CHESTER COUNTY AVIATION

Private Pilot – ASEL Certification Ground School Training Course Outline (TCO) and Syllabus

Revision 2.1, 15 JAN 2024

This manual has been reviewed by Chester County Aviation but is not FAA Approved.
This is for 14 CFR Part §61 use only.

1. FLIGHT SCHOOL AND LOCATION

a. Faith Works Aviation LLC DBA Chester County Aviation is located at the Chester County Airport in Coatesville PA; and is owned and operated as:

Chester County Aviation
1 Earhart Drive
Coatesville, PA 19320

2. COURSE TITLE AND CONTENET

a. This course title is “Private Pilot - ASEL Certification Ground School Course.”
b. This Training Course Outline (TCO) meets the curriculum requirements for the Private Pilot Certification Course contained in FAR Part 141 appendix B and 14 CFR § 61.105.
c. A minimum of 35 hours of total training time is required in the following tasks:

Task	Aeronautical Knowledge Area
1	Applicable Federal Aviation Regulations for private pilot privileges, limitations, and flight operations
2	Accident reporting requirements of the National Transportation Safety Board
3	Applicable subjects of the “Aeronautical Information Manual” and the appropriate FAA advisory circulars
4	Aeronautical charts for VFR navigation using pilotage, dead reckoning, and navigation systems
5	Radio communication procedures
6	Recognition of critical weather situations from the ground and in flight, windshear avoidance, and the procurement and use of aeronautical weather reports and forecasts
7	Safe and efficient operation of aircraft, including collision avoidance, and recognition and avoidance of wake turbulence
8	Effects of density altitude on takeoff and climb performance
9	Weight and balance computations
10	Principles of aerodynamics, power plants, and aircraft systems
11	Stall awareness, spin entry, spins, and spin recovery techniques;
12	Aeronautical decision making and judgment
13	Preflight action that includes: • How to obtain information on runway lengths at airports of intended use, data on takeoff and landing distances, weather reports and forecasts, and fuel requirements; and • How to plan for alternatives if the planned flight cannot be completed or delays are encountered.

3. COURSE OBJECTIVES AND COMPLETION STANDARDS

a. Objectives:

i. Obtain the knowledge necessary for the Private Pilot – Airplane Knowledge Exam (PAR) and to be a knowledgeable airman.

b. Completion Standards:

i. Students will demonstrate satisfactory knowledge of the knowledge areas necessary for the Private Pilot – Airplane Knowledge Exam (PAR).
ii. Students will meet minimum grading requirements.

4. MANAGEMENT PERSONELL

a. All personnel meet the minimum applicable requirements of 14 CFR Part 61 and qualifications to serve in their roles.

b. The management personnel in administration will meet the following qualifications:

i. Hold at least an Advanced Ground Instructor Certificate.
ii. Hold a Flight Instructor Certificate with an Airplane Rating.
iii. 2 years of flight training experience and 750 hours as a Flight Instructor.
iv. Have at least 1 year of experience in classroom aviation instruction.

c. An Assistant Chief Ground Instructor is not required for this course.

d. The following individuals will serve as management personnel in the administration of this TCO.

Title:	**Name:**	**FAA Certificate:**
Director Of Training	Nicholas McBride	AIGI; CFI-IA
Lead Ground Instructor	Leonard Razzi Jr.	AGI

5. INSTRUCTOR QUALIFICATIONS

a. Each instructor assigned to this course must hold at least an Advanced Ground Instructor Certificate or Flight Instructor Certificate with an Airplane Rating.

6. CHECK INSTRUCTOR PILOT LIST

Reference: 14 CFR 141.37; AC 141-1B

a. This course does not require the use of Check Instructor Pilots.

7. AIRPORT TO BE USED FOR FLIGHT TRAINING

Reference: 14 CFR 141.55(c)(4)

a. This course will not conduct any flight training.

b. The Chester County Airport (KMQS) is the main base of operations for training in this course See CCA Standard Operating Procedures Manual (SOPM) 5.4 for a full list of airports. All airports have hard-surfaced runways and meet § 141.38 requirements for day and night flight operations. All airports have fuel and maintenance services available.

8. AIRCRAFT TO BE USED FOR FLIGHT TRAINING

Reference: 14 CFR 141.39(a)

a. This course does not require the use of aircraft for flight training.

9. FLIGHT SIMULATION

a. This course does not require the use of flight simulators for flight training.

10. SCHOOL SAFETY POLICIES, PROCEDURES, AND LIMITATIONS

Reference: 14 CFR 141

a. See CCA Standard Operating Procedures Manual (SOPM).

