



Great Oaks Aviation Maintenance Technician Essential Skills Profile

This profile provides an outline of the skills required for successful completion of this career program. Additional information is located on the Great Oaks website at <http://hs.greatoaks.com/essential-skills-high-school-programs/> and selecting the corresponding career program.

Recommended WorkKeys® Scores for Aviation Maintenance Technician

Applied Mathematics-4	Graphic Literacy-4
Workplace Documents-5	

*Practice tests and more information at www.act.org/workkeys

Essential Skills Needed to Successfully Complete the Program			
Rating Key:	Low = Slightly Essential	Medium = Essential	High = Very Essential

Key Vocational Factors		Rating
Visual Acuity	The ability to detect differences/details visually	High
Depth Perception	The ability to detect the physical distance/depth of objects in space and time	High
Oral Communication	The ability to express/explain ideas	Medium
Oral Expression	The ability to verbally explain and express self in an intelligible manner so others will understand	Medium
Written Communication	The ability to communicate in a written format and record information accurately	Medium
Physical Mobility/Strength	Extended standing, bending, stooping, use of ladders, working inside and outside, and working on equipment or at high levels above the ground	Medium
Eye-hand Coordination	The ability to use tools	High
Auditory Acuity	The ability to detect differences in pitch and sound	Medium
Safety Understanding	Able to comprehend hazards of working with tools, materials, equipment, and environmental conditions; able to wear personal protective equipment suitable for task	High
Mechanical Aptitude and Reasoning Skills	Able to problem solve at high and complex levels with an understanding of mechanics	High

Worker Trait Skills	Rating
Ability to get along with others	High
Ability to work independently, without close supervision	High
Ability to work toward work including tasks of minimal interest	Medium
Ability to follow and retain: Multistep oral instructions	High

Written instructions/technical manuals - multistep	High
Simple to complex diagram instructions	High
Visual models or demonstrated instructions	High
Ability to use tools of trade both metric and standard (screwdrivers, punches or nail sets or drifts, metal cutters, lifts, integrated maintenance information systems, etc.)	High
Ability to use numerical data (count, measure, compute, etc.) in applied setting	High
Ability to discriminate between objects of similar:	
Size	High
Shape	Medium
Color	Medium
Spatial relationship	Medium
Ability to organize work process/follow defined procedures	High
Ability to recognize and apply sequential steps	Medium
Dexterity-fine finger	Medium
Active Listening: Give full attention to what other people are saying, taking time to understand the points being made, asking appropriate questions and not interrupting	High
Operation Monitoring: Watching gauges, dials, or other indicators to make sure machine is working properly	High
Equipment Maintenance: Performing routine maintenance on equipment and determining when and what kind of maintenance is needed	High
Repairing: Repairing machines or systems using the needed tools	High
Able to perform with noise, dirt, grease, and fumes	High
Detail oriented	High
Strong high school math and science skills	High
NO Modifications allowed on FAA Certification-Airframe Certifications Test	High

Reading Skills *See Recommended WorkKeys® Scores Above	
Grade level: Text Readability 9.6	
Math Skills *See Recommended WorkKeys® Scores Above	
Counting-Recording-Comparing-Calculating	Whole numbers and decimals
Calculating fractions, decimals, ratios, order of operations	Pre-Algebra and Geometry
Ratio, Algebra, Formulas, Square Roots	Geometry
Advanced Algebra	Grade Level 9+

Additional Abilities Required

Control Precision	The ability to quickly and repeatedly adjust the controls of a machine or a vehicle to exact positions.
Finger Dexterity	The ability to make precisely coordinated movements of the fingers of one or both hands to grasp, manipulate, or assemble very small objects.
Information Ordering	The ability to arrange things or actions in a certain order or pattern according to a specific

	rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations).
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Knowledge Required in Aviation Maintenance Technician Field

Mechanical	Knowledge of machines and tools, including their designs, uses, repair, and maintenance.
English Language	Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
Engineering and Technology	Knowledge of the practical application of engineering science and technology. This includes applying principles, techniques, procedures, and equipment to the design and production of various goods and services.

