

**Labor Market Analysis: 0950.00/Aeronautical and Aviation Technology
Aircraft Maintenance (Certificate Requiring 30 to <60 semester units)
Los Angeles Center of Excellence, October 2022**

Summary

Program Endorsement:	Endorsed: All Criteria Met <input checked="" type="checkbox"/>	Endorsed: Some Criteria Met <input type="checkbox"/>	Not Endorsed <input type="checkbox"/>
Program Endorsement Criteria			
Supply Gap:	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Living Wage: (Entry-Level, 25th)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Education:	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Emerging Occupation(s)			
Yes <input type="checkbox"/>		No <input checked="" type="checkbox"/>	

The Los Angeles Center of Excellence for Labor Market Research (LA COE) prepared this report to provide regional labor market supply and demand data related to four middle-skill occupations:

- **Aerospace engineering and operations technologists and technicians (17-3021)** Operate, install, adjust, and maintain integrated computer/communications systems, consoles, simulators, and other data acquisition, test, and measurement instruments and equipment, which are used to launch, track, position, and evaluate air and space vehicles. May record and interpret test data.¹
- **Avionics Technicians (49-2091)** Install, inspect, test, adjust, or repair avionics equipment, such as radar, radio, navigation, and missile control systems in aircraft or space vehicles.²
- **Aircraft Mechanics and Service Technicians (49-3011)** Diagnose, adjust, repair, or overhaul aircraft engines and assemblies, such as hydraulic and pneumatic systems.³
- **Aircraft Structure, Surfaces, Rigging, and Systems Assemblers (51-2011)** Assemble, fit, fasten, and install parts of airplanes, space vehicles, or missiles, such as tails, wings, fuselage, bulkheads, stabilizers, landing gear, rigging and control equipment, or heating and ventilating systems.⁴

¹ [Aerospace Engineering and Operations Technologists and Technicians \(bls.gov\)](#)

² [Avionics Technicians \(bls.gov\)](#)

³ [Aircraft Mechanics and Service Technicians \(bls.gov\)](#)

⁴ [Aircraft Structure, Surfaces, Rigging, and Systems Assemblers \(bls.gov\)](#)

Middle-skill occupations typically require some postsecondary education, but less than a bachelor's degree.⁵ This report is intended to help determine whether there is demand in the local labor market that is not being met by the supply from community college programs that align with the relevant occupations.

Based on the available data, there appears to be a supply gap for these middle-skill aeronautical and aviation technology occupations in the region. Furthermore, entry-level wages exceed the self-sufficiency standard wage in Los Angeles County, and the majority of annual openings for the occupations in this report typically require a postsecondary non-degree award or associate degree. **Therefore, due to all the criteria being met, the LA COE endorses this proposed program.** Detailed reasons include:

Demand:

- **Supply Gap Criteria** – Over the next five years, **749 jobs are projected to be available annually** in the region due to new job growth and replacements, **which is more than the three-year average of 450 awards conferred** by educational institutions in the region.
- **Living Wage Criteria** – Within Los Angeles County, **all four occupations have entry-level wages above the self-sufficiency standard hourly wage (\$18.10/hour).**⁶
- **Educational Criteria** – Within the greater LA/OC region, **83% of the annual job openings** for middle-skill occupations related to aeronautical and aviation technology **typically require a postsecondary non-degree award or an associate degree.**
 - Furthermore, the national-level educational attainment data indicates **between 31% and 64% of workers in the field have completed some college or an associate degree.**

Supply:

- There are **4 community colleges** in the greater LA/OC region that issue awards related to aeronautical and aviation technology, conferring an average of **231 awards annually** between 2018 and 2021.
- Between 2017 and 2020, there was an average of **219 awards conferred annually** in related training programs by non-community college institutions throughout the greater LA/OC region.

⁵ The COE classifies middle-skill jobs as the following:

- All occupations that require 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.

⁶ Self-Sufficiency Standard wage data was pulled from The Self-Sufficiency Standard Tool for California. For more information, visit: <http://selfsufficiencystandard.org/california>.

Occupational Demand

Exhibit 1 shows the five-year occupational demand projections for these middle-skill aeronautical and aviation technology occupations. In the greater Los Angeles/Orange County region, the number of jobs related to these occupations is projected to increase by 3% through 2026. There will be more than 700 job openings per year through 2026 due to job growth and replacements.

