

Stage 1 - Private Pilot

Leading Edge Aviation

Ground Lesson 1

Version 2012

Note: Students should read Chapter 1, Sections A, B, and C, prior to Ground Lesson 1.

Lesson Objective:

- Become familiar with pilot training, aviation opportunities, and human factors in aviation.
- Gain a basic understanding of the school's pilot training program.

Academic Content:

Section A - Pilot Training

- How to Get Started
- Role of the FAA
- Fixed-Base Operators (FBOs)
- Eligibility Requirements
- Types of Training Available
- Phases of Training
- Private Pilot Privileges and Limitations

Date Completed _____

Time _____

Section B - Aviation Opportunities

- New Experiences
- Aviation Organizations
- Category/Class Ratings
- Additional Pilot Certificates
- Aviation Careers

Date Completed _____

Time _____

Section C - Introduction to Human Factors

- Aeronautical Decision Making
- Crew Resource Management Training
- Pilot-in-Command Responsibility
- Communication
- Resource Use
- Workload Management
- Situational Awareness
- Aviation Physiology
- Alcohol, Drugs, and Performance
- Fitness for Flight

Date Completed _____

Time _____

Completion Standards:

- The student will indicate, through oral quizzing, familiarity with pilot training programs, opportunities in aviation, and human factors. In addition, the instructor will make sure the student has a basic understanding of policies and procedures applicable to the school's pilot training program.

I certify that the aforementioned training has been conducted and/or received in accordance with Leading Edge Aviation Standards and the current 141 approved Jeppesen Private Pilot Syllabus.

Instructor _____

Date _____

Student _____

Date _____

Stage 1 - Private Pilot

Ground Lesson 2

Note: Students should read Chapter 2, Sections A, B, and C, prior to Ground Lesson 2.

Lesson Objective:

- Gain a basic understanding of the main airplane components and systems.
- Become familiar with flight instrument functions and operating characteristics, including errors and common malfunctions.
- Learn about the power plant and related systems.

Academic Content:

Section A - Airplanes

- Fuselage
- Wings
- Empennage
- Landing Gear
- Engine/Propeller
- Pilot's Operating Handbook (POH)

Date Completed _____

Time _____

Section B - The Powerplant and Related Systems

- Reciprocating Engine
- Induction Systems
- Supercharging and Turbocharging
- Ignition Systems
- Fuel Systems
- Refueling
- Oil Systems
- Cooling Systems
- Exhaust Systems
- Propellers
- Propeller Hazards
- Electrical Systems

Date Completed _____

Time _____

Section C - Flight Instruments

- Pitot Static Instruments
- Airspeed Indicator
- Altimeter
- Vertical Speed Indicator
- Gyroscopic Instruments
- Magnetic Compass

Date Completed _____

Time _____

Completion Standards:

- Demonstrate understanding during oral quizzing by instructor at completion of lesson
- Student completes Chapter 2 questions for Sections A,B, and C with a minimum score of 80%. Instructor reviews incorrect responses to ensure complete student understanding prior to progressing to Ground Lesson 3.

I certify that the aforementioned training has been conducted and/or received in accordance with Leading Edge Aviation Standards and the current 141 approved Jeppesen Private Pilot Syllabus.

Instructor _____

Date _____

Student _____

Date _____

Stage 1 - Private Pilot

Ground Lesson 3

Note: Students should read Chapter 3, Sections A, B, and C, prior to Ground Lesson 3.

Lesson Objective:

- Become familiar with aerodynamic principles, including the four forces of flight, stability, maneuvering flight, and load factor.
- Gain a basic understanding of stall/spin characteristics as they relate to training airplanes.
- Learn the importance of prompt recognition of stall indications.

