APT A134: INSTRUMENT 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 Instrument Rating. Covers principles of instrument flight, aircraft performance, Federal Aviation Regulations, aviation weather factors and IFR cross country navigation procedures. Provides material on Instrument Approach Procedures, IFR operational procedures, human factors and aviation safety. All training is conducted in accordance with Federal Aviation Regulation (FAR) Part 61. All flight training labs are conducted in accordance with an approved FAR Part 141 syllabus. Meets the preparation requirements for the FAA Instrument rating computerized knowledge examination. Current Private Pilot Certificate will be verified by the instructor at the first class meeting. Three hours. PREREQUISITE: APT A130 or current Private Pilot Certificate (verified by the instructor at the first class meeting). Transfer Credit: CSU.

Course Level Student Learning Outcome(s)

1. A student who successfully completes this class will be prepared to take the Federal Aviation Administration (FAA) Knowledge Test for the Instrument rating.
2. Given in-flight instruction from a Certificated Flight Instructor the student will be prepared to complete those tasks and oral evaluations necessary to take the FAA Practical Test for the Instrument rating.
3. Accrue 10 hours of instrument flight instruction toward the flight time requirements of the FAA Instrument rating.

Course Objectives

- 1. Describe the basic flight instruments and their operation.
- 2. Recognize the need for and apply principles of instrument cross-check
- 3. Diagnose various flight instrument failures, and analyze how these will affect a flight.
- 4. Decipher Air Traffic Control clearances.
- 5. Interpret symbols used on IFR charts.
- 6. Differentiate between the different types of instrument approaches.
- 7. Identify what weather services are available and how to utilize them.
- 8. Solve problems caused by changing weather factors.
- 9. Exercise good judgment in identifying and solving in-flight emergencies.
- 10. Demonstrate proficiency in the operation of an airplane by reference to instruments alone.
- 11. Demonstrate the ability to intercept, bracket, and track the VOR, ADF, localizer and glide slopes.
- 12. Demonstrate proficiency in the execution of VOR, NDB, and ILS instrument approaches.
- 13. Demonstrate proficiency in the execution of Back Course ILS and DME arc instrument approaches.
- 14. Demonstrate proficiency in the execution of the LDA and SDF instrument approaches.
- 15. Demonstrate proficiency in the execution of the instrument departure procedure and standard terminal arrival procedures.
- 16. Demonstrate proficiency in flying IFR with a partial panel.
- 17. Demonstrate the proper communication responses to ATC directions and clearances.

Lecture Content

Principles of Instrument Flight Aircraft Instruments Attitude Instrument Flying Instrument Navigation Explanation of attitude instrument scan (Basic T Formation and Music Scan) Defining primary, controlling, and power instruments Explanation of pitch, bank, yaw, power, and trim instruments Explanation of attitude + power = performance for six configurations of flight Identifying the common errors of instrument scanning Identify the instruments and components on the simulator Simulator lab exercise assignment: simulator checkout and aircraft control Flight Environment Air Traffic Control System ATC Clearances Airports, Airspace, and Flight Information Charts for Instrument Flight Instrument Approach Charts En route and Area Charts Departure and Arrival Charts Instrument Approaches ILS Approaches VOR Approaches NDB Approaches IFR Operational Considerations Departures En route Operations Arrivals and Approaches Meteorology Weather Factors Weather Hazards Printed Reports and Forecasts Graphic Weather Products High Altitude Considerations IFR Flight Operations IFR Flight Planning IFR Emergency Procedures IFR Decision Making and Flight Considerations Federal Aviation Regulations for Instrument Flight Certification and Recency of Experience General Operating and Flight Rules

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

Writing assignments will involve interpretation of weather reports, proper flight planning per FAA regulations, and examinations.

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 Instrument Pilot Question Bank Homework. Problem solving exercises Simulator flight checks

Required Writing, Problem Solving, Skills Demonstration

Weekly take-home projects, homework, and flight planning assignments will apply as required out-of-class assignments. Writing assignments will involve interpretation of weather reports, proper flight planning per FAA regulations, and examinations.

Textbooks Resources

1. Required Professional Instrument Courses. Instrument Flying Training Manual, ed. Gainesville, FL: Gleim Publications, 2009 2. Required Irvin Gleim and Garrett Gleim. Instrument Pilot Knowledge Test, ed. Gainesville, FL: Gleim Publications, 2009