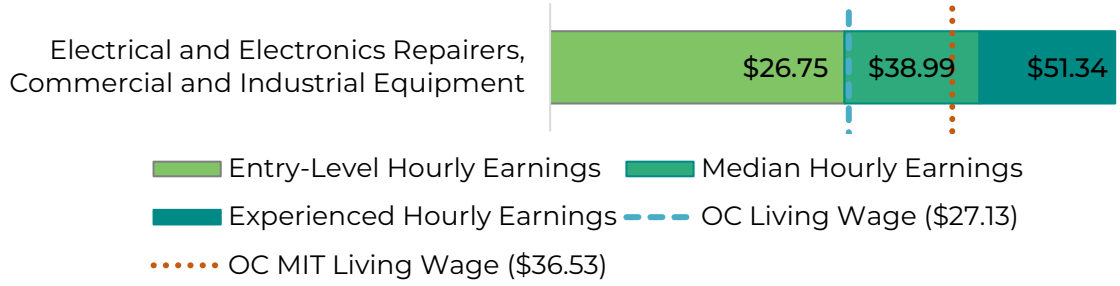
In addition to the Self Sufficiency Standard living wage, data for the MIT Living Wage (updated on February 15, 2026) is provided as a reference. Currently, the MIT Living Wage in Orange County is $36.53. Both figures account for geographic-specific costs of necessities

[2] Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

such as housing, food, health care, and transportation to assess the cost of living, and are notated in the exhibits below.

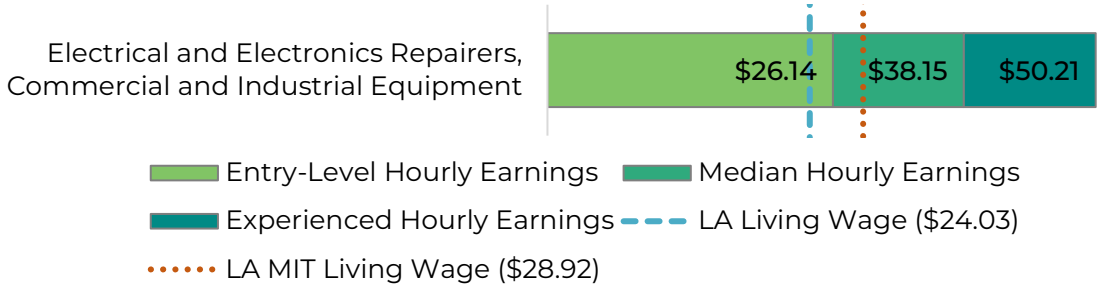
In Orange County, the typical entry-level wage for *electrical and electronics repairers, commercial and industrial equipment* is $26.75, which is below the Self-Sufficiency living wage of $27.13 for a single adult. Exhibit 4 shows the wage range for *electrical and electronics repairers, commercial and industrial equipment* in Orange County and how it compares to the regional living wage.

Exhibit 4: Wages by Occupation in Orange County




In Los Angeles County, the typical entry-level wage for *electrical and electronics repairers, commercial and industrial equipment* is $26.14, which is above the Self-Sufficiency living wage of $24.03 for a single adult. Exhibit 5 shows the wage range for *electrical and electronics repairers, commercial and industrial equipment* in Los Angeles County and how it compares to the regional living wage.

Exhibit 5: Wages by Occupation in Los Angeles County




## Resilient Jobs and U.S. News & World Report Best Jobs

Exhibit 6 shows if the occupation is considered an Orange County Great Recession-Resilient, COVID-19 Pandemic Recession-Resilient Job, or a 2026 U.S. News & World Report (USN&WR) Best Job[3]. *Electrical and electronics repairers, commercial and industrial equipment* do not meet the criteria for any of the three designations.

Exhibit 6: Resilient Jobs and USN&WR Best Jobs Designations

| Occupation | Great Recession-Resilient Job | COVID-19 Pandemic Recession-Resilient Job | 2026 USN&WR Best Job |
|---|---|---|---|
| Electrical and Electronics Repairers, Commercial and Industrial Equipment | ☐ | ☐ | ☐ |

[3] "100 Best Jobs," U.S. News & World Report, accessed January 12, 2026, https://money.usnews.com/careers/best-jobs/rankings/the-100-best-jobs.

## Job Postings

***Important Job Postings Data Note:*** *There are limitations when analyzing job postings. A single job posting may not represent a single job opening for a variety of reasons.*

There were 575 online job postings related to *electrical and electronics repairers, commercial and industrial equipment* listed in the past 12 months. Exhibit 7 shows the number of job postings by occupation.

