

# *Engineering and Technology Education Department*

## *Semester Course Syllabus*

### **AV 2150 - AIRCRAFT POWERPLANT MAINTENANCE LAB**

#### **3 Credits**

#### I. Catalog Description

Theory of turbine powerplants, including turbine engine and components operation, hot section inspection and servicing. Aircraft engine 100 hour inspections, and maintenance with laboratory applications of principles and components studied.

#### II. Course Objective

The objective of the powerplant laboratory is to gain an applied understanding of Aircraft Powerplant and System Maintenance. Upon completion, each student will be able to achieve the level of proficiency indicated by the number in parenthesis.

##### Teaching Level

#### A. PROPELLERS

- (2) 1. Balance Propellers
- (3) 2. Install, Troubleshoot, and Remove Propellers
- (3) 3. Inspect, check, service, and repair fixed-pitch, constant speed, and feathering propellers, and propeller governing systems.
- (2) 4. Repair propeller control system components
- (2) 5. Identify and Select Propeller Lubricants
- (1) 6. Inspect and troubleshoot unducted fan systems and components

#### B. TURBINE ENGINES

- (2) 1. Turbine engine overhaul
- (2) 2. Inspection, servicing, and repair of turbine engines
- (2) 3. Installation, troubleshooting, and removal of turbine engines
- (2) 4. Engine operation and maintenance

#### C. ENGINE EXHAUST SYSTEMS

- (2) 1. Repair engine exhaust system components
- (3) 2. Inspect, check, troubleshoot, service, and repair engine exhaust systems

D. ENGINE FIRE PROTECTION SYSTEMS

- (3) 1. Inspect, check, service, troubleshoot, and repair engine fire detection and extinguishing systems.

E. ENGINE INSPECTION

- (3) 1. Perform powerplant conformity and airworthiness inspections

III. Text

AC 43.13-1A, Acceptable Practices  
Aviation Technician ITP Powerplant Section Textbook  
Manufacturer's Maintenance Manuals  
**(Note: Each student must provide their own 3.5 inch floppy disc for use with the Allison CBT program.)**

IV. Grades

Determined by the total points of examinations, quizzes, and lab assignments. At least two major exams will be given.

V. Examination Schedule

Midterm exam	200 points
Lab Projects	400 points
Instructor Evaluation	100 points
Final examination worth	<u>300 points</u>
	1,000 total points

VI. Laboratory

Projects will be assigned to coincide with the material taught in the lecture. Each student will complete all lab projects to the satisfaction of the instructor and to the level of instruction specified by FAR 147 Appendix A and B.

VII. Attendance

Attendance is required for all A & P students, and a daily roll will be kept as required by FAR 147. If a student does not meet the attendance requirements, he/she will not be permitted to take the FAA Airframe or Powerplant exams. All absences must be made up. A minimum of **198 clock hours** are required in this course.

VIII. Course Fee

A \$55 fee is required for this course. This fee is used for turbine fuel and turbine oil used during engine runs, consumable materials used during inspections and repairs, and specialized tooling required for engine maintenance.

IX Accommodation for Persons With Disabilities

Students with ADA-documented physical, sensory, emotional or medical impairments may be eligible for reasonable accommodations. Veterans may also be eligible for services. All accommodations are coordinated through the Disability Resource Center (DRC) in Room 101 of the University Inn, (435)797-2444 voice, (435)797-0740 TTY, or toll free at 1-800-259-2966. Please contact the DRC as early in the semester as possible. Alternate format materials (Braille, large print or digital) are available with advance notice.