APT A126: MULTI-ENGINE AIRCRAFT OPERATIONS LAB

Item	Value
Curriculum Committee Approval Date	12/08/2021
Top Code	302020 - Piloting
Units	1 Total Units
Hours	54 Total Hours (Lab 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

The student will receive training in the maneuvers and procedures necessary to meet the standards contained in the Commercial Practical Test Standards Airplane Multi-Engine Land. Additionally, the student will receive training in safety awareness, crew resource management, and aeronautical decision making. At the successful completion of this course, the student will have gained the aeronautical experience necessary to attain the additional rating of Commercial Pilot, Airplane Multi-Engine Land. Transfer Credit: CSU.

Course Level Student Learning Outcome(s)

1. Performs within the tolerances for each flight maneuver required by in the Federal Aviation Administration (FAA) Practical Test Standards for Commercial Pilot Multi-Engine Airplane.

Course Objectives

- 1. Perform all maneuvers outlined in the Practical Test Standard for Airplane Multi-Engine Land to the level of performance outlined in the objectives.
- 2. Safely perform single engine instrument approaches
- 3. Demonstrate the ability to fly the aircraft at minimum controllable airspeeds
- 4. Perform a Vmc demonstration and recovery
- 5. Perform multi-engine aircraft performance calculations
- 6. Perform muti-engine aircraft weight and balance calculations
- 7. Execute night takeoffs and landings both single and multi-engine
- 8. Demonstrate the ability to plan and conduct long cross country operations

Lecture Content

This is a lab only course.

Lab Content

I. Flight Planning A. Scenarion Planning 1. Engine failure prior to V2 2. Engine failure after V2 B. Weight and Balance and Performance Computations 1. Go/No GO distance calculations 2. Single engine rate of climb and climb gradientsII. Normal Preflight and Cockpit Procedures A. Normal Pre-takeoff Checklist procedures B. GPS programmingIII. Flight Operations A. Flight at minimum controllable airspeeds 1. Single and two engine stalls 2. Single and two engine slow flight 3. Vmc demonstration B.Steep Turns and Descents 1. Turns at 45 and 60 degrees of bank 2. Steep turns single engine 3. Emergency descent single and two engine C. Instrument Maneuvers 1. Basic aircraft control single engine 2. Single engine precision approaches 3. Single engine non-precision approaches D.Traffic Patterns and Landings 1. Normal pattern and landing 2. Single engine landings 3. Short field takeoffs and landings 4. Soft field takeoffs and landings 5. No flap and partial flap landings E. Cross Country flight ; 1. Dual flight day, 100NM two hours duration 2. Cross country flight as Pilot in Command, 300NM with landings at three airports F. Night operations 1. Effects of lighting 2. Basic aircraft control VMC and IMC 3. Night takeoffs 4. Night landings 5. Night cross country flightIV. Practical test review

Method(s) of Instruction

- Lab (04)

Instructional Techniques

Instructor will sequentially demonstrate the tasks and maneuvers listed in the FAA Practical Test Standards for the rating of Commercial Pilot, Airplane Multi-Engine Land. The student will perform the maneuvers under instructor supervision until standards defined in the FAA Practical Test Standards are met.

Reading Assignments

Study text material relating to completion of flight plans and flight logs, weight and balance exercises and aircraft performance problems.

Writing Assignments

Completion of flight plans and flight logs, weight and balance exercises and aircraft performance problems.

Out-of-class Assignments

Lab-only courses (outside assignments are not required).

Demonstration of Critical Thinking

In flight problem solving exercises based on FAA Commcercial Pilot Multi-Engine Practical Test Standards

Required Writing, Problem Solving, Skills Demonstration

Completion of flight plans and flight logs, weight and balance exercises and aircraft performance problems.

Eligible Disciplines

Aviation (flight, navigation, ground school, air traffic control): Any bachelors degree and two years of professional experience, or any associate degree and six years of professional experience.

Manuals Resources

1. Federal Aviation Administration. Practical Test Standards: Multi-Engine, ASA Publications , 01-01-2014

Other Resources

1. Instructor handouts: E-6B Flight Computer, Course Plotter, Los Angeles VFR Sectional Chart