Division of Apprenticeship Standards (DAS)

Apprenticeship Program Summary Sheet

To: Adele Burnes, Chief
From: Miguel Silva
CC: Program Planning and Review
Date: July 2, 2025

Program Name: LIMITLESS Aviation Mechanic Apprenticeship Program
Industry: Transportation
DAS File No.: 101405
Grant Awardee: ☒ No ☐ Yes

Actions:

- ☒ Proposed new apprentice program
- ☐ Existing apprenticeship program adding new occupations
- ☐ Existing apprenticeship program expanding area of operations
- ☐ Existing apprenticeship program changing work processes on approved occupations.

Labor Organizations Representing Any of the Apprentices:

None

Request for Approval under Labor Code 3075:

LIMITLESS Aviation Mechanic Apprenticeship Program is not intended to train in the building and construction trades and is not eligible to dispatch apprentices to projects with public works, prevailing wage or skilled and trained workforce requirements within the meaning of Labor Code sections 1720 and 3075 and will not train or dispatch apprentices in the building and construction trades or firefighters occupations.

Comments:

Based at the North Valley Aviation Center, The LIMITLESS Aviation Mechanic Apprenticeship Program gives Los Angeles Unified School District students a direct path into high-demand aviation careers aviation industry. Apprentices who complete the program will learn the hands-on, technical skills needed for the field and earn Federal Aviation Administration (FAA) certifications in both airframe and powerplant mechanics, opening doors to well-paid jobs across the aviation industry. The LIMITLESS Aviation Mechanic Apprenticeship Program will oversee all training and standards for this apprenticeship and is seeking approval from the Department of Industrial Relations, Division of Apprenticeship Standards.

LIMITLESS Aviation Mechanic Apprenticeship Program will oversee the apprenticeship program herein and seeks approval from the Department of Industrial Relations, Division of Apprenticeship Standards for the following:

Proposed Occupation, Wage Rate & O*Net Code:

- Aviation Mechanic O*Net: 49-3011.00
  Professional Worker Wage: $32.00 per hour
  Proposed Apprentice Wage: $22.00 per hour
  Proposed No. of Apprentices: 10

Proposed Employers:

- Clay Lacy - 7435 Valjean Ave., Van Nuys, CA 91406

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LIMITLESS Aviation Mechanic Apprenticeship Program Standards

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Article I Purpose and Policy

The parties hereto declare it to be their purpose and policy to establish an organized, planned system of apprenticeship, conducted as an education sponsored, employer-based undertaking.

These standards have, therefore, been adopted and agreed upon under the Shelley-Maloney Apprentice Labor Standards Act of 1939, as amended, to govern the employment and training of apprentices in the trade, craft or occupation defined herein, to become effective upon their approval.

Article II Craft, Trade or Occupation, Related and Supplemental Instruction, Term of Apprenticeship, Ratio, Wage Schedule and Work Training

Occupation: Aviation Mechanic
O*Net Code: 49-3011.00
Attachment: B

Article III Organization

For each employer participating in this program, an “Employer Agreement” (See Attachment D) will be provided to specify the information particular to that employer as noted herein, including the option to waive or offer participation on the committee, employer committee members will be selected as outlined in the rules & regulations.

Article IV Jurisdiction

These standards shall apply to the employer and employee organizations signatory hereto; their members, to other employers who subscribe hereto or who are party to a collective bargaining agreement with an employee organization(s) signatory hereto, and to all apprentice agreements hereunder.

Area Covered by Standards: All CA Counties

Article V Functions

The functions of the apprenticeship committee shall be to:

1) develop an efficient program of apprenticeship through systematic on-the-job training with related and supplemental instruction and periodic evaluation of each apprentice;
2) serve in an advisory capacity with employers and employees in matters pertaining to these standards;

3) ensure the program's ability, including financial ability, and commitment to meet and carry out its responsibilities under federal and state law and regulations applicable to the apprenticeable occupation and for the welfare of the apprentice;
4) aid in the adjustment of apprenticeship disputes;
5) develop fair and impartial selection procedures and an affirmative action plan in accordance with existing laws and regulations and apply them uniformly in the selection of applicants for apprenticeship.

