Leading Edge Aviation

Version 2015 Student Name _____

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.

• Understand the essential components 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 SINGLE-PILOT RESOURCE MANAGEMENT Aeronautical Decision Making **Risk Management** Task Management Situational Awareness **CFIT** Awareness Automation Management Aviation Physiology Alcohol, Drugs, and Performance Fitness for Flight

Date Completed____

Time _____

Completion Standards:

Demonstrate understanding of pilot training programs, opportunities in aviation, and human factors during oral quizzing by the instructor. Demonstrate understanding of policies and procedures that apply 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 Plot Syllabus.

Instructor___

Student

Date___

Date

Chapter 2, Airplane Systems

Lesson Objective:

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

Academic Content:

Section A - Airplanes

00001011	Anplanco
	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 Co	ompleted	Time
	•	

Completion Standards:

- Demonstrate understanding of airplane components and systems, powerplant, and related systems, and flight instruments during oral quizzing by the instructor.
- Completes with a minimum score of 80%: questions for Chapter 2 Sections A,B, and C. Review with the instructor each incorrect response to ensure complete understanding before starting 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 Plot Syllabus.

Instructor_____

Date_		

Student_____

Leading Edge Aviation

Version 2015 Student Name

Chapter 3, Aerodynamic Principles

Leading Edge Aviation

Version 2015 Student Name

Lesson Objective:

- Become familiar with aerodynamic principles, including the four forces of flight, stability, maneuvering flight, and load factor.
- Understand stall and spin characteristics as they relate to training airplanes.
- Learn the importance of prompt recognition of stalls.
- Academic Content:

	A - Four Forces of Flight Lift Airfoils Pilot Control of Lift Weight Thrust Drag Ground Effect		
Date Co	mpleted	Time	
	B - Stability Three Axes of Flight Longitudinal Stability Center of Gravity Position Lateral Stability Directional Stability Stalls Spins		
Date Co	mpleted	Time	
	C - Aerodynamics of Maneuvering Climbing Flight Left-Turning Tendencies Descending Flight Turning Flight Load Factor	Flight	
Date Co	mpleted	Time	

Completion Standards:

Demonstrate understanding of stalls, spins, and basic aerodynamic principles during oral quizzing by the instructor.

Complete with a minimum score of 80%: questions for Chapter 3 Sections A, B, and C. Review with the instructor each incorrect response to ensure complete understanding before starting 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 Plot Syllabus.

Instructor_____

Student_____

Date_____

Chapter 4, The Flight Environment

Leading Edge Aviation

Version 2015 Student Name

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:

A - Pilot Training			
Collision Avoidance/Visual Scanning Airport Operations Right-of-Way Rules			Minimum Safe Altitudes Taxiing in Wind Positive Exchange of Flight Controls
ompleted	Time		
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
ompleted	Time		
C - Aeronautical Charts			
Latitude and Longitude			Terminal Area Chart
Projections Sectional Charts			World Aeronautical Charts Chart Symbology
ompleted	Time		
			Special VFR Special Use Airspace
			Other Airspace Areas
Class E			Emergency Air Traffic Rules
			Air Defense Identification Zones Security-Related Flight Restrictions
Class B			Intercept Procedures
Class A			
	Airport Operations Right-of-Way Rules ompleted B - Airports Controlled and Uncontrolled Runway Layout Traffic Pattern Airport Visual Aids Runway and Taxiway Markings Ramp Area Hand Signals ompleted C - Aeronautical Charts Latitude and Longitude Projections Sectional Charts ompleted C - Airspace Classifications Uncontrolled Airspace Controlled Airspace Class E Class D Class C Class B	Collision Avoidance/Visual Scanning Airport Operations Right-of-Way Rules Dempleted Time B - Airports Controlled and Uncontrolled Runway Layout Traffic Pattern Airport Visual Aids Runway and Taxiway Markings Ramp Area Hand Signals Dempleted Time C - Aeronautical Charts Latitude and Longitude Projections Sectional Charts Dempleted Time C - Airspace Classifications Uncontrolled Airspace Controlled Airspace Class E Class D Class C Class B	Collision Avoidance/Visual Scanning Airport Operations Right-of-Way Rules pompleted

Completion Standards:

Date Completed

Demonstrate understanding of airport marking and lighting, runway incursion avoidance, collision avoidance, right-of-way rules, minimum safe altitudes, aeronautical charts, and airspace during oral quizzing by the instructor.

