CHOOSE AEROSPACE

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Aviation Maintenance Curriculum

Fluid Lines and Fittings Course Syllabus

About The Course:

The Fluid Lines and Fittings course is designed to align with general knowledge and skill requirements set forth in Federal Aviation Administration's Mechanic Airman Certification Standards.

This course will help the learner to identify the common materials, applications, preparation, installation and repair of rigid and flexible fluid lines used in the various pressurized fluid systems in an aircraft. Learners will learn about the proper material and fitting selection as well as proper preparation methods for fabrication and repair of rigid fluid lines. Furthermore, learners will also gain an understanding of the various aspects of proper rigid and flexible hose assembly installation. This knowledge is necessary for the technician's ability to properly inspect, maintain, and repair of an airplane's various fluid lines to ensure reliable operation of the various fluid systems during flight.

Couse Number: FAA-ACS-AM-ID-FLF

ACS Reference: Fluid Lines and Fittings (AM.I.D)

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Course Objectives:

1. Identify the common materials, types, sizes, and construction categories used in rigid and flexible fluid line assemblies, and discuss their characteristics, applications, and compatibility concerns.
2. Choose the appropriate rigid tube or flexible hose material, size, and fittings based on fluid type, pressure, vibration, heat, movement, and environmental exposure.
3. Apply the correct repair or replacement method for leaky, faulty, or failed rigid tube and flexible hose fittings.
4. Inspect fluid line assemblies and installations for signs of damage or failure and determine whether repair is permitted or replacement is required.
5. Evaluate and identify the correct fabrication procedure for replacement rigid tube or flexible hose assemblies, including material selection, cutting, bending, flaring, beading, fitting preparation, assembly, and testing requirements.
6. Identify correct installation practices for rigid tube and flexible hose assemblies, including proper support, clearance, slack, flex, bend radius, alignment, and absence of twist or excessive bends.

Module 1: Rigid Fluid Lines

- Lesson 1.1 - Introducing Rigid Fluid Lines
- Lesson 1.2 - Rigid Fluid Lines Materials
- Lesson 1.3 - Fabricating Rigid Fluid Lines: Part 1
- Lesson 1.4 - Fabricating Rigid Fluid Lines: Part 2
- Lesson 1.5 - Rigid Fluid Line Identification, Fittings, Installation, and Repair

Module 2: Flexible Hose Fluid Lines

- Lesson 2.1 - Flexible Hose Fluid Line Materials, Construction, and Inspection
- Lesson 2.2 - Flexible Hose Installation
- Lesson 2.3 - Risk Management

SkilRedi simulations included in this course:

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- Fabricating a rigid tube assembly
- Fabricating a flareless fitting
- Flexible fluid line

Hands on labs

- Fabricating Rigid Fluid Lines
- Fabricating a Flexible Hose

Each lesson contains the following:

- Lesson Objectives
- Video lecture
- Multiple readings with interactive animations
- Assigned readings in the applicable FAA 8083 Chapter
- Summary and Key Terms
- Assessment Activities

Each Module contains the following:

- Standards and Objectives
- Pre-Assessment
- Key Concepts and Terms
- Further Study
- Module Quiz
- Module Critical Thinking Activity
- Module Survey

Each Course contains the following:

- Course Pre-Test
- Course Introduction
- Course Comprehensive Assessment
- Course Survey

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