Article VI Responsibilities

The responsibilities of the apprenticeship committee shall be to:

1) supervise the administration and enforcement of these standards;
2) adopt such rules and regulations as are necessary to govern the program provided that the rules and regulations do not conflict with these standards;
3) conduct orientations, workshops or other educational sessions for employers to explain the apprenticeship program's standards and the operation of the apprenticeship program;
4) pass upon the qualification of employers and, when appropriate, to suspend or withdraw approval;
5) conduct on-going evaluation of the interest and capacity of employers to participate in the apprenticeship program and to train apprentices on the job;
6) make periodic evaluations of each apprentices on-the-job training and related and supplemental instruction;
7) ensure safe work site facilities, skilled workers as trainers at the work site, and safe equipment sufficient to train apprentices;
8) determine the qualifications of apprentice applicants and ensure fair and impartial treatment of applicants for apprenticeship selected through uniform selection procedures;
9) file a signed copy, written or electronic, of each apprentice agreement with the Division of Apprenticeship Standards, within 30 days of execution, with copies to all parties to the agreement;
10) establish and utilize a procedure to record and maintain all records of the apprentice's worksite job progress and progress in related and supplemental instruction;
11) establish and utilize a system for the periodic review and evaluation of the apprentice's progress in job performance and related instruction;
12) discipline apprentices, up to and including termination, for failure to fulfill their obligations on-the-job or in related instruction, including provisions for fair hearings;
13) annually prepare and submit a Self-Assessment Review as well as a Program Improvement Plan to the Chief of the Division of Apprenticeship Standards;

14) ensure training and supervision, both on the job and in related instruction, in first aid, safe working practices and the recognition of occupational health and safety hazards;
15) ensure training in the recognition of illegal discrimination and sexual harassment;
16) establish an adequate mechanism to be used for the rotation of the apprentice from work process to work process to ensure the apprentice of complete training in the apprenticeable occupation including mobility between employers when essential to provide exposure and training in various work processes in the apprenticeable occupation;
17) establish an adequate mechanism that will be used to provide apprentices with reasonably continuous employment in the event of a lay-off or the inability of one employer to provide training in all work processes as outlined in the standards;
18) comply with meaningful representation requirements for the interests of apprentices in the management of the program where apprentices are at least equally represented on an advisory panel established by the apprenticeship committee responsible for the operation of the program;
19) adopt changes to these standards, as necessary, subject to the approval of the parties hereto and the Chief of the Division of Apprenticeship Standards.

Article VII Definition of an Apprentice

An apprentice is a person at least 18 years of age, who has met the requirements for selection under the selection procedures of a participating employer, who is engaged in learning a designated craft or trade and who has entered into a written apprentice agreement under the provisions of these standards.

Article VIII Duties of an Apprentice

Each apprentice shall satisfactorily perform all work and learning assignments both on the job and in related instruction and shall comply with the rules, regulations and decisions of the apprenticeship committee.

Article IX Apprentice Agreement

1) Each apprentice agreement shall conform to the State law governing apprentice agreements, and shall be signed by the employer, by the program sponsor, and by the apprentice and must be approved by the apprenticeship committee.
2) Each apprentice shall be furnished with a copy of or be given an opportunity to study these standards before registration. These standards shall be considered a part of the apprentice agreement as though expressly written therein.

Article X Termination and Transfer of Agreements

1) During the probationary period, an apprentice agreement shall be terminated by the apprenticeship committee at the request in writing of either party. After such probationary period, an apprentice agreement may be terminated by the Administrator by mutual agreement of all the parties thereto or cancelled by the Administrator for good and sufficient reason.
2) If an employer is unable to fulfill his/her obligations to train under any apprentice agreement or in the event of a layoff, the apprenticeship committee may, with the approval of the Administrator, transfer such agreement to any other employer if the apprentice consents, and such other employer agrees to assume the obligation of said apprentice agreement.

Article XI Lay-off

1) If for any reason a lay-off of an apprentice occurs, the apprentice agreement shall remain in effect unless cancelled by the Administrator. However, credit for related instruction shall be given when the apprentice continues such instruction during the lay-off.
2) There shall be no liability on the part of the employer, the program, or the committee for an injury sustained by an apprentice engaged in schoolwork at a time when the apprentice is unemployed.

Article XII Controversies

All controversies or differences concerning apprentice agreements that cannot be adjusted locally by the apprenticeship committee or otherwise shall be submitted to the Administrator for determination.

Article XIII Certificate of Completion

1) In addition to previous on-the-job training and related school instruction, which is of an approved nature, the Apprentice shall have completed not less than an additional six (6) months as an apprentice under the laws of the State of California and demonstrated mastery of the skills and knowledge of the prescribed program.
2) In recognition of unusual ability and progress, the apprenticeship committee may decrease the term of apprenticeship for an individual apprentice not more than twelve and one-half percent (12½%).

3) Upon evidence of satisfactory completion of apprenticeship, and upon the recommendation of the apprenticeship committee, each apprentice will be issued a Certificate of Completion by the authority of the Chief of the Division of Apprenticeship Standards and the Interagency Advisory Committee on Apprenticeship.