Exhibit 1: Occupational demand in Los Angeles and Orange Counties⁷

Geography	2021 Jobs	2026 Jobs	2021-2026 Change	2021-2026 % Change	Annual Openings
Los Angeles	6,641	6,923	281	4%	639
Orange	1,303	1,248	(56)	(4%)	110
Total	7,945	8,170	225	3%	749

Wages

The labor market endorsement in this report considers the entry-level hourly wages for these middle-skill aeronautical and aviation technology occupations in Los Angeles County as they relate to the county's self-sufficiency standard wage. Orange County wages are included below in order to provide a complete analysis of the greater LA/OC region. Detailed wage information, by county, is included in Appendix A.

Los Angeles County—All four occupations in this report have entry-level wages above the self-sufficiency standard wage for one adult (\$18.10 in Los Angeles County). Typical entry-level hourly wages are in a range between \$18.53 and \$36.40. Experienced workers can expect to earn wages between \$29.23 and \$47.05.

Exhibit 2: Hourly Earnings for Occupations in LA County

Occupation	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)
Aerospace Engineering and Operations Technologists and Technicians (17-3021)	\$36.40	\$38.25	\$46.55
Avionics Technicians (49-2091)	\$36.19	\$38.50	\$47.05
Aircraft Mechanics and Service Technicians (49-3011)	\$30.42	\$37.66	\$46.54
Aircraft Structure, Surfaces, Rigging, and Systems Assemblers (51-2011)	\$18.53	\$22.96	\$29.23

⁷ Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

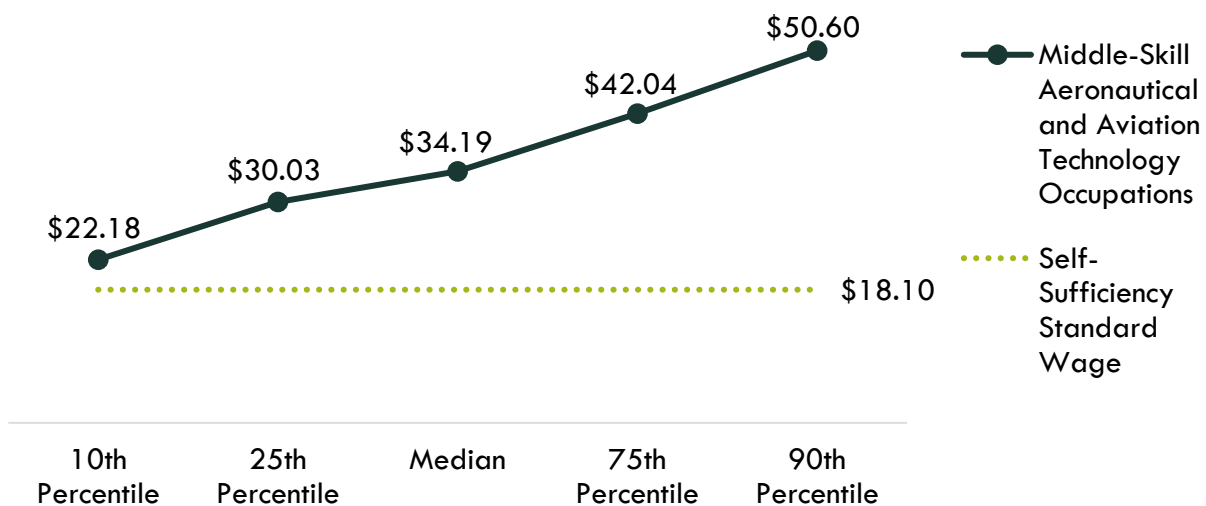
Orange County—The majority (79%) of annual openings for these middle-skill aeronautical and aviation technology occupations have entry-level wages above the self-sufficiency standard wage for one adult (\$20.63 in Orange County). Typical entry-level hourly wages are in a range between \$17.87 and \$36.37. Three occupations in this report have entry-level wages above the county’s self-sufficiency standard wage: *aerospace engineering and operations technologists and technicians* (\$36.34), *avionics technicians* (\$33.36), and *aircraft mechanics and service technicians* (\$28.80). Experienced workers can expect to earn wages between \$28.19 and \$46.43, which are higher than the self-sufficiency standard.

Exhibit 3: Hourly Earnings for Occupations in Orange County

Occupation	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)
Aerospace Engineering and Operations Technologists and Technicians (17-3021)	\$36.37	\$38.14	\$46.43
Avionics Technicians (49-2091)	\$33.36	\$36.07	\$43.18
Aircraft Mechanics and Service Technicians (49-3011)	\$28.80	\$35.99	\$44.28
Aircraft Structure, Surfaces, Rigging, and Systems Assemblers (51-2011)	\$17.87	\$22.15	\$28.19

On average, the entry-level earnings for the occupations in this report are \$30.03; this is above the living wage for one single adult in Los Angeles County (\$18.10). Exhibit 4 shows the average hourly wage for the occupations in this report, from entry-level to experienced workers.

