

Instructional Framework

Aircraft Mechanics
47.0600.50



Domain 1: Regulatory	
Instructional Time: 25-30%	
STANDARD 3.0 Weigh and Balance Aircraft	
3.1 Weigh Aircraft	<ul style="list-style-type: none"> • Understanding of definitions of Datum, Arm, and Moment • Preparation for weighing • Understanding of Tare, Ballast, Residual Fuel / Oil • Understanding of TCDS • Adverse loading conditions • Understanding of Mean Aerodynamic Chord (MAC)
3.2 Perform weight and balance check and record data	<ul style="list-style-type: none"> • Item/Weight/Arm/Moment Calculations
STANDARD 8.0 Maintenance Forms, Records, and Publications	
8.1 Write descriptions of work performed using typical aircraft maintenance records	<ul style="list-style-type: none"> • FAR 43.9 • Mechanics certificate types • Aircraft maintenance specifications
8.2 Complete required maintenance forms, records, and inspection reports	<ul style="list-style-type: none"> • Log page • FAA 337 major repair or alteration • Minor/major repair • Minor/major alteration • FAR 43 91 121
8.3 Apply information from maintenance publications	<ul style="list-style-type: none"> • Aircraft maintenance specifications • AC 43.13-1B • FAA approved date • Airworthiness directives
STANDARD 10.0 Interpret Mechanical Privileges and Limitations	

10.1 Identify mechanic privileges within the limitations prescribed by FAR Part 65	<ul style="list-style-type: none"> ● Location of privileges ● Airframe certificate privileges ● Powerplant certificate privileges ● Airframe certificate limitations ● Powerplant certificate limitations ● Major repairs ● Minor repairs ● Alterations ● 100 hour inspections ● Annual inspections ● Special inspections ● Preventative maintenance ● Recent experience requirement
10.2 Identify the information in FAR Part 65 pertaining to eligibility for Aviation Maintenance Technician certification and ratings	<ul style="list-style-type: none"> ● Length of experience required ● Practical experience required ● Minimum age ● Revocation and suspension ● Inspection Authorizations

<p>Domain 2: Basic Processes</p> <p>Instructional Time: 25-30%</p>	
<p>STANDARD 4.0 Maintain and Repair Fluid Lines and Fittings</p>	
4.1 Fabricate and install rigid fluid lines	<ul style="list-style-type: none"> ● Measure, cut, bend and flare ● Read measurements and formulas ● Identify correct type of tubing ● Fitting selection ● Pressure testing
4.2 Fabricate and install flexible fluid lines	<ul style="list-style-type: none"> ● Measure, cut, bend and flare ● Read measurements and formulas ● Identify correct type of tubing ● Fitting selection ● Pressure testing
<p>STANDARD 5.0 Inspect and Test Aircraft Welds and Materials</p>	
5.1 Identify and select nondestructive testing processes	<ul style="list-style-type: none"> ● Dye penetrant ● Radiograph ● Eddy current ● Magnetic particle

	<ul style="list-style-type: none"> ● Ultrasonic
5.2 Identify and select aircraft hardware and materials	<ul style="list-style-type: none"> ● AN, NAS, MS standards ● Manufacturer markings ● SAE material code ● Interpret symbols ● Diameter and length measurements ● Alloys ● Material strength test ● Material stress ● Heat treatment
5.3 Perform precision measurements	<ul style="list-style-type: none"> ● Proper calibration ● Vernier scale ● Decimal place ● Dial gauge ● Runout ● Part preparation
STANDARD 7.0 Perform Aircraft Cleaning and Corrosion Control	
7.1 Identify and select aircraft cleaning materials	<ul style="list-style-type: none"> ● Approved cleaning agents ● Aircraft maintenance specifications ● Aluminum cleaning agents ● Caustic cleaning agents ● Chemical removal of oil and grease ● Mechanical removal of oil and grease ● MSDS
7.2 Identify types of aircraft corrosion	<ul style="list-style-type: none"> ● Direct chemical corrosion ● Electrochemical corrosion ● Corrosion prone areas ● Environmental factors ● Stresses ● Oxides
7.3 Identify corrosion removal techniques	<ul style="list-style-type: none"> ● Chemical removal of corrosion ● Mechanical removal of corrosion ● Metallic structures ● Non-metallic structures
7.4 Identify corrosion treatment techniques	<ul style="list-style-type: none"> ● Protective coating to a metallic material. ● Protective coating or treatment to a non-metallic material. ● Post wash treatments ● Aircraft maintenance specifications ● AC 43-13.1B

