

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

COURSE: AMT 2103 AIRCRAFT INSTRUMENTS AND FIRE PROTECTION

CREDITS: 4 CLASS HOURS PER WEEK: 18 PREREQUISITES: AMT - 1106

DESCRIPTION OF COURSE

In this course, students will study instrument systems for monitoring flight envelope, environment, and engine parameters. Analog and electronic display systems are covered. Airframe and powerplant fire detection and suppression systems will also be studied. Practical application of common troubleshooting procedures and maintenance practices associated with these devices will be accomplished with a high level of achievement expected.

COURSE GOALS

- Introduction to Aircraft Instruments
- Flight, Engine, and Auxiliary Instruments
- Instrument system Inspection, Service, Maintenance, and Troubleshooting
- Aircraft Fire Protection Systems
- Scientific Literacy
- Technological Competence

STUDENT LEARNING OUTCOMES

Explain the methods of sensing and displaying information pertaining to flight envelope, engine operation, and system monitoring
Demonstrate the ability to install, troubleshoot and test instrument systems
Demonstrate the ability to troubleshoot and maintain on board smoke and fire detection; and fire suppression 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:

- Critical Thinking
- Scientific Literacy
- Technological Competence

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 Test for this course:

- III-N: Aircraft Instruments**
- V-H: Engine Instrument Systems**
- III-T: Fire Protection Systems**
- V-I: Engine Fire Protection 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%			Flight / Auxiliary Instrument		

Mid-Term	10%			Engine Instrument		
Final	15%			Compass Swing		
Participation & Safety	10%			Thermocouple Instrument		
Quizzes	5%			Pitot / Static System Test		
Total	100%			Instrument Inspection		
Course Letter Grade				Aircraft Fire Protection Systems		

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 2103

ASSIGNMENT	LEARNING OBJECTIVES	ASSESSMENT METHODS	ASSIGNMENTS	
Assignment 1	Flight Instrument Systems	Worksheets	Read:	AF Text Chap. 11 Sec. A
			Labs:	None
			Test:	None
Assignment 2	Engine Instrument Systems	Test, Quizzes, Worksheets	Read:	AF Text Chap. 11 Sec. A PP Text Chap. 2 Sec A PP Text Chap. 4 Sec A
			Labs:	Flight instruments lab sheets completed
			Test:	Test 1
Assignment 3	Auxiliary Instrument Systems	Test, Quizzes, Worksheets	Read:	AF Text Chap. 11 Sec. A
			Labs:	Worksheets, completion of lab sheet
			Test:	Test 2
			Test:	None
Assignment 4	Instrument system Inspection, Service, Maintenance, and Troubleshooting	Test, Quizzes, Worksheets	Read:	AF Text Chap.11 Sec. B PP Text Chap. 2 Sec A
			Labs:	Worksheet and completion of lab
			Test:	Test 3
Assignment 5	Aircraft Smoke and Fire Detection Systems	Test, Quizzes, Worksheets	Read:	AF Text Chap. 16 Sec. A PP Text Chap. 11 Sec. A
			Labs:	Inspection and lab worksheet
			Test:	Test 4

ASSIGNMENT	LEARNING OBJECTIVES	ASSESSMENT METHODS	ASSIGNMENTS	
Assignment 6	Aircraft Fire Extinguishing Systems	Test, Quizzes, Worksheets	Read:	AF Text Chap. 16 Sec. B PP Text Chap. 11 Sec. B
			Labs	Lab worksheet
			Test	Test 4