Technology

Inventory management software	Information retrieval or search software
Facilities management software	Data base user interface and query software
Analytical or scientific software	

Aviation Maintenance Technician Work Activities

Inspect completed work to certify that the maintenance meets standards.	Examine and inspect aircraft components, including landing gear, hydraulic systems, and deicers.
Conduct routine and special inspections as required by regulations.	Maintain repair logs, documenting all preventive and corrective aircraft maintenance.
Read and interpret maintenance manuals, service bulletins, and other specifications to determine the feasibility and method of repairing or replacing malfunctioning or damaged components.	Modify aircraft structures, space vehicles, systems, or components, following drawings, schematics, charts, engineering orders, and technical publications.
Inspect airframes for wear or other defects.	Measure parts for wear, using precision instruments.
Examine engines through specially designed openings while working from ladders or scaffolds, or use hoists or lifts to remove the entire engine from an aircraft.	Check for corrosion, distortion, and invisible cracks in the fuselage, wings, and tail, using x-ray and magnetic inspection equipment.
Maintain, repair, and rebuild aircraft structures, functional components, and parts such as wings and fuselage, rigging, hydraulic units, oxygen systems, fuel systems, electrical systems, gaskets, and seals.	Read and interpret pilots' descriptions of problems to diagnose causes.

Obtain fuel and oil samples, and check them for contamination.	Replace or repair worn, defective, or damaged components, using hand tools, gauges, and testing equipment.
Disassemble engines and inspect parts, such as turbine blades and cylinders, for corrosion, wear, warping, cracks, and leaks, using precision measuring instruments, x-rays, and magnetic inspection equipment.	Test operation of engines and other systems, using test equipment such as ignition analyzers, compression checkers, distributor timers, and ammeters.
Measure the tension of control cables.	Remove or install aircraft engines, using hoists or forklift trucks.
Spread plastic film over areas to be repaired to prevent damage to surrounding areas.	Assemble and install electrical, plumbing, mechanical, hydraulic, and structural components and accessories, using hand or power tools.
Locate and mark dimensions and reference lines on defective or replacement parts, using templates, scribes, compasses, and steel rules.	Fabricate defective sections or parts, using metal fabricating machines, saws, brakes, shears, and grinders.
Reassemble engines following repair or inspection and reinstall engines in aircraft.	Clean, refuel, and change oil in line service aircraft.
Service and maintain aircraft and related apparatus by performing activities such as flushing crankcases, cleaning screens, and lubricating moving parts.	Trim and shape replacement body sections to specified sizes and fits and secure sections in place, using adhesives, hand tools, and power tools.
Cure bonded structures, using portable or stationary curing equipment.	Listen to operating engines to detect and diagnose malfunctions such as sticking or burned valves.
Install and align repaired or replacement parts for subsequent riveting or welding, using clamps and wrenches.	Remove or cut out defective parts or drill holes to gain access to internal defects or damage, using drills and punches.
Accompany aircraft on flights to make in-flight adjustments and corrections.	Inventory and requisition or order supplies, parts, materials, and equipment.
Clean engines, sediment bulk and screens, and carburetors, adjusting carburetor float levels.	Communicate with other workers to coordinate fitting and alignment of heavy parts, or to facilitate processing of repair parts.
Remove, inspect, repair, and install in-flight refueling stores and external fuel tanks.	Prepare and paint aircraft surfaces.

Available Certifications

Federal Aviation Administration Aviation Maintenance Technician Certification taken after graduation. (12 Points)	CPR/First Aid Certification (1 Point)
OHSA 10-General Industry (1 Point)	General/Airframe License
ECSI (Emergency Care and Safety Institute)	

Possible College Credits

College Credit Plus in English, Math, Social Studies, or Science	Must be preapproved. Must pass a college course at an Ohio college or College Credit Plus class at Great Oaks.
Articulated Credit	Great Oaks has agreements with certain colleges that may give you credits for a specific degree. Possible agreements are: <ul style="list-style-type: none"> • Cincinnati State Technical and Community College (Aviation Mechanics Airframe Certificate, up to 55 credit hours possible) • Southern State Community College (Engineering: Aviation Maintenance, up to 58 credit hours possible)
Career Technical Credit Transfer	The Ohio Transfer to Degree Guarantee helps career and technical students transfer credits earned in high school to community college or four-year degree programs. The credit can be used at any Ohio public college or university: <ul style="list-style-type: none"> • If you successfully completed your Career-Technical program and passed certain required assessments. • If you attend a similar program at a public Ohio college or university. For more information, go to www.transfercredit.ohio.gov

*Additional college or post-secondary education may be required in this field

Possible Career Pathways

FAA-Certified Airframe Mechanic	Aircraft Salesperson
Airline Mechanic	General Manager