



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

COURSE: AMT 2201 Turbine Engine Maintenance I

CREDITS: 5 CLASS HOURS PER WEEK: 24 PREREQUISITES: AMT 1103

DESCRIPTION OF COURSE

In this course, the theory and operation of aircraft turbine engines, the study of turbine engine construction and design, and principles of turbine engine maintenance, inspection, repair, and trouble-shooting will be presented. Application of procedures to remove, install, rig, and operationally test turbine engines will be accomplished along with the identification and repair or lubrication systems and components.

COURSE GOALS

- Design and Construction
- Operating Principles
- Engine Operation, Instruments, and Maintenance
- Engine Overhaul Procedures
- Removal, Installation of Engines
- Turbine Engine Troubleshooting
- Critical Thinking
- Quantitative Skills

STUDENT LEARNING OUTCOMES

Student will demonstrate the ability to identify turbine engine applications, reaction vs. torque engine concepts and modular design.
Students will demonstrate a knowledge of thrust calculations, the use of mass to create power and associated ambient conditions affecting engine operation.
Students will demonstrate knowledge to perform functions related to maintenance, operation & overhaul
The student will demonstrate the ability to remove, install and troubleshoot a turbine engine

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
- Quantitative Skills

COURSE MATERIALS REQUIRED

All tools on the Columbus State Community College Aviation Maintenance Technology Minimum Required Tool List are required.

TEXTBOOKS—REQUIRED AND OPTIONAL READINGS

Powerplant 8083-32
 Powerplant Workbook
 A&P Powerplant 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 Are Test for this course:

- IV-B: Turbine Engines
- V-K: Lubrication 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%			Overhaul Engine		

Quiz	0%			Lubrication Systems		
Final	20%			Engine Operational Checks		
Participation & Safety	10%			Engine Troubleshooting		
Use of own tools	10%					
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 2201

ASSIGNMENT	LEARNING OBJECTIVES/GOALS	ASSESSMENT METHODS	ASSIGNMENTS	
Assignment 1	Design and Construction	Test, Quizzes, Worksheets	Read:	AMT Handbook Volume 1 Chapter 1-37 to 1-56
			Labs:	Engine classification and Modular design worksheet
			Test:	Design and Construction Test
Assignment 2	Operating Principles	Test, Quizzes, Worksheets	Read:	AMT Handbook Volume 1 Chapter 1-57 to 1-60
			Labs:	Engine Disassembly and Inspection
			Test:	Engine Theory Test
Assignment 3	Engine Operation, Instruments, and Maintenance	Test, Quizzes, Worksheets	Read:	AMT Handbook Volume 2 Chapter 10-56 to 1-59
			Labs:	Engine Inspection and Assembly
			Test:	Engine Operational Practices
Assignment 4	Turbine Engine Overhaul & Lubrication Systems	Test, Quizzes, Worksheets	Read:	AMT Handbook Volume 2 Chapter 6-19 to 6-33
			Labs:	Engine Lubrication Service
			Test:	Engine Lubrication
Assignment 5	Engine Removal and Installation	Test, Quizzes, Worksheets	Read:	AMT Handbook Volume 2 Chapter 8-16 to 8-28
			Labs:	Remove, Install and Test Engine
			Test:	None
Assignment 6	Engine Troubleshooting	Test, Quizzes, Worksheets	Read:	AMT Handbook Volume 2 Chapter 10-60 to 10-66
			Labs:	Troubleshoot Engine

ASSIGNMENT	LEARNING OBJECTIVES/GOALS	ASSESSMENT METHODS	ASSIGNMENTS		
			Test:	Installation, Operation and Troubleshooting	