Time

Complete with a minimum score of 80%: questions for Chapter 4 Sections a, b, C, and D. Review with the instructor each incorrect response to ensure complete understanding before starting 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			

Chapter 5 Communication and Flight Information

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

	ompleted	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 Co	ompleted	Time
	C - Sources of Flight Information Airport/Facility Directory Federal Aviation Regulations Aeronautical Information Manual (AIM) Notices to Airmen (NOTAMS) Advisory Circulars Jeppesen Information Services	Time

Completion Standards:

- Demonstrate understanding of radar and ATC services, radio procedures and sources of flight information during oral quizzing by the instructor.
- Complete with a minimum score of 80%: questions for Chapter 5 Sections A, B, and C. Review with the instructor each incorrect response to ensure complete understanding before taking 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 Plot Syllabus.

Instructor_____

Student_____

Leading Edge Aviation

Version 2015 Student Name

Date_____

Date_____

Private Pilot Textbook Chapters 1-5

Lesson Objective:

• Demonstrate knowledge of the subjects covered in Ground Lessons 1-5.

Academic Content:

Stage I Exam		
	Airplane Systems	
	Aerodynamic Principles	
	The Flight Environment	
	Communication and Flight Information	

Score_____

Date Completed_____

Time _____

Completion Standards:

To complete the lesson and stage, pass the Stage I Exam with a minimum score of 80%, Review with the instructor each incorrect response to ensure complete 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_____

Student_____

Leading Edge Aviation

Version 2015 Student Name

Date_____

Chapter 6, Meteorology for Pilots

Leading Edge Aviation

Version 2015 Student Name

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 of basic weather theory, weather patterns, and weather hazards during oral quizzing by the instructor.
 Complete with a minimum passing score of 80%: questions for Chapter 6 Sections A, B, and C. Review incorrect responses with the instructor to ensure complete understanding before starting 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_____

FAR/AIM - Private Pilot FAR's

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 of the relevant regulations in 14 CFR (FAR) Part 1, 61, 91, and 49 CFR (NTSB) 830 during oral quizzing by the instructor.
- 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_____

Student

Date_____

Date_____

Leading Edge Aviation

Version 2015 Student Name

Chapter 7, Interpreting Weather Data

Lesson Objective:

Version 2015 Student Name

- 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 Co	mpleted	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 Co	mpleted	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 Co	mpleted	Time	
Section	D - Sources of Weather Information Preflight Weather Sources In-Flight Weather Sources Enroute Flight Advisory Service Weather Radar Services Automated Weather Reporting Systems		
Date Co	mpleted	Time	
	tion Standards: Demonstrate understanding during oral quizzin Complete with a minimum score of 80%: quest complete understanding before taking the Stag	ions for Chapter 7 Sections A, B, C, and D. Rev	iew with the instructor each incorrect response

I certify that the aforementioned training has been conducted and/or received in accordance with Leading Edge Aviation Standards and the current 141

Instructor	 	
Student		

approved Jeppesen Private Pilot Syllabus.

Date		

Stage II Exam

Leading Edge Aviation

Version 2015 Student Name

Lesson Objective:

• Demonstrate comprehension of the material presented in Ground Lessons 7-9.