Article XIV Equal Opportunity in Apprenticeship

The recruitment, selection, employment and training of apprentices during their apprenticeship shall be without discrimination because of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, genetic information, marital status, sex, gender, gender identity, gender expression, age, sexual orientation or veteran or military status.

LIMITLESS Aviation Mechanic Apprenticeship Program will ensure selection procedures meet objective standards and maintain a fair and equitable selection process for all applicants.

Article XV Written Applications

Applications can be obtained, and will be accepted, Monday - Friday, 8 am to 3 pm, at 16550 Saticoy St., Van Nuys, CA 91406.

Article XVI Records

All records will be maintained, in written or electronic form, for five (5) years and kept at:

Attention: Apprenticeship Programs
LIMITLESS Aviation Mechanic Apprenticeship Program
5500 Rickenbacker Road, Bell, CA 90201

Article XVII Annual Compliance

LIMITLESS Aviation Mechanic Apprenticeship Program will submit an annual compliance report to the Division of Apprenticeship Standards as requested by the Division.

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LIMITLESS Aviation Mechanic Apprenticeship Program agrees to accept electronic signatures for these Division of Apprenticeship Standards and all related Division of Apprenticeship Standards documents.

The foregoing standards are hereby agreed to and adopted by LIMITLESS Aviation Mechanic Apprenticeship Program on March 5, 2025 (Committee approval date).

Employer Organization

LIMITLESS Aviation Mechanic Apprenticeship Program

5500 Rickenbacker Road, Bell, CA 90201

_____ _____

Oscar Meier, LAUSD Apprenticeship Advisor Date

The foregoing apprenticeship standards, being in conformity with the applicable California Labor Code, California Code of Regulations and Federal Regulations, are hereby approved

_____.

(DAS approval date)

_____ _____

Adele Burnes, Chief Date

Division of Apprenticeship Standards

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Attachment B
Training Schedule and Working Conditions

LIMITLESS Aviation Mechanic Apprenticeship Program

Occupation

Occupation: Aviation Mechanic
O*Net Code: 49-3011.00

Article I Term of Apprenticeship and Probation

The standard term of apprenticeship shall be hybrid based with 3,750 - 5,280 on-the-job training (OJT) hours, the competencies as described in Article III and 1,755 related and supplemental instruction (RSI) hours and completed within approximately 24 months.

The period of probation shall be reasonable in relation to the full apprenticeship term, with full credit given for such period toward completion of the apprenticeship, and in no event shall exceed the shorter of 25 percent of the length of the program or one year. The period of probation shall be six (6) months.

Article II Wage Schedule

Professional Worker Wage:

$ 32.00 per hour effective 5/6/2025.

Apprentice Wage and Advancement Schedule:

In no case shall an Apprentice receive a starting wage that is less than the applicable federal, state or local entity (city or county) minimum wage, whichever is higher for the county or city where the apprentice is working. The applicable minimum wage law shall establish the effective date of the minimum wage.

To advance from one period to the next, the apprentice shall have met the following requirements:

1st period	0 - 1,875 OJT Hours	$ 22.00 /hour
2nd period	Minimum 1,876 - 3,750 OJT Hours/Acquire Airframe Certification	$ 27.00 /hour
End Wage	Minimum 3,751 OJT Hours/ Acquire Airframe and Powerplant Certifications	$ 32.00 /hour

Hours of Work and Working Conditions and Overtime Provision:

Eight (8) hours of labor constitutes a day's work. Employment beyond eight (8) hours in any workday or more than six (6) days in any workweek requires the employee to be compensated for the overtime at not less than one and one-half times the employee's regular rate of pay for all hours worked in excess of eight (8) hours, up to and including 12 hours in any workday, and for the first eight (8) hours worked on the seventh (7) consecutive day of work in a workweek; and double the employee's regular rate of pay for all hours worked in excess of 12 hours in any workday and for all hours worked in excess of eight (8) on the seventh (7) consecutive day of work in a workweek. If employers utilize an alternative workweek schedule in accordance with the California Industrial Welfare Commission Orders, the overtime will be determined and paid in accordance with the applicable alternative workweek provisions.

The workday and workweek and all other conditions of employment for apprentices shall conform to all applicable laws and regulations and shall not be greater than for those of a professional worker.

Overtime shall not be allowed if it will interfere with or impair the training or be detrimental to the health and safety of the apprentice.