Exhibit 7: Number of Job Postings by Occupation (n=575)

| Occupation | Job Postings | Percentage of Job Postings |
|---|---|---|
| Electrical and Electronics Repairers, Commercial and Industrial Equipment | 575 | 100% |
| **Total Postings** | **575** | **100%** |

The top job titles for *electrical and electronics repairers, commercial and industrial equipment* in the region, by number of job postings, are shown in Exhibit 8.

Exhibit 8: Top Job Titles by Number of Job Postings for the Middle-Skill Occupation (n=575)

| Job Titles | Job Postings | Percentage |
|---|---|---|
| Repair Technicians | 59 | 10% |
| Service Technicians | 30 | 5% |
| Maintenance Specialists | 13 | 2% |
| Repair Specialists | 13 | 2% |
| Mechanics | 12 | 2% |
| Technicians | 12 | 2% |
| Collision Technicians | 11 | 2% |
| Equipment Maintenance Technicians | 10 | 2% |
| Master Technicians | 9 | 2% |
| Games Technicians | 9 | 2% |

The top employers for *electrical and electronics repairers, commercial and industrial equipment* in the region, by number of job postings, are shown in Exhibit 9.

Exhibit 9: Top Employers by Number of Job Postings for the Middle-Skill Occupation (n=575)

| Employer | Job Postings | Percentage of Job Postings |
|---|---|---|
| Tesla | 22 | 4% |
| Aerotek | 21 | 4% |
| Guitar Center Stores | 12 | 2% |
| Namz Group | 11 | 2% |
| Tower Semiconductor Ltd | 9 | 2% |
| Motor Coach Industries | 7 | 1% |
| Safran | 6 | 1% |
| U-Haul | 5 | <1% |
| Kroger | 5 | <1% |
| PrideStaff | 5 | <1% |

The top specialized, soft, and computer skills for *electrical and electronics repairers, commercial and industrial equipment* listed by those most frequently mentioned in job postings (denoted in parentheses) are shown in Exhibit 10.

Exhibit 10: Top Skills by Number of Job Postings for the Middle-Skill Occupation (n=575)

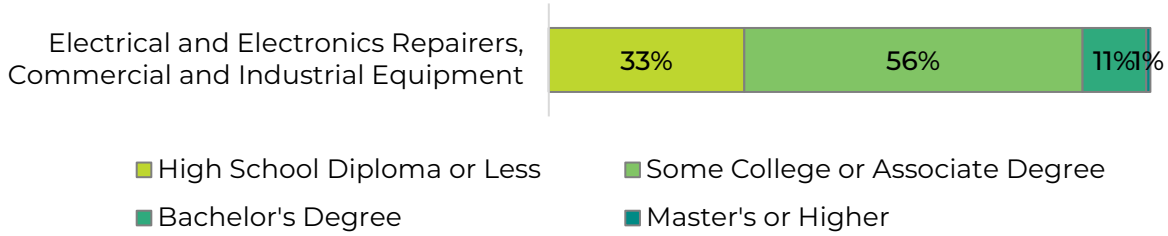
| Top Specialized Skills | Top Soft Skills | Top Computer Skills |
|---|---|---|
| Hand Tools (123) | Troubleshooting (Problem Solving) (310) | Microsoft Office (56) |
| HVAC (113) | Communication (239) | Microsoft Excel (43) |
| Lifting Ability (113) | Customer Service (191) | Microsoft Outlook (43) |
| Preventive Maintenance (102) | Detail Oriented (149) | Inventory Control Systems (38) |
| Power Tool Operation (99) | Operations (149) | Disassembler (34) |
| Plumbing (95) | Problem Solving (115) | Microsoft Word (25) |
| Electrical Systems (94) | English Language (114) | Web Browsers (19) |
| Equipment Repair (79) | Computer Literacy (96) | Spreadsheets (18) |
| Electronics (65) | Management (89) | Microsoft PowerPoint (14) |
| Good Driving Record (65) | Sales (59) | Productivity Software (9) |

## Educational Attainment

The Bureau of Labor Statistics (BLS) lists postsecondary nondegree award as the typical entry-level education for *electrical and electronics repairers, commercial and industrial equipment*.

The national-level educational attainment data indicates that 56% of workers in the field have completed some college or an associate degree as their highest level of education. Exhibit 11 shows the educational attainment for this occupation.

