APT A139: COMMERCIAL PILOT AVIATION GROUND SCHOOL

Item	Value
Curriculum Committee Approval Date	12/09/2020
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

Provides academic background for Private Pilots preparing for the FAA Commercial Pilot license. Covers transport category aircraft performance considerations, advanced weight and balance, multi-engine aerodynamics, and Federal Aviation Regulations applicable to Commercial pilots. Meets the preparation requirements for the FAA Commercial Pilot computerized knowledge examination. PREREQUISITE: APT A130 or current Private Pilot Certificate with Instrument rating; Students satisfying the Pilot Certificate prerequisite must present proof to the instructor at the first week of the course. Transfer Credit: CSU.

Course Level Student Learning Outcome(s)

1. Prepare to take the Federal Aviation Administration (FAA) Knowledge Test for Commercial Pilot.
2. Prepare to take the Practical Test for Commercial Pilot receiving in-flight instruction from a Certificated Flight Instructor.

Course Objectives

- 1. Update skills in problem solving as related to Federal airspace and elevate skills in advanced navigation, regulations regarding commercial operation.
- 2. Describe and identify retractable gear, constant speed propellers and other "complex" aircraft systems.
- 3. Illustrate and explain commercial flight maneuvers.
- 4. Interpret flight for hire regulations from the Federal Air Regulations.
- 5. Differentiate and identify commercial and heavy aircraft Powerplants and fuel systems.
- 6. Assess and describe constant speed propellers.
- 7. Diagram retract landing gear systems.
- 8. Recognize and describe emergency systems and procedures.
- 9. Examine maximum aircraft performance criteria.
- 10. Calculate and solve advanced weight and balance problems.
- 11. Evaluate and compare corporate and airline flying careers.
- 12. Employ cockpit resource management skills.
- 13. Prepare to take commercial pilot examination.

Lecture Content

Weight and Balance for heavy aircraft Books and References Baggage and Passenger Placement. Fueling limitations for Takeoff, Cruise, and Landing Airplane Powerplant Operations of Transport Category and Commercial Aircraft Aircraft under 12,500 lbs. Aircraft over 12,500 lbs. Heavy Transport Aircraft Aircraft Performance characteristics for Transport Category and Commercial Aircraft Light and Heavy Piston Aircraft Light and Heavy Turboprops Light and Heavy Jets Navigation for Transport Category and Commercial aircraft Dead reckoning and Radio Navigation Advanced methods: Satellite navigation Global Positioning System INS: Inertial Navigation Systems FMS: Flight Management Systems Loran Systems Weather fundamentals, forecast, and reports for commercial aircraft Airport Terminal Information Services Altitude Differences and Inversion layers The jet stream and freezing Levels Uses of in-flight Radar Airmans Information Manual and publications for Commercial Aircraft FAR and AIM Standards Air Traffic Controllers Customs information Instrument Procedures Federal Aviation Regulations Part 71: Designation of Federal Airways Part 73: Special Use Airspace Part 91: General Operations and Flight Rules Part 121: Rules for Air Carriers Part 135: Rules for Air Taxi NTSB Rules Review and sample FAA Commercial Pilot tests

Method(s) of Instruction

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

Instructional Techniques

Lecture and application of ideas, slide and multimedia presentations, equipment demonstrations

Reading Assignments

Textbook reading and information supplements on Blackboard/Canvas will apply as required reading assignments.

Writing Assignments

Short answer written homework assignments will be used to demonstrate writing proficiency. As a final examination the student will be required to take a written test representative of the actual FAA Commercial Pilot written examination.

Out-of-class Assignments

Weekly take-home projects, homework, and flight planning assignments will apply as required out-of-class assignments.

Demonstration of Critical Thinking

Written examinations based on FAA Private Pilot Question Bank Homework. Problem solving exercises

Required Writing, Problem Solving, Skills Demonstration

Short answer written homework assignments will be used to demonstrate writing proficiency. As a final examination the student will be required to take a written test representative of the actual FAA Commercial Pilot written examination.

Other Resources

1. Kershner,Advanced Pilots Flight Manual, Newcastle, WA, ASA Publications, US Edition 2. Gleim, Commercial Pilot FAA Knowledge Test, Gainesville, FL, Gleim Publications, Inc, 2008 3. E-6B Flight Computer

4. Course Plotter 5. L3 and L4 Low Altitude Enroute Chart, NOAA 6. Los Angeles VFR Sectional Chart, NOAA