ARTICLE III Work-Training

1) The employer shall see that all apprentices are under the supervision of a qualified professional worker or instructor and shall provide the necessary diversified experience and training in order to develop the apprentice into a proficiently skilled worker, as outlined herein.
2) Each apprentice shall be trained in the use of new equipment, materials and processes as they come into use in the occupation.
3) The major categories in which apprentices will be trained (although not necessarily in the order listed) are as follows:

Required Certifications:

- Federal Aviation Administration - Airframe Certification
- Federal Aviation Administration - Powerplant Certification

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Competency Check List

Demonstrates Fundamentals: Apprentice can perform the task with some coaching.
Proficient in Task: Apprentice performs task properly and consistently.
Completion Date: Date apprentice completes final demonstration of competency.
Detailed Work Activities: Initial and date each task when Competency Check List has been completed.

Work Processes **Approximate Hours**

A. Time Limits, Maintenance Checks 76 - 100 Hours

- Understanding of maintenance program types, terminology, documentation requirements
- Inspection intervals, structural inspections, corrosion prevention, repair procedures
- Engine inspection intervals, hot section inspections, borescope inspections, life-limited parts (LLPs)
- Component inspection intervals, overhaul requirements, system checks
- Hard time limits, on-condition maintenance, service bulletins
- Post-incident inspections, special inspections
- Follows safety, regulatory, and quality assurance requirements
- Communicates effectively and uses teamwork in daily tasks
- Manages time effectively and adapts to unforeseen circumstances

B. Lifting and Shoring 76 - 100 Hours

- Understanding of lifting and shoring principles, safety precautions, equipment requirements, documentation
- Jack types, jacking procedures, safety precautions, jacking point locations
- Shoring types, shoring procedures, safety precautions, shoring point locations
- Tail stand types, installation procedures, safety precautions
- Engine stand/cradle types, installation procedures, safety precautions
- Slings, hoists, cranes, safety precautions
- Follows safety, regulatory, and quality assurance requirements
- Communicates effectively and uses teamwork in daily tasks
- Manages time effectively and adapts to unforeseen circumstances

C. Servicing 76 - 100 Hours

- Fuel tank types, fuel system components, fueling procedures, fuel quality control, troubleshooting fuel leaks
- Oil types, lubrication system components, servicing procedures, oil analysis, troubleshooting lubrication issues

- Hydraulic fluid types, hydraulic system components, servicing procedures, troubleshooting hydraulic leaks
- Potable water systems, wastewater systems, lavatory servicing, troubleshooting
- Oxygen systems, nitrogen systems, inflation systems, troubleshooting
- Follows safety, regulatory, and quality assurance requirements
- Communicates effectively and uses teamwork in daily tasks
- Manages time effectively and adapts to unforeseen circumstances

D. Air Conditioning and Pressurization 101 - 125 Hours

- Ductwork layout, airflow control valves, cabin vents, troubleshooting airflow and temperature inconsistencies
- Temperature sensors, thermostats, control panels, troubleshooting temperature regulation issues
- Vapor cycle system, compressors, heat exchangers, expansion valves, troubleshooting refrigerant leaks and pressure issues
- Heat exchangers, combustion heaters, electric heaters, troubleshooting heating element failures
- Outflow valves, safety valves, pressure controllers, troubleshooting cabin pressure issues
- Airflow sources (bleed air, ram air), filters, recirculation fans, troubleshooting ventilation issues
- Automatic and manual controls, cockpit controls, troubleshooting control malfunctions
- Follows safety, regulatory, and quality assurance requirements
- Communicates effectively and uses teamwork in daily tasks
- Manages time effectively and adapts to unforeseen circumstances

E. Auto Flight (Avionics Technicians) 126 - 200 Hours

- Autopilot components, modes of operation, engagement/disengagement procedures, troubleshooting
- Flight Director System (FDS) operation, modes (lateral and vertical guidance), interaction with autopilot, troubleshooting
- Flight Management System (FMS) operation, flight planning, navigation databases, performance calculations, troubleshooting
- Autothrottle operation, modes (speed hold, thrust management), interaction with autopilot, troubleshooting
- Yaw damper operation, troubleshooting
- Fly-by-wire system architecture, components, operation, redundancy, troubleshooting
- Follows safety, regulatory, and quality assurance requirements

- Communicates effectively and uses teamwork in daily tasks
- Manages time effectively and adapts to unforeseen circumstances

F. Communications (Avionics Technicians) 176 - 250 Hours

- High Frequency (HF) radio principles, antenna types, propagation, troubleshooting HF communication systems
- Very High Frequency (VHF) radio principles, antenna types, modulation, troubleshooting VHF communication systems
- Audio Integration System (AIS) components, audio routing, intercom systems, public address (PA) systems, troubleshooting AIS issues
- In-flight entertainment (IFE) systems, audio/video distribution, troubleshooting IFE issues
- Aircraft Communications Addressing and Reporting System (ACARS), Controller Pilot Data Link Communications (CPDLC)
- Selective Calling (SELCAL) operation, coding/decoding, troubleshooting
- Antenna types, radiation patterns, antenna installation, troubleshooting antenna issues
- Follows safety, regulatory, and quality assurance requirements
- Communicates effectively and uses teamwork in daily tasks
- Manages time effectively and adapts to unforeseen circumstances