Exhibit 11: National-level Educational Attainment for Occupations




### Requested Minimum Education Requirement

In Los Angeles and Orange Counties, 46% (267) of job postings for *electrical and electronics repairers, commercial and industrial equipment* included a stated minimum education requirement:

- 97% (259) requested a high school diploma or associate degree
- 2% (6) requested a bachelor's degree

## Educational Supply

The following tables display the total educational supply for the TOP and CIP codes associated with the middle-skill occupation.

### Community College Supply

Exhibit 12 shows the three-year average number of awards conferred by community colleges in the related TOP code:

- Electronics and Electric Technology (0934.00)

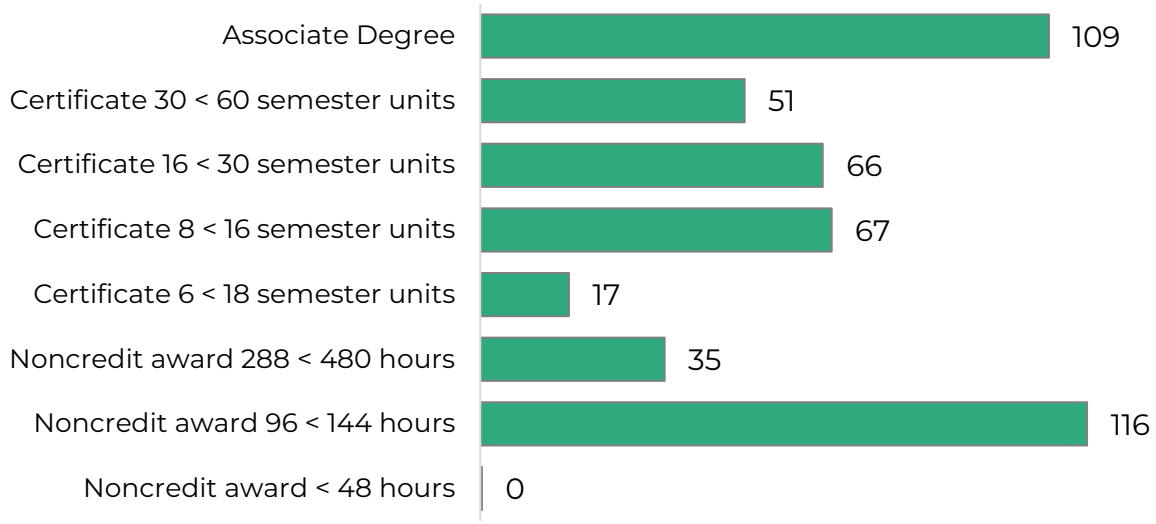
The colleges with the most completions in the region are Mt San Antonio (133), followed by East LA (119), and Long Beach (94). Over the past 12 months, there was one other related program recommendation requests from regional community colleges.

Exhibit 12: Regional Community College Awards (Certificates and Degrees), 2022-2025

| TOP Code | Program | College | 2022-2023 Awards | 2023-2024 Awards | 2024-2025 Awards | 3-Year Award Average |
|---|---|---|---|---|---|---|
| 0934.00 | Electronics and Electric Technology | East LA | 98 | 117 | 141 | 119 |
| | | El Camino | 7 | 8 | 18 | 11 |
| | | Glendale | 7 | 5 | 4 | 5 |
| | | LA Pierce | 13 | 6 | 7 | 9 |
| | | LA Southwest | 6 | 5 | 0 | 4 |
| | | LA Valley | 24 | 18 | 25 | 22 |
| | | Long Beach | 69 | 113 | 100 | 94 |
| | | Mt San Antonio | 138 | 121 | 139 | 133 |
| | | Pasadena | 5 | 8 | 43 | 19 |
| | | Rio Hondo | 2 | 6 | 0 | 3 |
| | | **LA Subtotal** | **369** | **407** | **477** | **418** |
| | | Coastline | 23 | 13 | 3 | 13 |
| | | Irvine | 12 | 15 | 12 | 13 |
| | | Saddleback | 21 | 16 | 17 | 18 |
| | | **OC Subtotal** | **56** | **44** | **32** | **44** |
| **Supply Total/Average** | | | **425** | **451** | **509** | **462** |

Exhibit 13 shows the annual average community college awards by type from 2022-23 to 2024-25. The plurality of the awards are for noncredit award 96 to 144 hours, followed by associate degree then certificate 8 to 16 semester units..

