

Aviation Technology- Maintenance
Standard Course Outline

AVTG 1041 - WEIGHT AND BALANCE

Catalog Description: Students perform weight and balance checks that require computation of center-of-gravity and ballast. Aircraft are weighed and students research information and record data. Clock hours: 13 lecture, 17 shop

Prerequisite: AVTG 1001

Credit hours/ Contact hours/ Load hours: 1/30/6 hours per day for 5 days

Target Audience & Transferability:

This course is designed for students seeking a Certificate of Proficiency, Technical Certificates in Airframe and Powerplant, an AAS in Aviation Maintenance Technology, or an AS in Aviation Maintenance Management. Individual AVT courses or Certificates may be transferable to other FAA Certified Aviation Maintenance Technician schools under Federal Regulations.

Student Outcomes/ Course Topics:

REFERENCES: ABS; AMT-G; FAA-H-8083-1.

FAA Standard: *FAA-S-8081-26* 1-3, Changes 2 (9/24/03) & 3 (6/21/04)

By the end of the course, students will:

1. Exhibit knowledge of at least two of the following—
 - a. the purpose(s) of weighing or reweighing.
 - b. general preparations for weighing, with emphasis on aircraft preparation and/or weighing area considerations.
 - c. the general location of airplane center of gravity (CG) in relation to the center of lift for most fixed main airfoils.
 - d. definitions of any of the following: datum, arm, moment (positive or negative), or moment index.
 - e. the meaning and/or application of any terms/nomenclature associated with weight and balance other than those mentioned in element “d” above, including but not limited to any of the following: tare, ballast, and residual fuel/oil.
 - f. procedures for finding any of the following: datum, arm, moment (positive or negative), or moment index.
 - g. purpose and/or application of mean aerodynamic chord (MAC).
 - h. adverse loading considerations.
2. *Demonstrate the ability to calculate:
 - a. Weight and balance CG and complete aircraft weight and balance documentation. (Level 3)*Core competency element.
3. Demonstrate the ability to perform at least one of the following—
 - a. weighing equipment preparation and setup according to manufacturer’s instructions. (Level 3)
 - b. locate procedures for leveling and the leveling points for an aircraft. (Level 2)
 - c. locate weigh points, procedures for determining CG, and determine the weigh point arms for an aircraft. (Level 2)

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- d. identify tare items for a specific aircraft and weighing procedure. (Level 2)
- e. find the datum for at least two different aircraft. (Level 2)
- a. determine the weight and location of required ballast after an (actual or hypothetical) equipment change. (Level 2)

Required Text(s):

General Textbook (ASA)	ISBN # 1-56027-550-3
General Test Study Guide (ASA)	ISBN # 1-56027-570-7
FAR Handbook for AMT (ASA)	ISBN # 1-56027-563-4
AC43.13-1B Acceptable Methods, Practices, & Techniques (ASA)	ISBN # 1-56027-488-3

Optional Text(s):

Technician General Textbook (Jeppesen)	ISBN # 0-88487-203-3
Technician General Workbook (Jeppesen)	ISBN # 0-88487-212-2
AC65-9A Aircraft Mechanics Handbook General (FAA)	ISBN # 1-56027-064-0

Supporting Reference(s)

O&P Study Guide (ASA)	ISBN # 1-56027-406-9
Maintenance Handbook (ASA)	ISBN # 1-56027-518-9
Dictionary of Aeronautical Terms (ASA)	ISBN # 1-56027-587-2

The workbooks and test study guides may be used to aid the instructor and students to reinforce the textbook information. Other Textbooks may be issued depending upon availability.

Required Methods of Instruction:

Classes are taught off-campus in a full time day or night format, requiring maximum attendance. Attendance is taken every hour. Missed time must be made up outside of regular scheduled class time before moving to the next subject.

Required Forms of Assessment:

Periodic exams will be performed by FAA approved instructors as required to insure progress. Students must pass this course with a 70% or better to qualify for an FAA approved Certificate of Completion in the General Section.