



Aviation Maintenance Curriculum

Weight and Balance Syllabus

Summary:

The weight of an aircraft and its balance are extremely important for operating an aircraft in a safe and efficient manner. When a manufacturer designs an aircraft and the FAA certifies it, the specifications identify the aircraft's maximum weight and the limits within which it must balance. An aircraft that does not have good balance can exhibit poor maneuverability and controllability, making it difficult or impossible to fly. Safety is the primary reason for concern about an aircraft's weight and balance.

This course offers multimedia learning tools covering critical topics such as type certificate data sheet, weight and balance data, procedures for weight and aircraft, weight and balance equipment, and terminologies. Learners are guided in understanding and exploring these concepts through various multimedia elements, interactivity, testing, and evaluation designed to keep students engaged throughout the learning process.

Course Number:

FAA-ACS-AM-IC-WAB

ACS Reference:

Weight and Balance (AM.I.C)

Topics Covered:

1. Weight and Balance Control
2. Procedures for Weight and Balance
3. Loading and Extreme Conditions
4. Graphs, Records, and Other Considerations

Activities:

- A. Aircraft Labeling
- B. Aircraft Weighing

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Weight and Balance Course Outline

Module 1: Weight and Balance Control

- Lesson 1.1 – Weight and Balance System
- Lesson 1.2 – Need and Requirements for Aircraft Weighing
- Lesson 1.3 – Weight and Balance Terminology

Module 2: Procedures for Weight and Balance

- Lesson 2.1 -General Concepts
- Lesson 2.2 – Weight and Balance Data
- Lesson 2.3 – Weight and Balance Equipment
- Lesson 2.4 – Preparing an Aircraft for Weighing
- Lesson 2.5 – Aircraft Jacking

Module 3: Loading and Extreme Conditions

- Lesson 3.1 – Weighing the Aircraft
- Lesson 3.2 – Loading an Aircraft for Flight
- Lesson 3.3 – Center of Gravity Range
- Lesson 3.4 – Weight and Balance Extreme Conditions
- Lesson 3.5 – Lab

Each lesson contains the following:

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

Each Module contains the following:

- Summary Points and Key Terms
- Module quiz
- Module Critical Thinking Activity

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Educate Workforce Simulations included in this course include:

- Aircraft weighing
- Aircraft labeling

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