Exhibit 13: Annual Average Community College Awards by Type, 2022-2025




## Community College Student Outcomes

Exhibit 14 shows the Strong Workforce Program (SWP) metrics for electronics and electric technology programs in North Orange County Community College District (NOCCCD), the Orange County Region, and California. Of the 375 Orange County electronics and electric technology students in the 2024-25 academic year, 28% (105) attended an NOCCD college.

NOCCCD students that exited electronics and electric technology programs in the 2023-24 academic year had higher median annual earnings ($60,958 or $29.31 per hour)) compared to all electronics and electric technology students in Orange County ($50,780 or $24.41 per hour). A higher percentage of NOCCCD electronics and electric technology students attained the living wage (55%) when compared to all electronics and electric technology students in Orange County (46%).

Exhibit 14: Electronics and Electric Technology (0934.00) Strong Workforce Program Metrics, 2022-25[4]

| SWP Metric | NOCCCD | OC Region | California |
|---|---|---|---|
| SWP Students | 105 | 375 | 8,782 |
| SWP Students Who Earned 9 or More Career Education Units in the District in a Single Year | 29% | 33% | 40% |
| SWP Students Who Completed a Noncredit CTE or Workforce Preparation Course | Insufficient Data | Insufficient Data | 56% |
| SWP Students Who Earned a Degree or Certificate or Attained Apprenticeship Journey Status | Insufficient Data | 20 | 802 |
| SWP Students Who Transferred to a Four-Year Postsecondary Institution (2023-24) | Insufficient Data | 18 | 225 |
| SWP Students with a Job Closely Related to Their Field of Study (2022-23) | 100% | 40% | 29% |

[4] All SWP metrics are for 2024-25 unless otherwise noted.

| SWP Metric | NOCCCD | OC Region | California |
|---|---|---|---|
| Median Annual Earnings for SWP Exiting Students (2023-24) | $60,958 ($29.31) | $50,780 ($24.41) | $51,524 ($24.77) |
| Median Change in Earnings for SWP Exiting Students (2023-24) | 33% | 14% | 36% |
| SWP Exiting Students Who Attained the Living Wage (2023-24) | 55% | 46% | 56% |

## Non-Community College Supply

No awards were granted by non-community college institutions under the related Classification of Instructional Programs (CIP) codes:

- Industrial Electronics Technology/Technician (47.0105)

## Regional Demographics

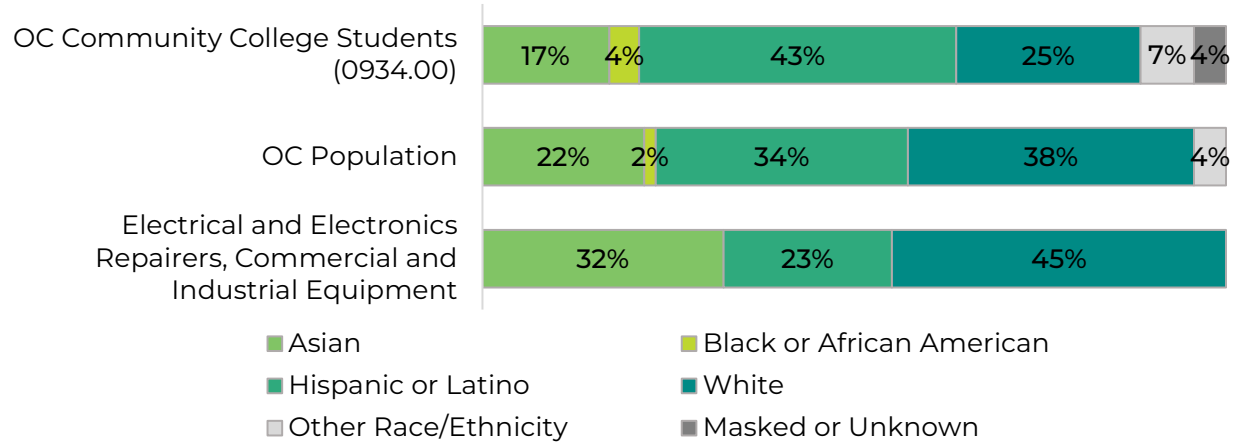
The following section presents occupational, community college program, and population demographic data for Orange County. This comparison can help identify possible equity gaps between the local workforce and the student pipeline who are preparing for these occupations. These insights can inform program development, outreach, and support strategies to better align community college programs with current labor market needs.

### Ethnicity

Exhibit 15 compares the ethnicity of Orange County community college students enrolled in electronics and electric technology programs, the overall Orange County population, and occupation-specific data for *electrical and electronics repairers, commercial and industrial equipment*.

