

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

COURSE: AMT 2107 AIRCRAFT ENVIRONMENTAL CONTROLS

CREDITS: 2 CLASS HOURS PER WEEK: 12 PREREQUISITES: AMT 1106

DESCRIPTION OF COURSE

In this class, students discover how pilots and passengers remain comfortable through heating, air conditioning, pressurization, and supplemental oxygen systems. This course will also familiarize students with anti-ice, de-ice, ice detection, and rain protections systems used on the airframe, engine, and propeller installations. A large emphasis will be placed on troubleshooting and repair of these systems and associated servicing and inspection techniques.

COURSE GOALS

- Aircraft Pressurization Systems
- Aircraft Heating and Air Conditioning
- Aircraft Oxygen Systems
- Airframe Ice Control
- Rain Control Systems
- Critical Thinking
- Technological Competence

STUDENT LEARNING OUTCOMES

Demonstrate knowledge of cabin atmospheric control systems

Demonstrate the ability to perform maintenance on Aircraft supplemental oxygen systems

Use proper techniques to inspect, troubleshoot and maintain aircraft ice control systems

Use proper techniques to inspect, troubleshoot and maintain aircraft rain control systems

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:

- Scientific Literacy
- Technological Competence
- Cultural and Social Awareness

COURSE MATERIALS REQUIRED

TI 30 Calculator or equivalent

Entire AMT Required Tool List

TEXTBOOKS—REQUIRED AND OPTIONAL 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 Tests for this course:

III-M: Cabin Atmosphere Control

III-S: Ice and Rain Control Systems

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%			Aircraft Oxygen Systems		

Mid-Term	10%			Airframe Ice Protection Systems		
Final	15%			Rain Protection Systems		
Participation & Safety	10%					
Quizzes	5%					
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 2106

ASSIGNMENT	LEARNING OBJECTIVES	ASSESSMENT METHODS	ASSIGNMENTS	
Assignment 1	Aircraft Pressurization Systems	Worksheets	Read:	AF Text Chap.14 Sec. A & B
			Labs:	None
			Test:	None
Assignment 2	Aircraft Heating Systems	Test, Quizzes, Worksheets	Read:	AF Text Chap.14 Sec. C
			Labs:	Lab sheets completed
			Test:	None
Assignment 3	Air Conditioning systems	Test, Quizzes, Worksheets	Read:	AF Text Chap.14 Sec. C
			Labs:	None
			Test:	Test 1
Assignment 4	Aircraft Oxygen Systems	Test, Quizzes, Worksheets	Read:	AF Text Chap.14 Sec. B
			Labs:	Completion of Lab worksheet
			Test:	Test 2
Assignment 5	Airframe Ice protection	Test, Quizzes, Worksheets	Read:	AF Text Chap.13 Sec. A
			Labs:	Worksheet and completion of lab
			Test:	Test 3
Assignment 6	Rain Control Systems	Test, Quizzes, Lab Worksheets	Read:	AF Text Chap.13 Sec. B
			Labs:	Lab worksheet
			Test:	Test 5