

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

COURSE: AMT 2101 Aircraft Metallic Structures

CREDITS: 3 CLASS HOURS PER WEEK: 27 PREREQUISITES: AMT 1103

DESCRIPTION OF COURSE

The primary structures of most aircraft today are made of some form of metal. An understanding of the techniques involved in forming and fabricating various components for metal structures is essential for the technician to maintain and repair airframes for continued service and reliability. In this course, students will study properties of aircraft metals, fabrication of aircraft repairs by complex bending, riveting, and use of structural adhesives. Students will design and layout repairs of metal aircraft. In addition, welding techniques, inspection of welds and heat-treatment of metals will be examined and applied.

STUDENT LEARNING OUTCOMES

Student will demonstrate their ability to inspect, repair, and fabricate sheet metal structures. Select and install conventional rivets and other industry sheet metal fasteners. Students will have a basic understanding of welding techniques with a focus on gas welding.

GENERAL EDUCATION OUTCOMES

- Scientific Literacy
- Technological Competence

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
- Technological Competence

COURSE MATERIALS REQUIRED

TI 30 Calculator or equivalent
All tools on CSCC AMT Required Tool List

TEXTBOOK, MANUALS, REFERENCES, AND OTHER READINGS

Airframe 8083-31 Vol 1
Airframe 8083-31 Vol 2
Airframe Workbook
A&P Airframe Test Guide

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:

Airframe – D(1): Sheet Metal Structures (AMA D10, D14, D15, D16)

Airframe – E: Welding

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 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	60%			Inspect and Repair sheet-metal structures		

Mid-Term	N/A	N/A		Install Conventional Rivets		
Final	10%			Form, lay-out, and bend sheet metal		
Participation & Safety	10%					
Other – Homework Assignments	20%					
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 2101

ASSIGNMENT	LEARNING OBJECTIVES/GOALS	ASSESSMENT METHODS	ASSIGNMENTS	
Assignment 1	Metallic Aircraft Construction	Test, Quizzes, Worksheets	Read:	Airframe Text Chapter 2A FAA Order 8083-31 Ch1 & 4
			Labs:	
			Test:	
Assignment 2	Sheet metal Tools and Fasteners	Test, Quizzes, Worksheets	Read:	Airframe Text Chapter 2B FAA Order 8083-31 Ch4
			Labs:	
			Test:	
Assignment 3	Sheet Metal Fabrication	Test, Quizzes, Worksheets	Read:	Airframe Text Chapter 2C FAA Order 8083-31 Ch4
			Labs:	
			Test:	
Assignment 4	Inspection and Repair of Metallic Aircraft Structures	Test, Quizzes, Worksheets	Read:	Airframe text Chapter 2D FAA Order 8083-31 Ch4
			Labs:	
			Test:	
Assignment 5	Welding processes	Test, Quizzes, Worksheets	Read:	Airframe Text Chapter 4A FAA Order 8083-31 Ch5
			Labs:	
			Test:	

Assignment 6	Advanced Welding and Repair	Test, Quizzes, Worksheets	Read:	Airframe Text Chapter 4B FAA Order 8083-31 Ch5	
			Labs:		
			Test:		
Assignment 7	Basic Gas Welding	Test, Quizzes, Worksheets	Read:	Airframe Text Chapter 4C FAA Order 8083-31 Ch5	
			Labs:		
			Test:		