Academic Content:

Section A - Four Forces of Flight

- Lift
- Airfoils
- Pilot Control of Lift
- Weight
- Thrust
- Drag
- Ground Effect

Date Completed _____

Time _____

Section B - Stability

- Three Axes of Flight
- Longitudinal Stability
- Center of Gravity Position
- Lateral Stability
- Directional Stability
- Stalls
- Spins

Date Completed _____

Time _____

Section C - Aerodynamics of Maneuvering Flight

- Climbing Flight
- Left-Turning Tendencies
- Descending Flight
- Turning Flight
- Load Factor

Date Completed _____

Time _____

Completion Standards:

- Demonstrate understanding during oral quizzing by instructor at completion of lesson.
- Student completes Chapter 3 questions for Sections A, B, and C with a minimum passing score of 80%. Instructor reviews incorrect responses to ensure complete understanding prior to progressing to Ground Lesson 4.

I certify that the aforementioned training has been conducted and/or received in accordance with Leading Edge Aviation Standards and the current 141 approved Jeppesen Private Pilot Syllabus.

Instructor _____

Date _____

Student _____

Date _____

Stage 1 - Private Pilot

Ground Lesson 4

Chapter 4, The Flight Environment

Leading Edge Aviation

Version 2012

Lesson Objective:

- Understand important safety considerations, including collision avoidance precautions, right-of-way rules, and minimum safe altitudes.
- Become familiar with airport marking and lighting, aeronautical charts, and types of airspace.
- Learn about collision avoidance procedures and runway incursion avoidance.

Academic Content:

Section A - Pilot Training

- Collision Avoidance/Visual Scanning
- Airport Operations
- Right-of-Way Rules
- Minimum Safe Altitudes
- Taxiing in Wind
- Positive Exchange of Flight Controls

Date Completed _____

Time _____

Section B - Airports

- Controlled and Uncontrolled
- Runway Layout
- Traffic Pattern
- Airport Visual Aids
- Runway and Taxiway Markings
- Ramp Area Hand Signals
- Runway Incursion Avoidance
- Land and Hold Short Operations (LAHSO)
- Airport Lighting
- Visual Glideslope Indicators
- Approach Light Systems
- Pilot-Controlled Lighting

Date Completed _____

Time _____

Section C - Aeronautical Charts

- Latitude and Longitude
- Projections
- Sectional Charts
- World Aeronautical Charts

Date Completed _____

Time _____

Section C - Airspace

- Classifications
- Uncontrolled Airspace
- Controlled Airspace
- Class E
- Class D
- Class C
- Class B
- Class A
- Special VFR
- Special Use Airspace
- Other Airspace Areas
- Emergency Air Traffic Rules
- Air Defense Identification Zones

Date Completed _____

Time _____

Completion Standards:

- Demonstrate understanding during oral quizzing by instructor at completion of lesson.
- Student completes Chapter 4 questions for Sections A, B, C, and D with a minimum passing score of 80%. Instructor reviews incorrect responses to ensure complete understanding prior to progressing to Ground Lesson 5.

I certify that the aforementioned training has been conducted and/or received in accordance with Leading Edge Aviation Standards and the current 141 approved Jeppesen Private Pilot Syllabus.

Instructor _____

Date _____

Student _____

Date _____

Stage 1 - Private Pilot

Ground Lesson 5

Chapter 3, Communication and Flight Information

Leading Edge Aviation

Version 2012

Lesson Objective:

- Become familiar with radar, transponder operations, and FAA radar equipment and services for VFR aircraft.
- Understand the types of services provided by Flight Service.
- Learn how to use the radio for communications.
- Gain a basic understanding of the sources of flight information, particularly the Aeronautical Information Manual and FAA advisory circulars.

Academic Content:

Section A - Radar and ATC Services

- Radar
- Transponder Operations
- FAA Radar Systems
- VFR Radar Services
- Automatic Terminal Information Service (ATIS)
- Flight Service

Date Completed _____

Time _____

Section B - Radio Procedures

- VHF Communication Equipment
- Using the Radio
- Phonetic Alphabet
- Coordinated Universal Time
- Common Traffic Advisory Frequency (CTAF)
- ATC Facilities at Controlled Airports
- Lost Communications Procedures
- Emergency Procedures
- Emergency Locator Transmitters (ELT's)

Date Completed _____

Time _____

Section C - Sources of Flight Information

- Airport/Facility Directory
- Federal Aviation Regulations
- Aeronautical Information Manual (AIM)
- Notices to Airmen (NOTAMs)
- Advisory Circulars
- Jeppesen Information Services

Date Completed _____

Time _____

Completion Standards:

- Demonstrate understanding during oral quizzing by instructor at completion of lesson.
- Student completes Chapter 5 questions for Sections A, B, and C with a minimum passing score of 80%. Instructor reviews incorrect responses to ensure complete understanding prior to progressing to the Stage I Exam in Ground Lesson 6.

