Lassen Community College Course Outline

AERO-1A Aviation Ground School 3.0 Units

I. Catalog Description

An aviation ground school course specifically designed to provide complete explanations of aeronautical concepts. It is designed to prepare the student for the Federal Aviation Administration (FAA) written examinations dealing with Visual Flight Rules (VFR) and the Private Pilot License.

Recommended Preparation: Successful completion of ENGL105 or equivalent assessment placement. ENGL105 Alternate Reference Documents; United States Department of Transportation - Federal Aviation Administration (FAA) Advisory Circular AC 60-28B English Language Standard. In alignment with the FAA requirement to be 15 years of age to take the Private Pilot Knowledge Test, a minimum age of 14 at time of enrollment is required.

Transfers to CSU
51 Hours Lecture, 102 Expected Outside of Class Hours, 153 Total Hours of Student Learning
Scheduled: Spring

II. Coding Information

Repeatability: Take 1 Time
Grading Option: Graded or Pass/No Pass
Credit Type: Credit - Degree Applicable
TOP Code: 302020

III. Course Objectives

A. Course Student Learning Outcomes

Upon completion of this course the student will be able to:

Pass the Federal Aviation Administration (FAA) Private Pilot Knowledge Test with a 70% level or better.

B. Course Objectives

Upon completion of this course the student will be able to:

1. Demonstrate a basic understanding of airplane systems and aerodynamic principles.
2. Demonstrate a basic understanding of airport facilities, air traffic control services, communication procedures, and sources of flight information.
3. Identify the basic elements of weather and evaluate aviation weather reports to determine those elements.
4. Identify the capabilities and limitations of airplane performance parameters and compute airplane performance and weight/balance solutions.
5. Demonstrate a basic understanding of navigation using charts and radio equipment.
6. Identify and analyze flight-related physiological factors.

7. Identify airborne emergencies and prepare solutions to those emergencies.
8. Demonstrate a basic understanding of the pre-flight planning process, the development of the flight route and the preparation of the flight plan.
9. Receive the requisite letter of recommendation from the Certified Flight Instructor (CFI) to take the FAA written and practical examinations for the Private Pilot License.

IV. Course Content

A. Pilot training, aviation opportunities and an introduction to human factors.
B. Airplane systems
   1. Airplane components and airworthiness.
   2. Power plant and related systems.
   3. Flight instruments.
C. Aerodynamic Principles
   1. The forces of flight.
   2. Stability.
   3. The aerodynamics of maneuvering flight.
D. Flight Operations - the Flight Environment
   1. Safety of flight.
   2. Airports.
   3. Aeronautical charts.
   4. Airspace.
E. Flight Operations - Communication and Flight Information
   1. Radar and Air Traffic Control (ATC) Services.
   2. Radio Procedures.
   3. Sources of Flight Information.
F. Meteorology for Pilots
   1. Basic Weather Theory.
   2. Weather Patterns.
   3. Weather Hazards.
G. Interpreting Weather Data
   1. The Forecasting Process.
   2. Printed Reports and Forecasts.
   3. Graphic Weather Products.
   4. Sources of Weather Information.
H. Airplane Performance
   1. Predicting Performance.
   2. Weight and Balance Theory and Calculations.
   3. Flight Computer Applications.
I. Navigation
   1. Pilotage and Dead Reckoning.
   2. Very High Frequency Omnidirectional Range (VOR) Navigation.
   3. Automatic Direction Finder (ADF) Navigation.
   4. Global Positioning Systems (GPS).
J. Integration of Pilot Knowledge and Skills for Basic Problems
   1. Aviation Physiology.
   2. Visual Flight Rules (VFR).
   3. Aeronautical Decision Making.
   4. The Flight Planning Process.

5. The Flight; Local and Cross-Country.

V. Assignments

A. Appropriate Readings
The student will be required to read the assigned text and supplemental FAA materials.

B. Writing Assignments
The student will complete assigned homework problems such as weight and balance calculations.

C. Expected Outside Assignments
The student should expect to spend an average of two hours outside of class for each hour of lecture to complete the appropriate Readings and the Writing/Computation Assignments. Student may also view the supplemental video series in conjunction with the textbook assignments.

D. Specific Assignments that Demonstrate Critical Thinking
The student will identify, analyze and solve a wide variety of aeronautical problems including powerplant, flight instrument, flight operations and weather data interpretations, and preparation of flight plans.

VI. Methods of Evaluation

Multiple measures of student performance, including participation, out-of-class assignments, chapter tests and a comprehensive final examination.

VII. Methods of Delivery

Check those delivery methods for which, this course has been separately approved by the Curriculum/Academic Standards Committee.

☒ **Traditional Classroom Delivery** ☐ Correspondence Delivery

☐ Hybrid Delivery ☐ Online Delivery

Instruction will include lecture, discussion, demonstration and video segments.

VIII. Representative Texts and Supplies

-Guided Flight Discovery "Private Pilot", Jeppesen Sanderson, Inc. – Current Edition
-FAA Airman Knowledge "Private Pilot Test Guide", Jeppesen Sanderson, Inc. – Current Edition
-Federal Aviation Regulations / Aeronautical Information Manual "FAR/AIM" ASA publications - Current edition.
-Slide Graphic Computer Manual "CSG" Flight Computer, formerly known as an E6-B.
-PN-1 Navigation Plotter.

IX. Discipline/s Assignment

Aviation

X. Course Status

Current Status: Active
Original Approval Date: 9/18/1990
Revised By: Peter Lee Datema