



## Aviation Maintenance Curriculum

### Materials, Processes, and Hardware Course Syllabus

**Summary:** Upon completion of this course, students will identify different materials and hardware used in the fabrication and maintenance of aircraft. They will become proficient in identifying acceptable hardware, control cable components as well as their installation and safety. Students will identify satisfactory solder and weld joints and demonstrate an understanding of various non-destructive inspection processes, as well as properly use and interpret measurement tools.

**Course Number:** FAA-PART-147-MPH101

**FAA Mechanic Airman Certification Standard Reference:** Aircraft Materials, Hardware and Processes (AM.I.E)  
Inspection Concepts and Techniques (AM.I.K)

**Topics Covered:**

1. Metallic and non-metallic materials
2. Aircraft control cables and hardware
3. Non-destructive inspection
4. Welding procedures and inspection
5. Layout and measurement tools
6. Associated human factors

**Activities:**

- A. Determine materials for aircraft repair
- B. Identify materials and hardware based on manufacturer markings
- C. Select and install aircraft bolts and properly torque
- D. Install safety wire
- E. Identify control cable components and fabricate a cable assembly
- F. Perform non-destructive inspection
- G. Visually inspect welds
- H. Make precision measurements using a tool with vernier scale

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