I certify that the aforementioned training has been conducted and/or received in accordance with Leading Edge Aviation Standards and the current 141 approved Jeppesen Private Pilot Syllabus.

Instructor _____

Date _____

Student _____

Date _____

Stage 1 - Private Pilot

Ground Lesson 6

Private Pilot Textbook Chapters 1-5

Leading Edge Aviation

Version 2012

Lesson Objective:

- Demonstrate comprehension of the material presented in Chapters 1 through 5 of the Private Pilot textbook.

Academic Content:

Stage I Exam

- Airplane Systems
- Aerodynamic Principles
- The Flight Environment
- Communication and Flight Information

Score _____

Date Completed _____

Time _____

Completion Standards:

- This lesson and stage are complete when the student has passed the Stage I Exam with a minimum score of 80%, and the instructor has reviewed each incorrect response to ensure complete student understanding before progressing to Stage II.

I certify that the aforementioned training has been conducted and/or received in accordance with Leading Edge Aviation Standards and the current 141 approved Jeppesen Private Pilot Syllabus.

Instructor _____

Date _____

Student _____

Date _____

Stage II - Private Pilot Ground Lesson 7

Chapter 6, Meteorology for Pilots

Leading Edge Aviation

Version 2012

Lesson Objective:

- Learn the causes of various weather conditions, frontal systems, and hazardous weather phenomena.
- Understand how to recognize critical weather situations from the ground and during flight, including hazards associated with thunderstorms.
- Become familiar with recognition and avoidance of wind shear and wake turbulence.

Academic Content:

Section A - Basic Weather Theory

- The Atmosphere
- Atmospheric Circulation
- Atmospheric Pressure
- Coriolis Force
- Global Wind Patterns
- Local Wind Patterns

Date Completed _____

Time _____

Section B - Weather Patterns

- Atmospheric Stability
- Temperature Inversions
- Moisture
- Humidity
- Dew point
- Clouds and Fog
- Precipitation
- Air masses
- Fronts

Date Completed _____

Time _____

Section C - Weather Hazards

- Thunderstorms
- Turbulence
- Wake Turbulence
- Wind Shear
- Microburst
- Icing
- Restrictions to Visibility
- Volcanic Ash

Date Completed _____

Time _____

Completion Standards:

- Demonstrate understanding during oral quizzing by instructor at completion of lesson.
- Student completes Chapter 6 questions for Sections A, B, and C with a minimum passing score of 80%. Instructor reviews incorrect responses to ensure complete understanding prior to progressing to Ground Lesson 8.

I certify that the aforementioned training has been conducted and/or received in accordance with Leading Edge Aviation Standards and the current 141 approved Jeppesen Private Pilot Syllabus.

Instructor _____

Date _____

Student _____

Date _____

Stage II - Private Pilot

Ground Lesson 8

FAR/AIM - Private Pilot FAR's

Leading Edge Aviation

Version 2012

Lesson Objective:

- Understand the appropriate Federal Aviation Regulations in the FAR Private Pilot Airplane Recommended Study List.
- Gain specific knowledge of those FAR's which govern student solo flight operation, private pilot privileges and limitations, and National Transportation Safety Board (NTSB) accident reporting procedures.

Academic Content:

FAR's/NTSB

- FAR Part 1
- FAR Part 61
- FAR Part 91
- NTSB 830

Date Completed _____

Time _____

Completion Standards:

- Demonstrate understanding during oral quizzing by instructor at completion of lesson.
- Student completes Ground Lesson 8 Private Pilot FAR Exercises with a minimum passing score of 80%. Instructor reviews incorrect responses to ensure complete understanding prior to progressing to Ground Lesson 9.

