

**Columbus State Community College
Engineering and Transportation Technologies
Aviation Maintenance Technology**

COURSE: AMT 1102 Aircraft Weight & Balance

CREDITS: 2 CLASS HOURS PER WEEK: 9

PREREQUISITES: ENGL 1100; MATH 1050 or 1099

DESCRIPTION OF COURSE

In this course, there will be an in depth look at aircraft and helicopter weight and balance. Students will study the principles of computing weight and balance, computing and correction of adverse load conditions, and the basics of computing weight and balance for transport category aircraft. Procedures for weighing aircraft and documentation of weight and balance data are emphasized.

COURSE GOALS

- Weight and balance principles and terminology
- Weigh aircraft and perform complete weight-and-balance check and record data
- Quantitative Skills

STUDENT LEARNING OUTCOMES

Students will demonstrate knowledge of weight and balance terminology, fundamentals, and the need for weight and balance control.

Students will demonstrate the ability to weigh aircraft and record results.

Students will demonstrate the ability to complete calculations required for weight and balance forms and records.

INSTITUTIONAL LEARNING GOALS

Columbus State Community College's Institutional Learning Goals are an integral part of the curriculum and central to the mission of the college. The faculty at Columbus State has identified the following institutional learning goals:

- Quantitative Skills
- Scientific Literacy

COURSE MATERIALS REQUIRED

TI 30 Calculator or equivalent

TEXTBOOKS—REQUIRED AND OPTIONAL READINGS

FAA General Handbook 8083-30

AC43.13-1B/2B

General Workbook

FAR's for AMT's

General Test Guide

Aviation Mechanic's Handbook

Aviation Dictionary (*Optional*)

AVIATION MAINTENANCE TECHNOLOGY SYLLABUS STATEMENTS

Aviation Maintenance Technology required College Syllabus Statements on **Assessment, Participation and Safety**, and **Attendance** can be found at <http://www.csc.edu/academics/departments/aviation->

[maintenance/requirements.shtml](#) or on the College website –Search ‘Aviation’; click on ‘Aviation Maintenance’; click on ‘Requirements’ tab.

SPECIAL COURSE REQUIREMENTS

Part 147 Para 147.21 (d) (3) and 147.31 (b) state that tests must be given in all subject areas and that the tests given must all be passed.

As students progress through the program, they will be given subject area tests relative to the course subject areas. Students must demonstrate a 70% minimum passing score on every subject test. If a subject area test is failed, the student will be given additional opportunities to pass the subject test. All subject tests must be passed before a certificate of program completion can be issued.

FAA Subject Area Test for this course:

I-C: Weight and Balance

To be awarded a Certificate of Program Completion, in addition to subject area testing, the student must also:

Successfully pass each course required for the certificate. Requirements for passing each course include:

A 70% average evaluation for graded course elements. Instructors determine the weights of course grading.

Successful completion of all required laboratory requirements of the course.

Attendance in compliance with the attendance policy.

Students can pass a course with a grade of “D”, however students must have a minimum overall Grade Point Average of 2.0 (out of a possible 4.0) to be awarded a certificate of completion. Courses can be repeated to improve grades.

Grade Area	Weight	Percentage Earned		Lab Project	Pass	Fail
Unit Tests	30%			Weight and Balance Data		
Quiz	N/A			Level and Weigh Aircraft		
Final	30%			Complete Weight and		

				Balance Records		
Participation & Safety	10%			Compute changes in Weight and Balance and Ballast		
Other –	30%			Helicopter Weight and Balance Calculations		
Total	100%					
Course Letter Grade						

Student Resources, Rights, and Responsibilities: Columbus State Community College required College Syllabus Statements on College Policies and Student Support Services can be found at <https://www.csc.edu/academics/syllabus.shtml>.

UNITS OF INSTRUCTION – AMT 1102

ASSIGNMENT	LEARNING OBJECTIVES/GOALS	ASSESSMENT METHODS	ASSIGNMENTS	
Assignment 1	Weight and balance principles and terminology	Test, Quizzes, Worksheets	Read:	FAA General Handbook 8083-30 Chapter 4
			Labs:	Weight and Balance Worksheets
			Test:	Test 1
Assignment 2	Aircraft weighing procdures and calculations	Test, Quizzes, Worksheets	Read:	FAA General Handbook 8083-30 Chapter 4
			Labs:	Weigh Aircraft and record results
			Test:	Test 2
Assignment 3	Perform complete weight-and-balance calculations and record data	Test, Quizzes, Worksheets	Read:	FAA General Handbook 8083-30 Chapter 4
			Labs:	Worksheets and completion of records of weight and balance
			Test:	Test 3
Assignment 4	Helicopter weight and balance	Test, Quizzes, Worksheets	Read:	FAA General Handbook 8083-30 Chapter 4
			Labs:	Helicopter worksheet
			Test:	None