G. Electrical Power 126 - 200 Hours

- System architecture, power distribution, AC/DC power, electrical loads, bonding/grounding, electrical safety
- Generators (AC/DC), inverters, transformers, voltage regulators, troubleshooting power generation issues
- Bus bars, contactors, relays, circuit breakers, fuses, wiring, troubleshooting distribution issues
- Battery types (lead-acid, NiCad, Li-ion), battery charging systems, battery maintenance, troubleshooting
- Ground power units (GPUs), external power receptacles, troubleshooting
- Interior/exterior lighting, landing/taxi lights, emergency lighting, troubleshooting
- Follows safety, regulatory, and quality assurance requirements
- Communicates effectively and uses teamwork in daily tasks
- Manages time effectively and adapts to unforeseen circumstances

H. Fire Protection 76 - 100 Hours

- Smoke detectors, overheat detectors, flame detectors, fire detection control units, troubleshooting

- Extinguishing agents (Halon, HFCs, water), fire bottles, engine/Auxiliary Power Unit (APU) fire extinguishing systems, troubleshooting
- Cabin smoke detectors, lavatory smoke detectors, cockpit warning systems
- Handheld fire extinguishers, location, types, inspection, maintenance
- Fuel tank inerting systems, explosion suppression systems in cargo compartments
- Follows safety, regulatory, and quality assurance requirements
- Communicates effectively and uses teamwork in daily tasks
- Manages time effectively and adapts to unforeseen circumstances

I. Flight Controls 126 - 200 Hours

- System operation, component identification (hinges, control surfaces, tabs), rigging, troubleshooting
- System operation, component identification (stabilizers, trim tabs), rigging, troubleshooting
- System operation, component identification (rudder, tabs), rigging, troubleshooting
- System operation, component identification (stabilizer, trim tabs), rigging, troubleshooting
- System operation (leading edge, trailing edge), component identification, rigging, troubleshooting
- System operation, component identification, deployment/retraction mechanisms, troubleshooting
- System operation, component identification, pre-flight checks, troubleshooting
- System operation (mechanical, hydraulic, fly-by-wire), component identification, troubleshooting
- System operation (angle of attack, stall warning), component identification, troubleshooting
- Follows safety, regulatory, and quality assurance requirements
- Communicates effectively and uses teamwork in daily tasks
- Manages time effectively and adapts to unforeseen circumstances

J. Fuel 126 - 200 Hours

- Types of fuel tanks, construction materials, tank access, fuel cell maintenance, inspection and repair procedures, sealant types and application
- Types of fuel lines, fittings and hoses, installation and maintenance procedures, leak detection and repair, proper torquing procedures
- Types of fuel pumps (engine driven, boost, transfer), operation, maintenance, troubleshooting, inspection and replacement procedures
- Fuel quantity probes, indicators, transmitters, fuel management systems, troubleshooting fuel quantity discrepancies
- Jettison system components, operation, maintenance, and troubleshooting

- Refueling and defueling procedures, safety precautions, equipment operation and maintenance, fuel contamination prevention
- Fuel heater types, operation, maintenance, and troubleshooting
- Follows safety, regulatory, and quality assurance requirements
- Communicates effectively and uses teamwork in daily tasks
- Manages time effectively and adapts to unforeseen circumstances

K. Hydraulic Power 176 - 250 Hours

- Reservoir types, construction, servicing, accumulator types, precharge adjustment, troubleshooting
- Pump types (gear, vane, piston), operation, flow control, pressure regulation, troubleshooting
- Actuator types (linear, rotary), operation, seals, troubleshooting
- Valve types (selector, check, relief, sequence), operation, troubleshooting
- Hose types, fittings, proper installation, leak detection, troubleshooting
- Filters, heat exchangers, pressure gauges, warning systems, troubleshooting
- Fluid types, properties, contamination control, sampling procedures, replenishment, troubleshooting
- Follows safety, regulatory, and quality assurance requirements
- Communicates effectively and uses teamwork in daily tasks
- Manages time effectively and adapts to unforeseen circumstances

L. Ice and Rain Protection 76 - 100 Hours

- Understanding of icing types, effects on aircraft, and system principles (e.g., anti-icing vs. de-icing)
- Pneumatic boot systems, electrothermal systems, fluid systems, troubleshooting
- Electrically heated windshields, hot air systems, rain repellent, troubleshooting
- Inlet anti-icing, spinner de-icing, propellor de-icing, troubleshooting
- Pitot/static probe heating, drain mast heating, antenna de-icing, troubleshooting
- Follows safety, regulatory, and quality assurance requirements
- Communicates effectively and uses teamwork in daily tasks
- Manages time effectively and adapts to unforeseen circumstances