11. ENROLLEMNT AND GRADUATION

a. The Federal Aviation Administration has a minimum age of 15 years of age to take the Private Pilot Airman Knowledge Exam (PAR). Students may not be permitted to enroll in the class unless by the scheduled end of that class the student has reached their 15th birthday.

b. Each student will receive an electronic certificate of enrollment that includes the name of the course in which the student is enrolled and the date of that enrollment. In addition, each student will be provided with a copy of the training syllabus.

c. Since this course is ground training only, verification of student citizenship is not required.

d. At completion of this course, the student will receive a graduation certificate certified by the school's course administrator and class instructor. This does not authorize the student to take the FAA PAR knowledge exam; a separate endorsement must be given from the school to take the PAR knowledge exam. This certificate can be given digitally or physically.

e. The FAA PAR knowledge exam must be taken within 90 days of graduation.

f. An example enrollment and graduation certificate is attached to this document at the end of the TCO.

12. TRAINING FACILITY

Reference: 14 CFR 141.55(b)

a. The training rooms are well lit, and the temperature is thermostatically controlled. Each room is well ventilated and conforms to the local building, sanitation, and health codes. The rooms are designed and located so that students will not be distracted by instruction conducted in the other rooms or by flight and maintenance operations at the airport.

13. GROUND BREIFING ROOMS

Reference: 14 CFR 141.55(b)

a. Eicher Classroom; Dimensions are 22'x27' with one entry and exit door. The room contains tables with chairs, a whiteboard, and a media playback system. A maximum number of 45 students may be trained in this room at a single time.

b. Briefing Room 1; Dimensions are 11x17' with one entry and exit door. The room contains a single table with chairs, a whiteboard, and a TV for media presentation. A maximum number of 5 students may be trained in this room at a single time.

c. Briefing Room 2; Dimensions are 11x17' with one entry and exit door. The room contains a single table with chairs, a whiteboard, and a TV for media presentation. A maximum number of 5 students may be trained in this room at a single time.

d. Chief Instructor Office: Dimensions are 11x17' with one entry and exit door. The room contains a single table with chairs, a whiteboard, and a TV for media presentation. A maximum number of 3 students may be trained in this room at a single time.

e. Hangar 2: A space for training can be furnished on the northwest corner of the hangar in the event more dedicated locations are unbailable. The space will be sectioned off from the remaining parts of the hangar with temporary wall dividers.

f. Wi-Fi is available throughout the entire facility and 2 computers are available to the students at any time. The computers are in the main lobby. All ground briefing rooms will contain the necessary training aids and references to conduct each lesson outline in this TCO.

14. COURSE STRUCTURE

a. This course is to be taught using a building a block method to bring the student from rote to application or correlation levels of learning. Each stage and lesson build upon the previous lesson and applies knowledge from previous lessons.

15. GRADING

a. A minimum passing score of “C” in the overall course and a minimum of “B” on the final exam is necessary to pass the course and receive the graduation certificate. All items found deficient must be reviewed by the course instructor. The overall grading is as follow:

- 90-100% = “A”
- 80-89% = “B”
- 70-79% = “C”
- 0-69% = “F”

- Course Participation = 20%
- Quiz 1 = 15%
- Quiz 2 = 15%
- Mid-Term Exam = 20%
- Final Exam = 30%

16. REFERENCE MATERIALS

a. Required text can be furnished in a digital or physical fashion so long as the student has suitable access to the text. These are required texts:

i. FAA 8083-25B Pilots Handbook of Aeronautical Knowledge
ii. FAA 8083-3C Airplane Flying Handbook
iii. FAA 8082-28 Aviation Weather Handbook
iv. FAA-CT-8080-2H Computer Testing Supplement
v. Training Aircraft POH/PIM/AFM
vi. FAA Aeronautical Chart Users Guide

17. ATTENDANCE

a. Attendance to classes is key for consistency of learning and success in the course.

b. Students who are absent to a class must watch the missed class recording and email an instructor to update their grade. Partial attendance is not permitted.

18. FAA-INDUSTRY TRAINING STANDARDS (FITS)

a. This flight training syllabus uses the concepts developed under the FAA-Industry Training Standards (FITS) program. FITS incorporates three tenets.

i. Scenario-Based Training (SBT)
ii. Single-Pilot Resource Management (SRM)
iii. Learner Centered Grading (LCG)

b. Scenario-Based Training (SBT) uses real-world scenarios as the foundation of training. Flight maneuvers are still a vital part of flight training, but the use of real-world scenarios help

to develop a pilot's decision-making skills. The training presents situations and circumstances that pilots face every day as learning experiences.

c. Single-Pilot Resource Management (SRM) includes the concepts of Aeronautical Decision Making (ADM), Risk Management (RM), Task Management (TM), Automation Management (AM), Controlled Flight into Terrain (CFIT) awareness, and Situational Awareness (SA). SRM training helps.

d. Learner-Centered Grading (LCG) includes two parts: learner self-assessment and a detailed debrief by the instructor. The purpose of the self-assessment is to stimulate growth in the learner's thought processes and, in turn, behaviors. The self-assessment is followed by an in-depth discussion between the instructor and the customer that compares the instructor's assessment to the customer's self-assessment.