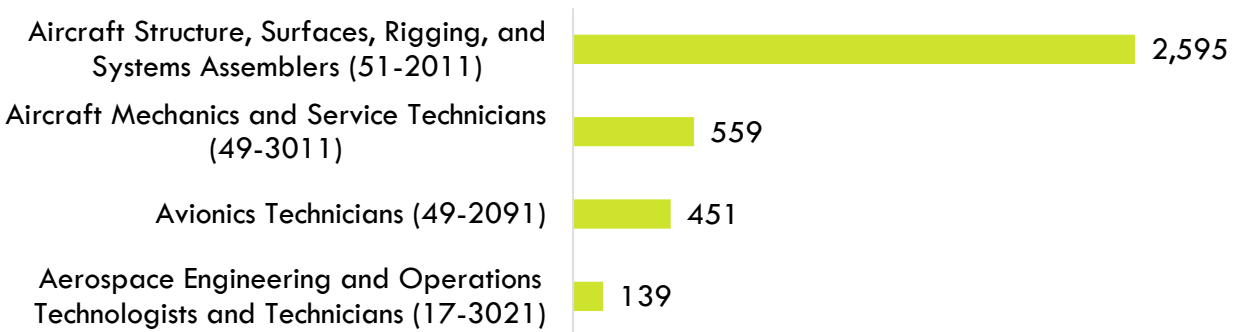
Exhibit 4: Average Hourly Earnings for Middle-Skill Aeronautical and Aviation Technology Occupations in LA/OC



Job Postings

There were 3,744 online job postings related to aeronautical and aviation technology listed in the past 12 months. Exhibit 5 displays the number of job postings by occupation. The majority of job postings (69%) were for *aircraft structure, surfaces, rigging, and systems assemblers*, followed by *aircraft mechanics and service technicians* (15%) and *avionics technicians* (12%). The highest number of job postings were for assemblers, composite technicians, avionics technicians, aerospace assemblers, and assemblers/testers. The top skills were use of hand tools, blueprinting, power tool operation, soldering, and knowledge of Federal Aviation Administration (FAA) regulations. The top three employers, by number of job postings, in the region were Aerotek, ManpowerGroup, Northrop Grumman, and Boeing.

Exhibit 5: Job postings by occupation (last 12 months)



Educational Attainment

The Bureau of Labor Statistics (BLS) lists the following typical entry-level education levels for the occupations in this report:

- **Associate degree:** *Aerospace engineering and operations technologists and technicians; avionics technicians*
- **Postsecondary non-degree award:** *Aircraft mechanics and service technicians*
- **High school diploma or equivalent:** *Aircraft structure, surfaces, rigging, and systems assemblers*

In the greater LA/OC region, the majority of annual job openings (83%) typically require a postsecondary non-degree award or associate degree. Furthermore, the national-level educational attainment data indicates between 31% and 64% of workers in the field have completed some college or an associate degree. Of the 51% of middle-skill aeronautical and aviation technology job postings listing a minimum education requirement in the greater Los Angeles/Orange County region, 91% (1,737) requested high school or vocational training, 3% (66) requested an associate degree, and 6% (114) requested a bachelor's degree.

Educational Supply

Community College Supply—Exhibit 6 shows the annual and three-year average number of awards conferred by community colleges in programs that have historically trained for the occupations of interest. The colleges with the most completions in the region are West LA, Orange Coast, and Mt. San Antonio.

Exhibit 6: Regional community college awards (certificates and degrees), 2018-2021

TOP	Program	College	2018-19 Awards	2019-20 Awards	2020-21 Awards	3-Year Average
0950.00	Aeronautical and Aviation Technology	Long Beach	-	1	1	1
		Mt San Antonio	13	4	10	9
		West LA	8	6	10	8
		LA Subtotal	21	11	21	18
		Orange Coast	34	43	29	35
		OC Subtotal	34	43	29	35
Supply Subtotal/Average			55	54	50	53
0950.10	Aviation Airframe Mechanics	Mt San Antonio	26	11	8	15
		West LA	79	36	55	57
		LA Subtotal	105	47	63	72
		Orange Coast	35	27	8	23
		OC Subtotal	35	27	8	23
Supply Subtotal/Average			140	74	71	95
0950.20	Aviation Powerplant Mechanics	Mt San Antonio	25	9	5	13
		West LA	53	35	49	46
		LA Subtotal	78	44	54	59
		Orange Coast	31	29	13	24
		OC Subtotal	31	29	13	24
Supply Subtotal/Average			109	73	67	83
Supply Total/Average			304	201	188	231