M. Indicating / Recording (Avionics Technicians) 76 - 100 Hours

- Primary flight displays (PFD), multi-function displays (MFD), head-up displays (HUD), annunciators
- Built-in test equipment (BITE), central maintenance computers (CMC), data recording
- Flight data recorders (FDR), cockpit voice recorders (CVR), data acquisition systems (DAQ)

- Aural warnings, master caution/warning lights, terrain awareness and warning systems (TAWS)
- Instrument types, principles of operation, calibration
- System maintenance, troubleshooting, fault isolation
- Follows safety, regulatory, and quality assurance requirements
- Communicates effectively and uses teamwork in daily tasks
- Manages time effectively and adapts to unforeseen circumstances

N. Landing Gear 176 - 250 Hours

- Landing gear types, components (shock struts, actuators), operation, extension/retraction cycles, emergency procedures
- Wheel/brake assemblies, tire types, brake systems (disc, carbon), anti-skid systems, maintenance
- Nose wheel steering systems, tiller control, rudder pedal steering, troubleshooting
- Landing gear position indicators, warning systems, control panels, troubleshooting
- Hydraulic systems, electrical systems, sequencing, emergency extension, troubleshooting
- Follows safety, regulatory, and quality assurance requirements
- Communicates effectively and uses teamwork in daily tasks
- Manages time effectively and adapts to unforeseen circumstances

O. Navigation (Avionics Technicians) 176 - 250 Hours

- Magnetic compass principles, compass errors (variation, deviation), compass swing procedures
- Attitude indicators, heading indicators, turn coordinators, troubleshooting
- Air data computer (ADC) operation, pitot-static system, troubleshooting ADC errors
- VHF omnidirectional range (VOR), instrument landing system (ILS), troubleshooting
- Flight management systems (FMS), global navigation satellite systems (GNSS), troubleshooting
- Follows safety, regulatory, and quality assurance requirements
- Communicates effectively and uses teamwork in daily tasks
- Manages time effectively and adapts to unforeseen circumstances

P. Oxygen 76 - 100 Hours

- Crew oxygen masks, quick donning masks, oxygen regulators, supply systems
- Passenger oxygen masks, drop-down masks, oxygen generators, storage systems
- Portable oxygen bottles, oxygen regulators, use instructions, maintenance
- Oxygen cylinder handling, filling procedures, storage requirements, safety regulations

- Oxygen masks, regulators, valves, tubing, fittings, oxygen sensors
- Follows safety, regulatory, and quality assurance requirements
- Communicates effectively and uses teamwork in daily tasks
- Manages time effectively and adapts to unforeseen circumstances

Q. Pneumatic 76 - 100 Hours

- Pneumatic system principles, components, functions, safety precautions
- Ducting, valves, manifolds, pressure regulators, troubleshooting leaks and pressure issues
- Bleed air sources, valves, controls, precoolers, troubleshooting bleed air leaks and temperature control problems
- Pneumatic aspects of air conditioning systems, pack operation, pressurization control, troubleshooting
- Pressurization system components, operation, control, troubleshooting leaks and pressure differentials
- Starting valves, air turbine starters, troubleshooting
- Pneumatic de-icing systems, operation, troubleshooting
- Follows safety, regulatory, and quality assurance requirements
- Communicates effectively and uses teamwork in daily tasks
- Manages time effectively and adapts to unforeseen circumstances

R. Water / Waste 76 - 100 Hours

- Water tank types, pumps, filters, distribution lines, faucets, troubleshooting leaks and contamination
- Toilet types (vacuum, recirculating, chemical), lavatory components, troubleshooting malfunctions
- Water heater types (electric, heat exchanger), troubleshooting temperature and pressure issues
- Waste tank types, drain masts, pumps, troubleshooting leaks and blockages
- Follows safety, regulatory, and quality assurance requirements
- Communicates effectively and uses teamwork in daily tasks
- Manages time effectively and adapts to unforeseen circumstances

S. Onboard Maintenance Systems 51 - 55 Hours

- Understanding of diagnostic and maintenance system principles, architecture, and terminology
- Built-In Test Equipment (BITE) operation, interpreting BITE codes, troubleshooting BITE discrepancies

• Central Maintenance Computer (CMC) operation, accessing and interpreting maintenance messages, using CMC for troubleshooting

• Flight data recorders (FDR), quick access recorders (QAR), data download and analysis

