

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

**COURSE: AMT 2106 COMMUNICATION AND NAVIGATION SYSTEMS**

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

**DESCRIPTION OF COURSE**

This course will examine the aircraft communication, navigation, and warning systems pilots use to fly to a desired destination, in varying weather conditions, while avoiding other aircraft and contact with terrain. Students will gain practical experience in the testing, troubleshooting, and required inspections associated with these systems.

**COURSE GOALS**

- Basic Radio Principles
- Communication Systems
- Voice and Data Recorders
- Airborne Navigation Systems
- Autopilots and Flight Directors
- Position and Warning Systems
- Communication and Navigation Equipment Installation and Maintenance Practices
- Communication Competence
- Technological Competence

**STUDENT LEARNING OUTCOMES**

Explain the various types of voice communication systems used on aircraft

Explain the operation of various airborne navigation systems

Demonstrate the ability to inspect, troubleshoot and maintain speed and configuration warning systems

Demonstrate the ability to inspect and repair antenna and electronic equipment installations

**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
- 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 Test for this course:

**III-O: Communication and Navigation Systems**

**III-R: Position and Warning 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	Lab Project	Pass	Fail
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		Earned			
Unit Tests	60%			ELT battery	
Mid-Term	10%			Position and Warning Systems	
Final	20%			Stall Warning System	
Participation & Safety	10%			Com / Nav installations	
				Static Dischargers	
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**

<b>ASSIGNMENT</b>	<b>LEARNING OBJECTIVES</b>	<b>ASSESSMENT METHODS</b>	<b>ASSIGNMENTS</b>	
<b>Assignment 1</b>	Basic Radio Principles	Worksheets	Read:	AF Text Chap.12 Sec. A
			Labs:	None
			Test:	None
<b>Assignment 2</b>	Communication Systems	Test, Quizzes, Worksheets	Read:	AF Text Chap. 12 Sec. A
			Labs:	Communication System lab sheets completed
			Test:	None
<b>Assignment 3</b>	Voice and Data Recorders	Test, Quizzes, Worksheets	Read:	AF Text Chap. 12 Sec. A
			Labs:	None
			Test:	Test 1
<b>Assignment 4</b>	Airborne Navigation Systems	Test, Quizzes, Worksheets	Read:	AF Text Chap. 12 Sec. A
			Labs:	Completion of Lab worksheet
			Test:	Test 2
<b>Assignment 5</b>	Autopilots and Flight Directors	Test, Quizzes, Worksheets	Read:	AF Text Chap. 12 Sec. B
			Labs:	Worksheet and completion of lab
			Test:	Test 3
<b>Assignment 6</b>	Position and Warning Systems	Test, Quizzes, Worksheets	Read:	AF Text Chap. 10 Sec. B
			Labs:	Lab worksheet
			Test:	Test 4
<b>Assignment 7</b>	Communication and Navigation Equipment Installation and Maintenance Practices	Test, Quizzes, Lab Worksheets	Read:	AF Text Chap. 11 Sec. C
			Labs:	Lab worksheet
			Test:	Test 5