AMT A152: GENERAL AIRFRAME & POWERPLANT FUEL SYSTEMS - FAA

Item	Value
Curriculum Committee Approval Date	12/08/2021
Top Code	095000 - Aeronautical and Aviation Technology
Units	2 Total Units
Hours	90 Total Hours (Lecture Hours 18; Lab Hours 72)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	Yes
Basic Skills	Not Basic Skills (N)
Repeatable	No
Open Entry/Open Exit	No
Grading Policy	Standard Letter (S)

Course Description

Theory of fuel systems and lines and fittings. Practical experience in repair, check, service, overhaul, testing, and troubleshooting of fuel systems and system component parts. Transfer Credit: CSU.

Course Level Student Learning Outcome(s)

1. Identify, inspect, repair and troubleshoot airframe fuel systems and components.
2. Identify, inspect, repair and troubleshoot aircraft powerplant fuel systems and components.
3. Fabricate and install rigid and flexible fluid lines.

Course Objectives

- 1. Bend aluminum tubing to specifications
- 2. Form a bead on aluminum tube to specifications
- 3. Demonstrate the fabrication of flares on aluminum tubing
- 4. Demonstrate the fabrication of flexible hose assemblies.
- 5. Select correct hose materials for specific aircraft fluids
- 6. Install hose assemblies to FAA specifications
- 7. Inspect and recognize defects in metal tubing.
- 8. Install and inspect installations of metal tubing.
- 9. Inspect and describe the three types of fuel tanks.
- 10. Explain the operation, inspection, service, troubleshooting and repair of fuel valves, pumps, filters.
- 11. Describe the operation, inspection and repair of aircraft fuel quantity systems.
- 12. Describe the inspection, operation, checking and repair of aircraft pressure fueling systems.
- 13. Describe the operation, checking and servicing of aircraft fuel dump system.
- 14. Explain the procedures for performing fuel transfer and de-fueling.

Lecture Content

AIRCRAFT FUEL SYSTEMS Inspect, check, service, troubleshoot and repair aircraft fuel systems Inspect and service fuel tank Inspect, check, service, troubleshoot and repair fuel valves and fuel pumps Repair aircraft fuel system components Interpret information pertaining to repair of fuel system components Inspect and repair fuel quantity indicator system Inspect and repair fuel quantity indicator system Inspect, check and repair pressure fueling system Describe the inspection, checking and repair of pressure fueling systems Check and service fuel dump systems Describe the checking and servicing of a fuel dump system Perform fuel transfer and defueling Perform fuel transfer and defueling Troubleshoot, service and repair fuel pressure and temperature warning system Troubleshoot, service and repair fuel pressure and temperature warning systems ENGINE FUEL SYSTEMS Inspect, check, service, troubleshoot and repair engine fuel systems Interpret Federal Aviation Regulations governing fuel systems Inspect, check, service, troubleshoot and repair and engine fuel system Repair engine fuel system components Describe the operation of fuel pumps and remove and install a pump on an engine Describe the operation of auxiliary and boost pumps, remove and install an auxiliary or boost pump in a system Additional lab time spent utilizing computer-based software FLUID LINES AND FITTINGS Fabricate and install rigid and flexible fluid lines and fittings Bend aluminum and stainless steel tubing Form a bead on tubing Fabricate flares on tubing Fabricate and install flexible hose s Recognize defects in metal tubing Install a section of tubing

Lab Content

Faculty input required.

Method(s) of Instruction

- Lecture (02)
- Lab (04)

Instructional Techniques

1. Detailed multimedia/lectures of each topic covered. 2. Student feedback during each lecture. 3. Detailed illustrative discussion of textbook examples. 4. Concentration on schematic reading and system operation fault diagnosis. 5 Practical troubleshooting. 6. Laboratory exercises pertaining to subjects discussed during which students work individually or in small groups.

Reading Assignments

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Writing Assignments

Student must show proficiency in writing logbook entries using correct punctuation, sentence structure and readability.

Out-of-class Assignments

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Demonstration of Critical Thinking

Interview, list, multiple choice exams, and short answer.

Required Writing, Problem Solving, Skills Demonstration

Student must show proficiency in writing logbook entries using correct punctuation, sentence structure and readability.

Textbooks Resources

1. Required Jeppesen. AC43.13-1B2A, Acceptable Methods, Techniques, and Practices-Aircraft Inspection and Repair, ed. Superintendent of Documents; U.S. Government Printing Office, 2001 Rationale: - 2. Required Jeppensen. AP Technician ?GENERAL? Textbook, ed. Englewood: Jeppesen Sanderson, 2000 Rationale: latest 3. Required Jeppensen. AP Technician ?AIRFRAME? Textbook, ed. Englewood: Jeppesen Sanderson, 2004 Rationale: - 4. Required Kroes, Michael J., and James R. Rardon. Aircraft Basic Science, 7th ed. New York: Glencoe/McGraw-Hill, 1993 Rationale: - 5. Required Kroes, Michael J., et al. . Aircraft Maintenance Repair, 6th ed. New York: Glencoe/McGraw-Hill, 2007