

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

COURSE: AMT 1103 Aircraft Materials

CREDITS: 4 CLASS HOURS PER WEEK: 21

PREREQUISITES: ENG 1100; MATH 1050 or 1099

DESCRIPTION OF COURSE

Focus is placed on usage of common hand tools and safety, making precision measurements, and proper use of torque wrenches. Identification of aircraft hardware and other materials used in the aircraft industry will also be presented, and students will receive instruction in the methods of safety wiring hardware, the principles of inspection, fabrication, repair, and replacement of hydraulic and pneumatic rigid and non-rigid lines. In addition, students will learn the basics of non-destructive inspection techniques, corrosion detection, and corrosion control. The proper use of aircraft drawings and charts will also be explored.

STUDENT LEARNING OUTCOMES

Student will demonstrate the basic usage of common hand tools in the aviation industry. Demonstrate the proper procedures for securing fasteners, safety wiring and installing cotter pins. Demonstrate the ability to properly use torque wrenches, micrometers, calipers, and other precision tools. Demonstrate the ability to manufacture and fabricate rigid and non-rigid (flexible) fluid and pneumatic lines. Understand the principles, uses, and methods of non-destructive testing. Identification and control of corrosion and proper methods of cleaning. Proper use of aircraft drawings and charts.

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:

- Critical Thinking

COURSE MATERIALS REQUIRED

TI 30 Calculator or equivalent
Drawing tools (compass, angles, protractor)
CSCC Aviation required Tools

TEXTBOOK, MANUALS, REFERENCES, AND OTHER READINGS

General 8083-30-ATB
General Workbook
General Test Guide
AC 43.13 1B/2B
ASA/FAR/AMT 2015 by ASA
Aviation Mechanic Handbook

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:

- General-B: Aircraft Drawings
- General-D: Fluid Lines and Fittings
- General E: Materials & Processes
- General G: Cleaning and Corrosion Control

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	50%			Proper use of torque wrench and torque charts		
Quiz	%			Perform Precision Measuring		

Final	20%			Safety-wire		
Participation & Safety	10%			Fabrication and installation of fluid line		
Other – Homework	20%			Inspect, Identify, remove, and treat aircraft corrosion		
Total	100%			Draw sketches of Repairs		
Course Letter Grade				Use blueprint information, Charts, and graphs		
				Identify and select Aircraft Hardware and materials		
				Inspect and Check Welds		
				Identify and select cleaning materials		

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 1103

Reading Assignments are either Jeppesen Text Books or the FAA Order 8083-30

ASSIGNMENT	LEARNING OBJECTIVES/GOALS	ASSESSMENT METHODS	ASSIGNMENTS	
Assignment 1	Aircraft Structural Materials	Test, Quizzes, Worksheets	Read:	Jeppesen General Text Ch 7 FAA Order 8083-30 Ch 5
			Labs:	
			Test:	
Assignment 2	Aircraft Hardware	Test, Quizzes, Worksheets	Read:	Jeppesen General Text Ch 8 FAA Order 8083-30 CH 5
			Labs:	
			Test:	
Assignment 3	Hand Tools and Measuring Devices	Test, Quizzes, Worksheets	Read:	Jeppesen General Text Ch 9 FAA Order 8083-30 CH9
			Labs:	
			Test:	
Assignment 4	Fluid Lines and Fittings	Test, Quizzes, Worksheets	Read:	Jeppesen General Text Ch 10 FAA Order 8083-30 CH7
			Labs:	
			Test:	
Assignment 5	Nondestructive Testing	Test, Quizzes, Worksheets	Read:	Jeppesen General Text Ch 11 FAA Order 8083-30 CH 8
			Labs:	
			Test:	
Assignment 6	Cleaning and Corrosion Control	Test, Quizzes, Worksheets	Read:	Jeppesen General Text Ch 12 FAA Order 8083-30 CH 6
			Labs:	
			Test:	

Assignment 7	Aircraft Drawing	Test, Quizzes, Worksheets	Read:	Jeppesen General Text Ch 5 FAA Order 8083-30 CH2	
			Labs:		
			Test:		