I certify that the aforementioned training has been conducted and/or received in accordance with Leading Edge Aviation Standards and the current 141 approved Jeppesen Private Pilot Syllabus.

Instructor _____

Date _____

Student _____

Date _____

Stage II - Private Pilot

Ground Lesson 9

Chapter 7, Interpreting Weather Data

Leading Edge Aviation

Version 2012

Lesson Objective:

- Learn how to obtain and interpret weather reports, formats, and graphic charts.
- Become familiar with the sources of weather information during preflight planning and while in flight.
- Recognize critical weather situations described by weather reports and forecasts.

Academic Content:

Section A - The Forecasting Process

- Forecasting Methods
- Types of Forecasts
- Compiling and Processing Weather Data
- Forecasting Accuracy and Limitations

Date Completed _____

Time _____

Section B - Printed Reports and Forecasts

- Aviation Routine Weather Report (METAR)
- Radar Weather Reports
- Pilot Weather Reports
- Terminal Aerodrome Forecast (TAF)
- Aviation Area Forecast
- Winds and Temperatures Aloft Forecast
- Severe Weather Reports and Forecasts
- AIRMET/SIGMET/Convective SIGMET

Date Completed _____

Time _____

Section C - Graphic Weather Products

- Surface Analysis Chart
- Weather Depiction Chart
- Radar Summary Chart
- Satellite Weather Pictures
- Low-Level Significant Weather Prog
- Convective Outlook Chart
- Forecast Winds and Temperatures Aloft Chart
- Volcanic Ash Forecast and Dispersion Chart

Date Completed _____

Time _____

Section D - Sources of Weather Information

- Preflight Weather Sources
- In-Flight Weather Sources
- Enroute Weather Sources
- Weather Radar Services
- Automated Weather Reporting Systems

Date Completed _____

Time _____

Completion Standards:

- Demonstrate understanding during oral quizzing by instructor at completion of lesson.
- Student completes Chapter 7 questions for Sections A, B, C and D with a minimum passing score of 80%. Instructor reviews incorrect responses to ensure complete understanding prior to progressing to the Stage II Exam.

I certify that the aforementioned training has been conducted and/or received in accordance with Leading Edge Aviation Standards and the current 141 approved Jeppesen Private Pilot Syllabus.

Instructor _____

Date _____

Student _____

Date _____

Stage II - Private Pilot Ground Lesson 10

Stage II Exam

Leading Edge Aviation

Version 2012

Lesson Objective:

- Demonstrate comprehension of the material presented in Chapters 6 and 7 of the Private Pilot textbook and the FAR's that apply to private pilot operation, including private pilot privileges and limitations, and NTSB accident reporting requirements.

Academic Content:

Stage II Exam

- Meteorology for Pilots
- Federal Aviation Regulations
- Interpreting Weather Data

Score _____

Date Completed _____

Time _____

Completion Standards:

- This lesson and stage are complete when the student has passed the Stage II Exam with a minimum score of 80%, and the instructor has reviewed each incorrect response to ensure complete student understanding before progressing to Stage III.

I certify that the aforementioned training has been conducted and/or received in accordance with Leading Edge Aviation Standards and the current 141 approved Jeppesen Private Pilot Syllabus.

Instructor _____

Date _____

Student _____

Date _____

Stage III Private Pilot Ground Lesson 11

Chapter 8, Airplane Performance

Leading Edge Aviation

Version 2012

Lesson Objective:

- Learn how to use data supplied by the manufacturer to predict airplane performance, including takeoff and landing distances and fuel requirements.
- Learn to compute and control the weight and balance condition of a typical training airplane.
- Become familiar with basic functions of aviation computers.
- Understanding the effects of density altitude on takeoff and climb performance.