• Engine indicating and crew alerting system (EICAS), central warning system (CWS), maintenance warnings

• Follows safety, regulatory, and quality assurance requirements

• Communicates effectively and uses teamwork in daily tasks

• Manages time effectively and adapts to unforeseen circumstances

T. Auxiliary Power Unit (APU) 126 - 200 Hours

• APU types, operation principles, safety procedures, documentation

• Mounting, connections, interfaces with other systems

• Gas turbine engine components, operation, inspection, repair

• Starting systems, ignition, troubleshooting

• Bleed air system, pressurization, pneumatic power, troubleshooting

• Generators, electrical distribution, controls, troubleshooting

• Fuel system components, fuel control, troubleshooting

• Oil system components, lubrication, oil analysis, troubleshooting

• Follows safety, regulatory, and quality assurance requirements

• Communicates effectively and uses teamwork in daily tasks

• Manages time effectively and adapts to unforeseen circumstances

U. Doors 76 - 100 Hours

• Door types, operation mechanisms (manual, electric, hydraulic), emergency operation, inspection/maintenance

• Cargo door types, operation mechanisms, locking/sealing systems, emergency procedures, inspection/maintenance

• Door position indicators, warning lights/sounds, troubleshooting

• Seal types, installation/removal procedures, inspection/maintenance, troubleshooting leaks

• Lock types, latch mechanisms, opening mechanisms, inspection/maintenance, troubleshooting

• Follows safety, regulatory, and quality assurance requirements

• Communicates effectively and uses teamwork in daily tasks

• Manages time effectively and adapts to unforeseen circumstances

V. Fuselage 176 - 250 Hours

- Structural inspection, repair, corrosion prevention, fastener installation, alignment
- Bulkheads, stringers, floor beams, reinforcement plates, inspection, repair
- Skin inspection, repair, corrosion prevention, sealant application, rivet/fastener installation
- Inspection, repair, replacement, torque values, fastener installation
- Inspection, repair, alignment
- Follows safety, regulatory, and quality assurance requirements
- Communicates effectively and uses teamwork in daily tasks
- Manages time effectively and adapts to unforeseen circumstances

W. Stabilizers 126 - 200 Hours

- Understanding of stabilizer types, functions, and construction materials
- Inspection, repair, and replacement procedures for horizontal stabilizers
- Inspection, repair, and replacement procedures for elevators, trim tabs, and associated control mechanisms
- Inspection, repair, and replacement procedures for vertical stabilizers and associated structural components
- Inspection, repair, and replacement procedures for rudders, trim tabs, and associated control mechanisms
- Follows safety, regulatory, and quality assurance requirements
- Communicates effectively and uses teamwork in daily tasks
- Manages time effectively and adapts to unforeseen circumstances

X. Windows 126 - 200 Hours

- Window types (fixed, sliding), construction, materials, sealants, inspection/maintenance procedures, troubleshooting leaks, cracks, delamination
- Window types, construction, materials, sealants, inspection/maintenance procedures, emergency exit window operation, troubleshooting leaks, cracks, delamination
- Window types, construction, materials, sealants, inspection/maintenance procedures, troubleshooting leaks, cracks, delamination
- Window types, construction, materials, inspection/maintenance procedures, troubleshooting leaks, cracks, delamination
- Operation, maintenance, troubleshooting
- Follows safety, regulatory, and quality assurance requirements
- Communicates effectively and uses teamwork in daily tasks
- Manages time effectively and adapts to unforeseen circumstances

Y. Wings 226 - 300 Hours

- Wing structure, fuel tanks, wing-to-fuselage attachment, inspection and repair procedures
- Wing structure, fuel tanks, leading/trailing edge devices, inspection and repair procedures
- Wingtip construction, navigation lights, anti-collision lights, inspection and repair procedures
- Slat/flap systems, actuation mechanisms, inspection and repair procedures
- Flap systems, actuation mechanisms, inspection and repair procedures
- Control surface operation, rigging, inspection, and repair procedures
- Spoiler operation, deployment mechanisms, inspection, and repair procedures
- Follows safety, regulatory, and quality assurance requirements
- Communicates effectively and uses teamwork in daily tasks
- Manages time effectively and adapts to unforeseen circumstances

Z. Powerplant 125 - 200 Hours

- Mounting systems, installation/removal procedures, engine alignment, interface with other systems
- Cowling types, removal/installation, inspection/repair, thrust reverser operation, inlet/exhaust systems
- Mount types, inspection/maintenance, vibration analysis, repair/replacement
- Follows safety, regulatory, and quality assurance requirements
- Communicates effectively and uses teamwork in daily tasks
- Manages time effectively and adapts to unforeseen circumstances

