APT A146: ADVANCED AIRCRAFT & ENGINES

Item	Value
Top Code	302020 - Piloting
Units	3 Total Units
Hours	54 Total Hours (Lecture Hours 54)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	No
Basic Skills	Not Basic Skills (N)
Repeatable	No
Grading Policy	Standard Letter (S)

Course Description

This course provides advanced information on aircraft engines and aircraft subsystems, to include turbine gas generator theory as well as an introduction to environmental and pressurization control systems found in complex aircraft. The course will enhance the students' understanding of basic aircraft systems to include constant speed propellers, primary flight controls, and provide detailed information on secondary flight controls, retractable landing gear, autopilots, flight directors, fuel systems and electrical systems. ADVISORY: APT A130. Transfer Credit: CSU.

Course Level Student Learning Outcome(s)

1. Identify the components of a reciprocating aircraft engine and describe the mechanics of engine operation.
2. Explain how major aircraft subsystems (hydraulic, flight control, electrical, gear and pressurization) operate.
3. Apply systems knowledge to analyze and solve the malfunction and safely terminate the flight given a scenario based in-flight malfunction.

Course Objectives

- 1. Diagram basic aircraft subsystems, including hydraulic, environmental control and electrical to include identification of systems components and their functions.
- 2. Describe and identify retractable gear, constant speed propellers and other "complex" aircraft systems.
- 3. Recognize and describe emergency procedures from a systems perspective.
- 4. Apply systems knowledge to analyze and solve scenario based emergency procedures.
- 5. Diagram and describe how an aircraft pressurization system operates.
- 6. Describe the principle of operation behind a reciprocating aircraft engine.
- 7. Identify and describe the components of a reciprocating aircraft engine.
- 8. Describe the principle of operation behind a gas turbine engine.
- 9. From a diagram, identify the basic components of a turbine gas generator.

Method(s) of Instruction

- Lecture (02)
- DE Online Lecture (02X)