19. SCENARIO BASED TRAINING (SBT)

a. The scenario-based approach to training pilots emphasizes the development of critical thinking and flight management skills, rather than focusing solely on traditional maneuver-based skills. The goal of this training philosophy is the accelerated acquisition of higher-level decision-making skills. Such skills are necessary to prevent pilot-induced accidents.

b. Scenario-based training goals include the development of:

i. Critical thinking skills
ii. Aeronautical decision-making skills.
iii. Situational awareness
iv. Pattern recognition (emergency procedures) and judgment skills
v. Automation competence
vi. Planning and execution skills
vii. Procedural knowledge
viii. Psychomotor (hand-eye coordination) skills
ix. Risk management skills
x. Task management skills
xi. Automation management skills
xii. Controlled flight into terrain (CFIT) awareness

c. It is vital that the student and the instructor communicate the following information well in advance of every training flight:

i. Purpose of the flight
ii. Pressures to complete the flight (real or simulated)
iii. Risks/hazards associated with the scenario (real or simulated)
iv. Scenario destination(s)
v. Desired outcomes
vi. Possible in-flight scenario changes or deviations (during later stages of the program)

d. SBT Scenarios are set forth throughout the syllabus and denoted in the "Script" column for each lesson. The script is the preset SBT scenario to be used to conduct the line-item or task.

e. Scenario-based training best fits an open philosophy of blended and multiple learning solutions in which change, and experience are valued and the lines between training and performance improvement are blurred.

f. For scenario-based training to be effective it must generally follow a performance improvement imperative. The focus is on improved outcomes rather than the acquisition of knowledge and skills. Success requires a blended, performance-based, and reinforced solution. This is the basis for the 0-4 grading scale system.

g. To determine a student's effectiveness in SBT, an Instructor Pilot should do the following:

i. Share experiences about the subject event
ii. Describe desirable outcomes.
iii. Share best practices or known instances of consistent achievement of the desired outcomes.
iv. Create indicators of successful outcomes • Create strategies expected to lead to successful outcomes.
v. Establish descriptions of successful and unsuccessful performance behaviors related to these strategies (note that outcome measures and performance behaviors will constitute the evaluative criteria for assessing performance in the scenario).

20. SINGLE-PILOT RESOURCE MANAGEMENT (SRM)

a. Single-Pilot Resource Management is defined as the art and science of managing all the resources (both onboard the aircraft and from outside sources) available to a pilot flying in a single-pilot operation (prior to and during flight) to ensure that the successful outcome of the flight is never in doubt.

b. SRM includes the concepts of:

i. Task Management (TM)
ii. Automation Management (AM)
iii. Risk Management (RM)
iv. Aeronautical Decision Making (ADM)
v. Situational Awareness (SA)
vi. Controlled Flight Into Terrain (CFIT) awareness

c. SRM training helps a pilot maintain situational awareness by

i. Managing the technology in the aircraft as well as aircraft control and navigation tasks.
ii. Enabling the pilot to accurately assess and manage risk while making accurate and
iii. timely decisions.
iv. Helping pilots learn how to gather information, analyze it and make decisions.

d. In most flight scenarios, there is no one correct answer. Pilots are expected to analyze each situation considering their:

i. Experience level
ii. Personal minimums
iii. Current physical and mental condition

iv. Ability to make their own decisions as best as possible.

21. LEARNER-CENTERED GRADING (LCG)

a. Learner-centered grading includes two parts:

i. Learner self-assessment.
ii. A detailed debrief by the instructor.

b. The purpose of the self-assessment is to stimulate growth in the learner's thought processes. and, in turn, behaviors. The self-assessment is followed by an in-depth discussion between you and your flight instructor that compares your self-assessment to the instructor's assessment.

c. Pre- and postflight briefings are essential for setting goals. During events and tasks that require high levels of attention, there may be little time for learning as the bulk of your cognitive resources are given to performing the actual task.

22. COURSE OVERVIEW

a. This course is comprised of two (2) stages and 30 lessons.
b. A Quiz is a multiple-choice written knowledge exam designed to measure a student's progress towards the completion of a stage. The minimum passing score is 70%.
c. The Mid-Term Exam is a 60-question multiple-choice written exam designed to validate a student's learning during Stage 1. The minimum passing score is 70%.
d. The Final Exam is a 60-question multiple-choice written exam designed to validate a student's learning throughout the entire course. The minimum passing score is 80%.
e. Below is the current organization of each Phase and Lesson.

