



BROWARD COMMUNITY COLLEGE COURSE OUTLINE

LAST REVIEW: 2008-2009

(i.e. 2003-2004)

NEXT REVIEW: 2013-2014

(i.e. 2008-2009)

STATUS: A

(A, I, D)

COURSE TITLE: Weight & Balance

COMMON COURSE NUMBER: AMT 0020

CREDIT HOURS: 1

CONTACT HOUR BREAKDOWN

(per 16 week term)

CLOCK HOURS: 27.25

(Voc. Course ONLY)

Lecture: 20

Lab: 7.25

Clinic:

Other:

PREREQUISITE(S): None

COREQUISITE(S): None

PRE/COREQUISITE(S): None

COURSE DESCRIPTION *(750 characters, maximum):* Familiarizes the student with the importance of weight and balance control, the procedures for weighing an aircraft, the computations necessary to arrive at current and balance data, and the disposition of weight and balance forms and records. The use of loading graphs and charts relating to the aircraft's center of gravity envelope is taught. Student fee charged.

General Education Requirements – Associate of Arts Degree (AA), meets Area(s): Area

General Education Requirements – Associate in Science Degree (AS), meets Area(s): Area

General Education Requirements – Associate in Applied Science Degree (AAS), meets Area(s): Area

UNIT TITLES

1. Weight and Balance Procedures
2. Weight and Balance Check and Data Records



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ASSESSMENT:

Please provide a brief description (250 characters maximum) that details how students will be assessed on the course outcomes.

1. Quizzes, Test, and/or Final Exam (cumulative/comprehensive);
2. Selected faculty may assess homework, projects, class participation/attendance, and/or extra credit projects. Upon successful completion of this course, the students should be able to weigh an aircraft, compute balance data, and record the data on proper forms.

***** Complete the following only if course is seeking general education status *****

GENERAL EDUCATION Competencies and Skills*:

Please highlight in green font all Competencies/Skills from the list below that apply to this course. In the box to the right of the Competency/Skill, enter all specific learning outcome numbers (i.e. 1.1, 2.7, 5.12) that apply.

1. Read with critical comprehension	
2. Speak and listen effectively	
3. Write clearly and coherently	
4. Think creatively, logically, critically, and reflectively (analyze, synthesize, apply, and evaluate)	
5. Demonstrate and apply literacy in its various forms: (highlight in green ALL that apply) (1. technological, 2. informational, 3. mathematical, 4. scientific, 5. cultural, 6. historical, 7. aesthetic and/or 8. environmental)	
6. Apply problem solving techniques to real-world experiences	
7. Apply methods of scientific inquiry	
8. Demonstrate an understanding of the physical and biological environment and how it is impacted by human beings	
9. Demonstrate an understanding of and appreciation for human diversities and commonalities	
10. Collaborate with others to achieve common goals.	
11. Research, synthesize and produce original work	
12. Practice ethical behavior	
13. Demonstrate self-direction and self motivation	
14. Assume responsibility for and understand the impact of personal behaviors on self and society	
15. Contribute to the welfare of the community	

* General Education Competencies and Skills endorsed by '05-'06 General Education Task Force



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Common Course Number: AMT 0020

UNITS

Unit 1 Weight and Balance Procedures

General Outcome:

- 1.0 The student shall:** The students should be able to weigh aircraft.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 1.1 Use aircraft specifications for weighing purposes.
- 1.2 Locate jacks and scales in the correct position.
- 1.3 Prepare aircraft for weighing.



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COURSE OUTLINE

Common Course Number: AMT 0020

Unit 2 Weight and Balance Check and Data Records

General Outcome:

- 2.0 **The student shall:** The students should be able to perform complete weight and balance check and record data.

Specific Measurable Learning Outcomes:

Upon successful completion of this unit, the student shall be able to:

- 2.1 Determine that the forward or rearward center-of-gravity (c.g.) limit is not exceeded on a specified aircraft.
- 2.2 Determine the point of reference for all weight and balance measurements.
- 2.3 Explain the procedure for computing "minimum fuel".
- 2.4 Locate the information that should be known to compute weight and balance.
- 2.5 Discuss the method of expressing additions or removals of equipment for weight and balance purposes.
- 2.6 Determine the fully loaded center of gravity of an aircraft.
- 2.7 Determine the "maximum authorized weight of an aircraft.
- 2.8 Explain the method of determining aircraft empty weight, when engine oil and hydraulic fluid are contained in supply tanks.
- 2.9 Explain the effect on weight and balance of replacing a component with another of different weight and location.
- 2.10 Calculate the maximum cargo or baggage weight that can be carried by an aircraft.
- 2.11 List the record requirements for weight and balance data.
- 2.12 Discuss the hazards of exceeding aircraft fore and aft center-of-gravity limits.



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- 2.13 Explain the critical conditions of helicopter load and balance.
- 2.14 Determine aircraft empty weight and empty weight center of gravity.
- 2.15 Define maximum gross weight.
- 2.16 Determine the moment of an item of equipment.
- 2.17 Account for tare weight when weighing an aircraft.