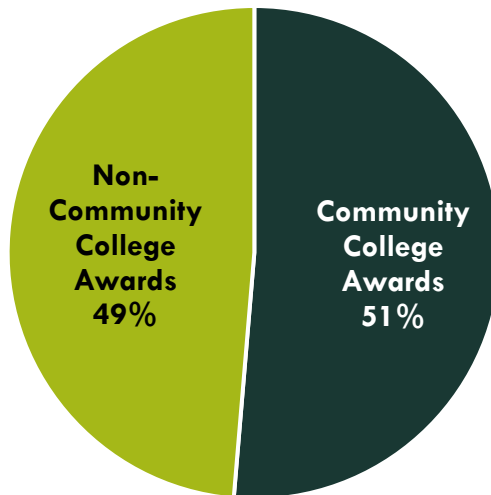
Non-Community College Supply—For a comprehensive regional supply analysis, it is important to consider the supply from other institutions in the region that also provide training programs for middle-skill aeronautical and aviation technology occupations. Exhibit 7 shows the annual and three-year average number of awards conferred by this institution in relevant programs. Due to different data collection periods, the most recent three-year period of available data is from 2017 to 2020. Between 2017 and 2020, non-community college institutions in the region conferred an average of 219 awards.

Exhibit 7: Regional non-community college awards, 2017-2020

CIP	Program	Institution	2017-18 Awards	2018-19 Awards	2019-20 Awards	3-Year Average
47.0607	Airframe Mechanics and Aircraft Maintenance Technology/Technician	Spartan College of Aeronautics & Technology	291	213	153	219
Supply Total/Average			291	213	153	219

Exhibit 8 shows the proportion of community college awards conferred in LA/OC compared to the number of non-community college awards for the programs in this report. About half of the awards conferred in these programs are awarded by community colleges in the LA/OC region.

Exhibit 8: Community College Awards Compared to Non-Community College Awards in LA/OC Region, 3-Year Average



Appendix A: Occupational demand and wage data by county

Exhibit 9. Los Angeles County

Occupation (SOC)	2021 Jobs	2026 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75th Percentile)
Aerospace Engineering and Operations Technologists and Technicians (17-3021)	416	423	7	2%	40	\$36.40	\$38.25	\$46.55
Avionics Technicians (49-2091)	610	627	17	3%	46	\$36.19	\$38.50	\$47.05
Aircraft Mechanics and Service Technicians (49-3011)	4,678	4,983	304	7%	451	\$30.42	\$37.66	\$46.54
Aircraft Structure, Surfaces, Rigging, and Systems Assemblers (51-2011)	937	890	(47)	(5%)	101	\$18.53	\$22.96	\$29.23
Total	6,641	6,923	281	4%	639	-	-	-

Exhibit 10. Orange County

Occupation (SOC)	2021 Jobs	2026 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75th Percentile)
Aerospace Engineering and Operations Technologists and Technicians (17-3021)	151	146	(5)	(3%)	14	\$36.37	\$38.14	\$46.43
Avionics Technicians (49-2091)	137	130	(7)	(5%)	9	\$33.36	\$36.07	\$43.18
Aircraft Mechanics and Service Technicians (49-3011)	785	785	1	0%	64	\$28.80	\$35.99	\$44.28
Aircraft Structure, Surfaces, Rigging, and Systems Assemblers (51-2011)	231	186	(45)	(19%)	23	\$17.87	\$22.15	\$28.19
Total	1,303	1,248	(56)	(4%)	110	-	-	-

Exhibit 11. Los Angeles and Orange Counties

Occupation (SOC)	2021 Jobs	2026 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Typical Entry-Level Education
Aerospace Engineering and Operations Technologists and Technicians (17-3021)	567	569	2	0%	54	Associate degree
Avionics Technicians (49-2091)	747	758	11	1%	56	Associate degree
Aircraft Mechanics and Service Technicians (49-3011)	5,463	5,768	305	6%	515	Postsecondary non-degree award
Aircraft Structure, Surfaces, Rigging, and Systems Assemblers (51-2011)	1,168	1,076	(92)	(8%)	124	High school diploma or equivalent
Total	7,945	8,170	225	3%	749	-

Appendix B: Sources

- O*NET Online
- Labor Insight (Burning Glass Technologies)
- Lightcast (formerly Emsi)
- Bureau of Labor Statistics (BLS)
- California Employment Development Department, Labor Market Information Division, OES
- California Community Colleges Chancellor's Office Management Information Systems (MIS)
- Self-Sufficiency Standard at the Center for Women's Welfare, University of Washington
- Chancellor's Office Curriculum Inventory (COCI 2.0)

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