

PALOMAR COLLEGE
COURSE OUTLINE OF RECORD FOR
DEGREE CREDIT COURSE

XX Transfer Course XX A.A. Degree applicable course
(check all that apply)

COURSE NUMBER AND TITLE: AERO 215 Complex Aircraft Systems and Propulsion

UNIT VALUE: 3

MINIMUM NUMBER OF SEMESTER HOURS: 48

BASIC SKILLS REQUIREMENTS: Appropriate language skills.

ENTRANCE REQUIREMENTS

PREREQUISITE: : Aeronautical Sciences 105 or Private Pilot Certificate.

COREQUISITE: None

RECOMMENDED PREPARATION: None

SCOPE OF COURSE:

Turbochargers, turboprop and turbojet engines and their operation. Electrical, pressurization, hydraulic, and fuel systems will be examined.

SPECIFIC COURSE OBJECTIVES:

The successful student will be able to:

1. explain the normal use of turbine-powered aircraft systems.
2. analyze and explain the reasons the systems are designed as they are.
3. pose problems which could occur with each system.
4. solve problems involving failures of portions of each system.
5. describe operating limitations of turbine engines and their associated systems.

CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE:

- I. Turbo chargers
 - A. Principle of Operation
 - B. Different Types
 - C. Operational Considerations
- II. Turbojet Engines
 - A. Principle of Operation
 - B. Fan Jets
 - C. Components of the Engine
 - D. Accessories
 - E. Instrumentation
 - F. Operational Considerations

III. Turboprop Engines

- A. Differences From Turbojet Engines
- B. Operational Considerations
- IV. Electrical Systems
 - A. D.C. Systems
 - B. A.C. Systems
 - C. Inverters
 - D. Bus Distribution Systems
- V. Pressurization Systems
 - A. Bleed Air Sources
 - B. Conditioning of Air
 - C. Air Cycle Machines
 - D. Temperature Controllers
 - E. Normal and Emergency Operations
- VI. Hydraulic Systems
 - A. Types of Pumps
 - B. Accumulators
 - C. Reservoirs
 - D. Accumulators
 - E. Actuators
- VII. Fuel Systems
 - A. Pumps
 - 1. Electrical, Mechanical, Jet
 - B. Cross feed Systems
 - C. Normal and Abnormal Operations
- VIII. Anti and Deice Systems

REQUIRED READING:

Houser J. Cessna Citation I Systems Description. Irving, TX: The Write Stuff Publishing, 1993.

SUGGESTED READING:

Selected aircraft flight/systems manuals.

REQUIRED WRITING:

None. This course requires considerable problem solving exercises involving aircraft systems.

OUTSIDE ASSIGNMENTS:

Students are expected to spend a minimum of three hours per unit per week in class and on outside assignments, prorated for short-term classes.

Outside assignments include reading the text, studying class notes, and solving problems involving aircraft systems.

INSTRUCTIONAL METHODOLOGY:

Check all that apply:

- lecture
- laboratory
- lecture-laboratory combination
- directed study

DISTANCE LEARNING:

This course may be offered as a distance learning course and meets Title 5 regulations 55370, 55372, 55374, 55376, 55378, and 55380.

Yes ____ No XX

If yes, check all that apply:

- Television Course (Video one-way, e.g. ITV, video cassette, etc.)
- Online Course (Text one-way, e.g. newspaper, correspondence, electronic file, etc.)
- Two-Way Video Conferencing (Two-way interactive video and audio)
- One-Way Video Conferencing (One-way interactive video and two-way interactive audio)
- Computer Assisted Instruction (A specialized form of mediated instruction relying primarily on student access to information and prepared lessons or teaching materials through a computer terminal, but not under immediate supervision of a qualified instructor.)

GRADING POLICY AND STANDARDS (include methods of determining whether the stated objectives have been met by students):

7 tests (true/false, multiple choice, fill in). All tests will be averaged.

IS COURSE REPEATABLE FOR REASON(S) OTHER THAN DEFICIENT GRADE?

Yes ____ No XX Number of times course may be taken for credit: ____

If yes, identify specific provision of Title 5 Division 2 section(s), 55761-55763 and 58161 which qualifies course as repeatable:

CONTACT PERSON:

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SIGNATURES ON FILE