**I. COURSE TITLE:** Aircraft Powerplant Inspection

 **COURSE NUMBER:** 2364 **CATALOG PREFIX:** AVIT

**II. PREREQUISITE(S):**

**III. CREDIT HOURS:** 3 **LECTURE HOURS:** 2

 **LABORATORY HOURS:** 1 (2 contact) **OBSERVATION HOURS:**

**IV. COURSE DESCRIPTION:**

This course will introduce the student to the engine inspection process and programs. Students will open and inspect an engine following the prescribed 100 hr or annual inspection check. Students will write discrepancies found on engines on appropriate inspection paperwork. Students will perform necessary repairs to correct the discrepancies on the engine inspected and return the engine to an airworthy condition. The inspection process will be performed to conformity and airworthiness standards.

**V. ADOPTED TEXT(S):**

Jeppesen Maintenance

 A&P Technician

Powerplant Textbook

**VI. COURSE OBJECTIVES:**

Students will be able to:

• Perform powerplant conformity and air worthiness inspections (3)

 Objective levels:

Level 1 requires:

Knowledge of general principles, but no practical application.

No development of manipulative skill.

Instruction by lecture, demonstration, and discussion.

Level 2 requires:

Knowledge of general principles, and limited practical application.

Development of sufficient manipulative skill to perform basic operations. Instruction by lecture, demonstration, discussion, and limited practical application.

Level 3 requires:

Knowledge of general principles, and performance of a high degree of practical application.

Development of sufficient manipulative skills to simulate return to service.

Instruction by lecture, demonstration, discussion, and a high degree of practical application.

**VII. COURSE METHODOLOGY:**

May include but not limited to Lecture and problem solving, independent and group projects, in-class and home assignments, quizzes, and tests. Problem solving will use both graphical and mathematical methods.

Attendance is required.

**VIII. GRADING**

A= 90-100

 B= 80-89

 C= 70-79

 D= 60-69

 F= 0-59

Grades of 69 and below will not meet the requirements of the FAA for Mechanic

Certificate .

See catalog for description of other possible grades.

**IX. COURSE OUTLINE:**

Weeks:

1. Inspection and maintenance documents, type certificate data sheets, aircraft specifications, supplemental type certificates.

2. Airworthiness directives, advisory circulars, manufacturer's publications.

3. Airworthiness inspections, annual inspection, 100-hour inspection, progressive inspection, large and turbine-powered multi-engine aircraft.

4. Reciprocating engine and propeller inspections, inspection scope and detail, pre-inspection criteria, inspection phase.

5. Inspecting engine area, engine controls, engine mounts, exhaust stacks, accessories.

6. Cowling, propeller inspection, helicopter sheave and drive belt inspection, post inspection run-up, maintenance record entries.

Test 1

7. Turbine engine inspection, inspection programs, repair facility inspection procedures, inspection tools.

8. Inspection designations, non-routine inspections.

9. Powerplant troubleshooting, manufacturer publications, FAA data.

10. Troubleshooting equipment, pilot and technician interviews.

11. Reciprocating engine troubleshooting, engine run-up, fault isolation.

Test 2

12. Fault analysis, electrical system faults, fuel system faults, ignition system faults.

13. Lubrication system faults, mechanical faults, propeller faults, turbocharger faults, vacuum system faults.

14. In-flight squawks, diagnosing faults with graphic engine displays.

15. Turbine engine troubleshooting, trend monitoring, spectrometric oil analysis, starting and shutdown faults, operational faults, lubrication faults and oil contamination.

16. Final exam.

**X. OTHER REQUIRED TEXTS, SOFTWARE, AND MATERIALS:**

FAA AC-65-12A

Airframe and Powerplant Mechanics

Powerplant Handbook

 FAA-AC-43.13-1B/2B

Acceptable methods, Techniques, and practices of aircraft inspection and Repair

**XI. EVALUATION:**

Test count – 40% of Final Grade

 Quizzes count – 10% of Final Grade

 Lab Grade counts – 50% of Final Grade

**XII. SPECIFIC MANAGEMENT REQUIREMENTS:**

Class and lab attendance is mandatory. Students are required to be in class and lab to satisfy the time requirement of the FAA. Quizzes cannot be made up. No test can be taken late without prior approval of the instructor.

**XIII. OTHER INFORMATION:**

**FERPA:** Students need to understand that your work may be seen by others. Others may see your work when being distributed, during group project work, or if it is chosen for demonstration purposes. Students also need to know that there is a strong possibility that your work may be submitted to other entities for the purpose of plagiarism checks.

**DISABILITIES:** Students with disabilities may contact the Disabilities Service Office, Central Campus, at 800-628-7722 or 937-393-3431.