Nearly half (45%) of *electrical and electronics repairers, commercial and industrial equipment* are white, which is almost double their representation in electronics and electric technology programs (25%), suggesting that white workers may be entering these jobs through alternate training pathways. In contrast, Hispanic or Latino individuals make up only 23% of the workforce but account for 43% of program enrollment, indicating a potential disconnect between education and employment outcomes.

Exhibit 15: Program and County Demographics by Ethnicity

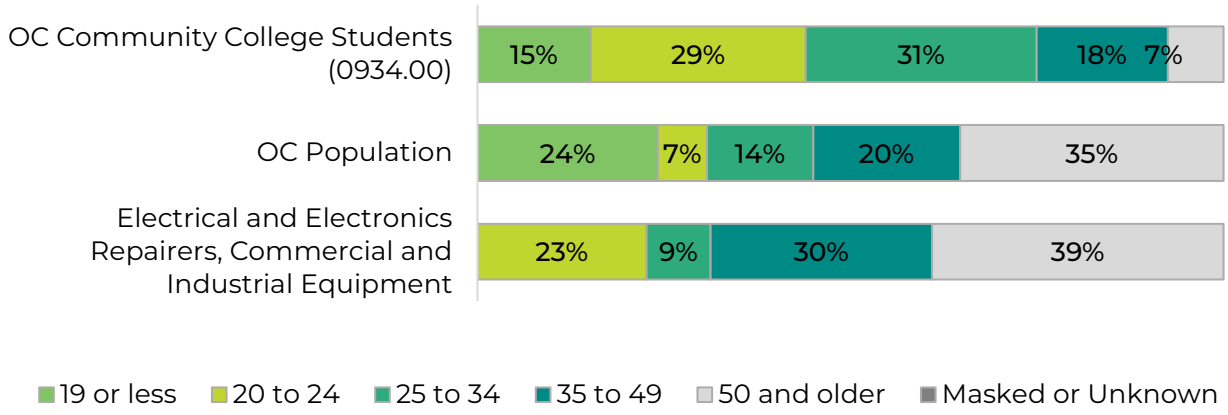


## Age

Exhibit 16 compares the age of Orange County community college students enrolled in electronics and electric technology programs, the overall Orange County population, and occupation-specific data for *electrical and electronics repairers, commercial and industrial equipment*.

Over half (69%) of *electrical and electronics repairers, commercial and industrial equipment* are aged 35 and older, which is more than double their representation in electronics and electric technology programs (25%). Conversely, those aged 34 or younger only make up only 32% of workers, yet account for 75% of students. This may suggest additional training or experience is required.

### Exhibit 16: Program and County Demographics by Age

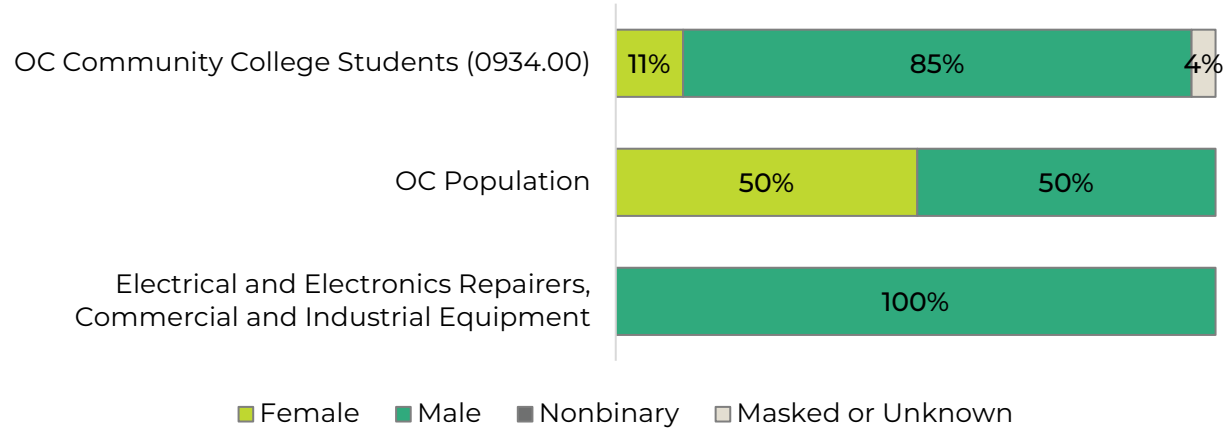



## Sex

Exhibit 17 compares the sex of Orange County community college students enrolled in electronics and electric technology programs, the overall Orange County population, and occupation-specific data for *electrical and electronics repairers, commercial and industrial equipment*.