Academic Content:

Section A - Predicting Performance

- Aircraft Performance and Design
- Chart Presentations
- Factors Affecting Performance
- Takeoff and Landing Performance
- Climb Performance
- Cruise Performance
- Using Performance Charts

Date Completed _____

Time _____

Section B - Weight and Balance

- Importance of Weight
- Importance of Balance
- Terminology
- Principles of Weight and Balance
- Computation Method
- Table Method
- Graph Method
- Weight Shift Formula
- Effects of Operating at High Total Weights
- Flight at Various CG Positions

Date Completed _____

Time _____

Section C - Flight Computers

- Mechanical Flight Computers
- Time, Speed, and Distance
- Airspeed and Density Altitude Computations
- Wind Problems
- Conversions
- Multi-Part Problems

Date Completed _____

Time _____

Completion Standards:

- Demonstrate understanding during oral quizzing by instructor at completion of lesson.
- Student completes Chapter 8 questions for Sections A, B, and C with a minimum passing score of 80%. Instructor reviews incorrect responses to ensure complete understanding prior to progressing to Ground Lesson 12.

I certify that the aforementioned training has been conducted and/or received in accordance with Leading Edge Aviation Standards and the current 141 approved Jeppesen Private Pilot Syllabus.

Instructor _____

Date _____

Student _____

Date _____

Stage III - Private Pilot

Ground Lesson 12

Chapter 9, Navigation

Leading Edge Aviation

Version 2012

Lesson Objective:

- Learn the basic concepts for VFR navigation using pilotage, dead reckoning, and aircraft navigation systems.
- Become familiar with the guidelines and recommended procedures related to flight planning, use of an FAA Flight Plan, VFR cruising altitudes, and lost procedures.
- Gain a basic understanding of VFR navigation using pilotage, dead reckoning, and navigation systems.

Academic Content:

Section A - Pilotage and Dead Reckoning

- Pilotage
- Dead Reckoning
- Flight Planning
- VFR Cruising Altitudes
- Flight Plan
- Lost Procedures

Date Completed _____

Time _____

Section B - VOR Navigation

- Ground and Airborne Equipment
- VOR Orientation and Navigation
- VOR Checkpoints and Test Signals
- VOR Precautions
- Horizontal Situation Indicator
- Distance Measuring Equipment (DME)

Date Completed _____

Time _____

Section C - ADF Navigation

- ADF Equipment
- Orientation
- Homing
- ADF Intercepts and Tracking
- Movable-Card Indicator
- Radio Magnetic Indicator
- ADF Limitations

Date Completed _____

Time _____

Section D - Advanced Navigation

- VOR-DME-Based Area Navigation
- Inertial Navigation Systems
- Global Positioning System (GPS)

Completion Standards:

- Demonstrate understanding during oral quizzing by instructor at completion of lesson.
- Student completes Chapter 9 questions for Sections A, B, C, and D with a minimum passing score of 80%. Instructor reviews incorrect responses to ensure complete understanding prior to progressing to Ground Lesson 13.

I certify that the aforementioned training has been conducted and/or received in accordance with Leading Edge Aviation Standards and the current 141 approved Jeppesen Private Pilot Syllabus.

Instructor _____

Date _____

Student _____

Date _____

Stage III - Private Pilot

Ground Lesson 13

Chapter 10, Applying Human Factors Principles

Leading Edge Aviation

Version 2012

Lesson Objective:

- Gain an insight into important aviation physiological factors as they relate to private pilot operations.
- Understand how to apply the aeronautical decision making process to make effective choices during flight operations.
- Become familiar with tools used to perform self-assessments, communicate effectively, use resources, manage workload, and maintain situational awareness.

Academic Content:

Section A - Aviation Physiology

- Vision in Flight
- Night Vision
- Visual Illusions
- Disorientation
- Respiration
- Hypoxia
- Hyperventilation

Date Completed _____

Time _____

Section B - Aeronautical Decision Making

- Applying the Decision Making Process
- Pilot-in-Command Responsibility
- Communication
- Workload Management
- Resource Use
- Situational Awareness
- Applying Human Factors Training

Date Completed _____

Time _____

Completion Standards:

- Demonstrate understanding during oral quizzing by instructor at completion of lesson.
- Student completes Chapter 10 questions for Sections A, and B with a minimum passing score of 80%. Instructor reviews incorrect responses to ensure complete understanding prior to progressing to Ground Lesson 14.