Domain 3: Basic Electricity

Instructional Time: 15-20%

STANDARD 1.0 Perform Electrical Maintenance and Repair

1.1 Calculate and measure electrical power	<ul style="list-style-type: none">● Ohm's Law formula● Watt's Law● Kirchhoff's Law for voltage and current
1.2 Measure Voltage, current, resistance, and continuity	<ul style="list-style-type: none">● Multimeter connection● Multimeter reading● Troubleshooting
1.3 Determine the relationship of voltage, current, and resistance in electrical circuits	<ul style="list-style-type: none">● Series circuits● Parallel circuits● Series/parallel circuits● Ohm's Law calculations
1.4 Read interpret aircraft electrical circuit diagrams, including solid-state devices and logic functions	<ul style="list-style-type: none">● Electrical diagram types● Electrical symbols● Read electrical diagrams● Logic gates

Domain 4: Basic Principles of Flight

Instructional Time: 15-20%

STANDARD 2.0 Prepare Aircraft Drawings

2.1 Identify aircraft drawings and symbols and interpret system schematics	<ul style="list-style-type: none">● Understanding of line types and their definitions● Understanding drawing symbols and legend identification● Identifying title blocks
2.2 Draw sketches of repairs and alterations	<ul style="list-style-type: none">● Understanding the chronological steps in creating a sketch● Understanding line types and uses
2.3 Interpret graphs and charts prior to maintaining and repairing systems	<ul style="list-style-type: none">● Understanding steps to reading charts and graphs

STANDARD 9.0 Apply Basic Physics to Aircraft Systems

9.1 Use and understand the principles of simple machines	<ul style="list-style-type: none">● 5 types of machines● Mechanical advantage calculations● Work force relationship
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9.2 Use and understand the principles of sound, fluid, and heat dynamics	<ul style="list-style-type: none"> ● sound resonance ● specific gravity ● Pascal's laws ● Boyle's laws ● Charles's laws ● forms of energy ● thermal dynamics ● density ● conduction, convection & radiation
9.3 Use and understand the principles of basic aerodynamics	<ul style="list-style-type: none"> ● forces of flight ● Force area pressure relationship ● Airfoil
9.4 Use and understand the principles of aircraft structures	<ul style="list-style-type: none"> ● Aerodynamic factors ● Material selection ● Manufacturing process ● Material stress, torsion / shear ● Vibration ● Primary structure ● Secondary structure ● Controls
9.5 Use and understand the principles of theory of flight	<ul style="list-style-type: none"> ● Lift, thrust, weight & drag ● Bernoulli's principle ● Density altitude ● Temperature, and/or pressure, and/or humidity

Domain 5: Basic Operations	
Instructional Time: 5-10%	
STANDARD 6.0 Perform Ground Operations and Services	
6.1 Identify types of fires and fire extinguishers	<ul style="list-style-type: none"> ● Fire types and classes ● Fire extinguisher types ● Fire extinguisher selection ● Fire extinguisher use
6.2 Identify safe practices in aircraft fueling and handling	<ul style="list-style-type: none"> ● Electrical grounding of equipment ● Types of fuel ● Fuel contamination ● Automotive fuel ● Fuel additives ● Fuel caps

	<ul style="list-style-type: none">● Single point connection● Fuel control panels● Fuel spills● De-fueling● Fueling equipment
6.3 Identify aircraft ground movement procedures	<ul style="list-style-type: none">● ATC● Airport ground control● Airport tower control● Uncontrolled airfield● Starting a reciprocating engine aircraft● Starting a turbine aircraft● Taxiing● Towing● Runways● Taxiways
6.4 Identify procedures for securing aircraft in a variety of conditions	<ul style="list-style-type: none">● Adverse weather conditions and hazards● Aircraft tie downs● Aircraft chocks● Control locks● Engine covers● Pitot static covers