AA. Engine 175 - 200 Hours

- Inlet design, fan types, blade construction, damage assessment, repair procedures
- Combustor types, fuel injection, ignition systems, liner materials, damage assessment, repair procedures
- Turbine stages, blade types, cooling systems, damage assessment, repair procedures
- Engine control systems Full Authority Digital Engine Control (FADEC), engine monitoring systems, troubleshooting
- Engine inspection procedures, repair techniques
- Follows safety, regulatory, and quality assurance requirements
- Communicates effectively and uses teamwork in daily tasks
- Manages time effectively and adapts to unforeseen circumstances

BB. Engine Fuel and Control 175 - 200 Hours

- Understanding of fuel system types, fuel system diagrams and schematics

- Fuel tanks, fuel lines, fuel pumps, fuel filters, fuel heaters, fuel valves, crossfeed systems, troubleshooting leaks
- Fuel metering units (FMU), fuel control units (FCU), electronic engine controls (EEC), troubleshooting fuel control issues
- Fuel quantity indicators, fuel flow indicators, fuel pressure indicators, troubleshooting instrumentation errors
- Follows safety, regulatory, and quality assurance requirements
- Communicates effectively and uses teamwork in daily tasks
- Manages time effectively and adapts to unforeseen circumstances

CC. Ignition 75 - 100 Hours

- Ignition system components, operation principles, troubleshooting
- Starting system components, starting procedures, troubleshooting
- Follows safety, regulatory, and quality assurance requirements
- Communicates effectively and uses teamwork in daily tasks
- Manages time effectively and adapts to unforeseen circumstances

DD. Engine Controls 75 - 100 Hours

- Engine control modes (manual, automatic), throttle systems, thrust levers, Full Authority Digital Engine Control (FADEC)
- Engine shutdown procedures (normal and emergency), fire detection and suppression systems, fuel shut-off valves
- Follows safety, regulatory, and quality assurance requirements
- Communicates effectively and uses teamwork in daily tasks
- Manages time effectively and adapts to unforeseen circumstances

EE. Exhaust 75 - 100 Hours

- Exhaust manifolds, tailpipes, exhaust cones, nozzles, clamps, hangers, seals, insulation
- Types of thrust reversers, operation, maintenance, troubleshooting
- Exhast Gas Temperature (EGT) probes, thermocouples, wiring, instrumentation, troubleshooting
- Auxilliary Power Unit (APU) exhaust system components, maintenance, troubleshooting
- Follows safety, regulatory, and quality assurance requirements
- Communicates effectively and uses teamwork in daily tasks
- Manages time effectively and adapts to unforeseen circumstances

FF. Oil 75 - 100 Hours

- Tank/reservoir types, construction, inspection, maintenance, troubleshooting leaks

- Pump types (gear, gerotor, etc.), scavenge systems, operation, inspection, troubleshooting
- Air-oil coolers, fuel-oil coolers, operation, inspection, cleaning, troubleshooting
- Filter types (full-flow, bypass), operation, replacement intervals, troubleshooting
- Line types, fitting types, seals, quick disconnects, troubleshooting
- Pressure gauges, temperature gauges, quantity gauges, troubleshooting
- Follows safety, regulatory, and quality assurance requirements
- Communicates effectively and uses teamwork in daily tasks
- Manages time effectively and adapts to unforeseen circumstances

GG. Starting 75 - 100 Hours

- Starting system components, starting procedures, troubleshooting
- Follows safety, regulatory, and quality assurance requirements
- Communicates effectively and uses teamwork in daily tasks
- Manages time effectively and adapts to unforeseen circumstances

Total 3750 - 5280 Hours

ARTICLE IV Related Instruction

Apprentices shall satisfactorily complete prescribed courses of related and supplemental instruction, which will not be less than 1,755 hours. Related and supplemental instruction will be provided by Los Angeles Unified School District.

Time spent in related and supplemental instruction may not be compensated.

Classes	Hours
79-70-63 Aviation Mechanic - Airframe I Structures	(292.5 Hours)
79-70-66 Aviation Mechanic - Airframe II Components	(292.5 Hours)
79-70-69 Aviation Mechanic - Systems I Airframe	(292.5 Hours)
79-70-73 Aviation Mechanic - Systems II Powerplant	(292.5 Hours)
79-70-76 Aviation Mechanic - Powerplant I Reciprocating Engines	(292.5 Hours)
79-70-79 Aviation Mechanic - Powerplant II Turbine Engines	(292.5 Hours)
Total	**1,755 Hours**

ARTICLE V Ratio

The ratio of apprentices to professional workers shall be:

1) Ratio #1: Each professional worker may supervise one (1) apprentice(s)