I certify that the aforementioned training has been conducted and/or received in accordance with Leading Edge Aviation Standards and the current 141 approved Jeppesen Private Pilot Syllabus.

Instructor _____

Date _____

Student _____

Date _____

Stage III - Private Pilot

Ground Lesson 14

Chapter 11, Flying Cross-Country

Leading Edge Aviation

Version 2012

Lesson Objective:

- Develop a found understanding of the planning process for a cross-country flight.
- Become familiar with the details of flying a typical cross-country flight, including locating checkpoints, making in-flight time and fuel calculations, and evaluating weather conditions.
- Understand how to make decisions regarding alternative actions, such as implementing a diversion.

Academic Content:

Section A - The Flight Planning Process

- Developing the Route
- Preflight Weather Briefing
- Completing the Navigation Log
- Flight Plan
- Preflight Inspection

Date Completed _____

Time _____

Section B - The Flight

- Departure
- Centennial Airport to Pueblo Memorial Airport
- Pueblo Memorial Airport to La Junta Municipal Airport
- La Junta Municipal Airport to Centennial Airport
- Diversion to Limon Municipal Airport
- Return to Centennial Airport

Date Completed _____

Time _____

Completion Standards:

- Demonstrate understanding during oral quizzing by instructor at completion of lesson.
- Student completes Chapter 11 questions for Sections A and B with a minimum passing score of 80%. Instructor reviews incorrect responses to ensure complete understanding prior to progressing to the Stage III Exam.

I certify that the aforementioned training has been conducted and/or received in accordance with Leading Edge Aviation Standards and the current 141 approved Jeppesen Private Pilot Syllabus.

Instructor _____

Date _____

Student _____

Date _____

Stage III Private Pilot Ground Lesson 15

Stage III Exam, Private Pilot Textbook Chapters 8-11

Leading Edge Aviation

Version 2012

Lesson Objective:

- Demonstrate comprehension of the material presented in Chapters 8 through 11 of the Private Pilot textbook.

Academic Content:

Stage III Exam

- Airplane Performance
- Navigation
- Applying Human Factors Principles
- Flying Cross-Country

Score _____

Completion Standards:

- This lesson and stage are complete when the student has passed the Stage III Exam with a minimum score of 80%, and the instructor has reviewed each incorrect response to ensure complete student understanding before progressing to the End-of-Course Final Exams.

I certify that the aforementioned training has been conducted and/or received in accordance with Leading Edge Aviation Standards and the current 141 approved Jeppesen Private Pilot Syllabus.

Instructor _____

Date _____

Student _____

Date _____

Stage III - Private Pilot

Ground Lesson 16

Private Pilot Textbook - Chapters 1-11

Leading Edge Aviation

Version 2012

Lesson Objective:

- Demonstrate comprehension of the material presented in this course in preparation for the FAA Private Pilot Airman Knowledge Test.

Academic Content:

- Private Pilot End-of-Course Final Exam "A"

Score _____

Completion Standards:

- The student must complete the End-of-Course Final Exam "A" with a minimum passing score of 80% and the instructor should review each incorrect response to ensure complete student understanding before progressing to the End-of-Course Final Exam "B".

I certify that the aforementioned training has been conducted and/or received in accordance with Leading Edge Aviation Standards and the current 141 approved Jeppesen Private Pilot Syllabus.

Instructor _____

Date _____

Student _____

Date _____

Stage III - Private Pilot Ground Lesson 17

Private Pilot Textbook - Chapters 1-11

Leading Edge Aviation

Version 2012

Lesson Objective:

- Demonstrate comprehension of the material presented in this course in preparation for the FAA Private Pilot Airman Knowledge Test.

Academic Content:

- Private Pilot End-of-Course Final Exam "B"

Score _____

Completion Standards:

- The student must complete the End-of-Course Final Exam "B" with a minimum passing score of 80% and the instructor should review each incorrect response to ensure complete student understanding.

I certify that the aforementioned training has been conducted and/or received in accordance with Leading Edge Aviation Standards and the current 141 approved Jeppesen Private Pilot Syllabus.

Instructor _____

Date _____

Student _____

Date _____