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_

Student____

Date____

Date___

Chapter 8, Airplane Performance

Leading Edge Aviation

Version 2015 Student Name

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.
- · Understand 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	Comp	leted_
------	------	--------

Time _____

Section B - Weight and Balance

Importance of Weight
 Importance of Balance
 Terminology
 Principles of Weight and Balance
 Computation Method
 Weight and Balance Methods - Computation, Table, and Graph
 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:

- Calculate airplane performance and weight and balance using performance charts and a flight computer and discuss the results with the instructor.
- Complete with a minimum score of 80%: questions for Chapters 8 Sections A, B, and C. Review with the instructor each incorrect response to ensure complete understanding before starting 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 Plot Syllabus.

Instructor_	

Student_____

Date_____

Chapter 9, Navigation

Lesson Objective:

- Learn the basic concepts for VFR flight planning, 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 Training
- ADF Intercepts and TrackingMovable-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:

- Create a flight plan as assigned by the instructor and review the flight plan with the instructor.
 Demonstrate understanding of pilotage and dead reckoning. VOR navigation. ADF navigation
- Demonstrate understanding of pilotage and dead reckoning, VOR navigation, ADF navigation, and GPS navigation during oral quizzing by the instructor at completion of lesson.
- Compete with a minimum score of 80% questions for Chapter 9 Sections A, B, C, and D. Review with the Instructor 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 Plot Syllabus.

Instructor_____

Date_____

Student_____

Date_____

Leading Edge Aviation

Version 2015 Student Name

Chapter 10, Applying Human Factors Principles

Lesson Objective:

- · Gain insight into important aviation physiological factors as they relate to private pilot operations.
- · Become familiar with single-pilot resource management (SRM) and understand its importance.
- 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, manage tasks and resources, 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		
	Hazardous Attitudes		
	Risk Management		
	Task Management		
	Situational Awareness		
	CFIT Awareness		
	Automation Management		
	SRM Training		
Date Co	ompleted	Tir	me
	•		

Completion Standards:

 Demonstrate understanding of human factors principles, including SRM, during oral quizzing by the instructor. Complete with a minimum score of 80% questions for Chapter 10 Sections A, and B. Review with the instructor each incorrect response to ensure complete understanding before starting 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 Plot Syllabus.

Instructor_____

Student_____

Leading Edge Aviation

Version 2015 Student Name

Date_____

Chapter 11, Flying Cross-Country

Lesson Objective:

- · Gain proficiency in planning 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 \square

- Fundamentals of Flight Monitoring 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 of the flight planning process and of using a flight plan during the flight during oral quizzing by the instructor. Complete with a minimum score of 80% question for Chapter 11 Sections A and B. Review with the instructor each incorrect response to ensure complete understanding before taking 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 Plot Syllabus.

Instructor_

Student

Date__

Date

Leading Edge Aviation

Version 2015 Student Name

Stage III Exam, Private Pilot Textbook Chapters 8-11

Lesson Objective:

• Demonstrate comprehension of the subjects covered in Ground Lessons 11-14

Academic Content:

Stage III Exam

Airplane Performance Navigation Applying Human Factors Principles Flying Cross-Country

Score

Date Completed_____

Time ____

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 administering 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 Plot Syllabus.

Instructor____

Student_

Leading Edge Aviation

Version 2015 Student Name

Date

Private Pilot Textbook - Chapters 1-11

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

Date Completed_____

Time _____

Completion Standards:

Complete the End-of-Course Final Exam "A" with a minimum passing score of 80% and review with the instructor each incorrect response to ensure complete understanding before taking 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 Plot Syllabus.

Instructor

Student___

Leading Edge Aviation

Version 2015 Student Name

Date____

Date

Private Pilot Textbook - Chapters 1-11

Leading Edge Aviation

Version 2015 Student Name

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_____

Date Completed_____

Time _____

Completion Standards:

Complete the End-of-Course Final Exam "B" with a minimum passing score of 80% and review with the instructor each incorrect response to ensure complete understanding so the instructor can provide recommendation to take the Private Pilot Airman Knowledge Test.

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 Plot Syllabus.

Instructor_____

Student

Date_____