Though the population is split evenly between women and men, women are absent in *electrical and electronics repairers, commercial and industrial equipment* and only 11% of community college students are women.

### Exhibit 17: Program and County Demographics by Sex



## Appendix A: Methodology

OC COE prepared this report by analyzing occupational and educational program data. Occupational data comes from Lightcast, a labor market analytics firm which compiles information from the California Employment Development Department (EDD), U.S. Bureau of Labor Statistics (BLS), and other agencies. Analysis of emerging occupations is predicated on online job postings data combined with Occupational Information Network (O*NET) profile descriptions. Program supply data was sourced from the California Community Colleges Chancellor's Office Data Mart (MIS Data Mart) (datamart.cccco.edu) and the Integrated Postsecondary Education Data System (nces.ed.gov/ipeds/use-the-data), also known as IPEDS, which was integrated into the COE's Supply Table. (IPEDS).

Using a TOP-SOC crosswalk, the OC COE identified middle-skill jobs for which programs within these TOP codes train. Middle-skill jobs include:

- All occupations that have an educational requirement of some college, associate degree or apprenticeship;
- All occupations that require a bachelor's degree, but also have more than one-third of their existing labor force with an educational attainment of some college or associate degree; or
- All occupations that require a high school diploma or equivalent or no formal education, but also require short- to long-term on-the-job training where multiple community colleges have existing programs.

The OC COE determined labor market supply for each occupation (SOC code) by analyzing the number of 3-year average program completers or awards in related TOP and CIP codes. TOP code data comes from MIS Data Mart and CIP code data comes from the IPEDS. The TOP is a system of numerical codes used at the state level to collect and report information on California community college programs and courses throughout the state that have similar outcomes. CIP codes are a taxonomy of academic disciplines at institutions of higher education throughout the United States and Canada. The California Community Colleges are the only system that use TOP codes.

The analysis reflects labor market demand for occupations closely related to the proposed program as expressed by the requesting college in consultation with the OC COE. Traditional labor market data was used to assess current and projected employment based on data trends for detailed occupations, as well as annual average awards granted by regional postsecondary educational institutions. Real-time labor market information (online job postings) assesses employer preferences but cannot be used to measure the quantity of open positions, number of jobs, or annual openings.

All findings are based on the most current available data and a combination of primary and secondary sources. While care was taken to ensure accuracy, the OC COE, its host district, and the California Community Colleges Chancellor's Office are not responsible for individual decisions made based on this report.

## Appendix B: Data Sources

| Data Type | Source |
|---|---|
| Occupational Projections, Wages, and Job Postings | Traditional and real-time labor market information are captured using data from Lightcast (v.2026.3), a labor market analytics firm. |
| Living Wage | Per the CCCCO's this report's endorsement criteria uses the University of Washington's Center for Women's Welfare Self-Sufficiency Standard last updated in March 2024, which is $27.13 per hour ($57,294 annually) in Orange County.<br>The MIT Living Wage, updated on February 15, 2026, is a nationally recognized living wage metric and is provided for reference. The current MIT Living Wage in Orange County is $36.53. |
| Typical Education and Training Requirements, and Educational Attainment | The Bureau of Labor Statistics (BLS) uses a system to assign categories for entry-level education, work experience in a related occupation, and typical on-the-job training to each occupation for which BLS publishes projections data. |
| Emerging Occupation Descriptions, Additional Education Requirements, and Employer Preferences | The O*NET database includes information on skills, abilities, knowledges, work activities, and interests associated with occupations. |
| Educational Supply | The CCCCO Data Mart provides information about students, courses, student services, outcomes and faculty and staff.<br>The National Center for Education Statistics (NCES) Integrated Postsecondary Integrated Data System (IPEDS) collects data on the number of postsecondary awards earned (completions). |
| Student Metrics and Demographics | Data Vista, a statewide data system supported by the California Community Colleges Chancellor's Office provides data on progress, success, employment, and earnings outcomes for California community college students. |
| Population and Occupation Demographics | The Census Bureau's American Community Survey (ACS) is the premier source for detailed population and housing information.<br>Data is sourced from IPUMS USA, a database providing access to ACS and other Census Bureau data products. |

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November 2026

FOR LABOR MARKET RESEARCH
ORANGE COUNTY