Stage	Lesson	Lesson Title	Total Training Time
1	**1**	Introduction Into Aviation	2.0 Hours
1	**2**	Aerodynamics of Flight - Lift and Stability	2.0 Hours
1	**3**	Aerodynamics of Flight - Stalls and the Propeller	2.0 Hours
1	**4**	Aircraft Flight Control and Systems - Flight Controls, Electrical, and Hydraulic	2.0 Hours
1	**5**	Aircraft Flight Control and Systems - Powerplant	2.0 Hours
1	**6**	Aircraft Flight Control and Systems - Fuel and Engine Controls	2.0 Hours
1	**7**	Aircraft Flight Instruments - Pitot-Static	2.0 Hours
1	**8**	Aircraft Flight Instruments - Gyroscopic, Compass, and Modern Avionics	2.0 Hours
1	**9**	Aircraft Documents and Maintenance (*Quiz*)	2.0 Hours
1	**10**	Weight and Balance	2.0 Hours
1	**11**	Aircraft Performance Charts	2.0 Hours
1	**12**	Airport Operations - Data, Signs, Markings, and Lighting	2.0 Hours
1	**13**	Airport Operations - Traffic Pattern and ATC Communication	2.0 Hours
1	**14**	Federal Aviation Regulations (FARs) / AIM	2.0 Hours
1	**15**	Mid-Term Exam	2.0 Hours
2	**16**	Weather Theory - Structure and Global Wind Patterns	2.0 Hours
2	**17**	Weather Theory - Stability and Saturation	2.0 Hours
2	**18**	Weather Theory - Air Masses and Hazards	2.0 Hours
2	**19**	Weather Products	2.0 Hours
2	**20**	National Airspace System	2.0 Hours
2	**21**	Sectional Charts and Associated Publications	2.0 Hours
2	**22**	Electronic (VOR) Navigation	2.0 Hours
2	**23**	Electronic (GPS) and Visual Navigation	2.0 Hours
2	**24**	Cross-Country Flight Planning (*Quiz*)	2.0 Hours
2	**25**	Night Flying	2.0 Hours
2	**26**	Aeronautical Decision Making (ADM)	2.0 Hours
2	**27**	Aeromedical and Human Factors	2.0 Hours
2	**28**	FAA Knowledge Exam Prep	2.0 Hours
2	**29**	FAA Knowledge Exam Prep	2.0 Hours
2	**30**	Final Exam	2.0 Hours
		Total Training Time:	**60.0 Hours**

Example Course Enrollment Certificate:

CHESTER COUNTY AVIATION

Certificate of Enrollment

FAR Part 61

This certificate acknowledges that the below listed student has enrolled in the following training course conducted by Chester County Aviation

"Private Pilot ASEL - Certification Course Ground School"

Student Name
(First, MI, Last Name)

Date of Enrollment

Chief Ground Instructor
(First, MI, Last Name)

Example Course Graduation Certificate:

Certificate Of Graduation

This certifies that

Ground School Student

has successfully completed Chester County Aviation's Private Pilot – ASEL Certification Ground School Course and demonstrated satisfactory understanding of the required aeronautical knowledge areas required of a Private Pilot per FAR 141 Appendix B or 14 CFR §61.105.

Nicholas McBride, *Chief Ground Instructor*

05/09/2023
Date

Private Pilot – ASEL Certification Ground School Course Syllabus

Chester County Aviation

Located At:
Chester County / G.O. Carlson Airport
1 Earhart Drive, Suite 4
Coatesville, PA 19320

chestercountyaviation.com
610-384-9005

Stage 1 | Introduction into Airmanship	
Total Training Time	30.0 Hours
Evaluation Strategy:	Mid-Term Exam
Stage Objectives:	• Enroll the student in the course and set expectations. • Teach the student to the highest level of learning possible. • Develop knowledge, understanding, and skill in aerodynamics, flight controls, systems, flight instruments, documentation, maintenance, weight & balance, performance charts, airport operations, and FARs/AIM.
Stage Completion Standards:	• Complete the Mid-Term Exam with a minimum passing score of 70%. • Review all deficiencies with instructor.
Stage Content:	1. Introduction Into Aviation 2. Aerodynamics of Flight - Lift and Stability 3. Aerodynamics of Flight - Stalls and the Propeller 4. Aircraft Flight Control and Systems - Flight Controls, Electrical, and Hydraulic 5. Aircraft Flight Control and Systems - Powerplant 6. Aircraft Flight Control and Systems - Fuel and Engine Controls 7. Aircraft Flight Instruments - Pitot-Static 8. Aircraft Flight Instruments - Gyroscopic, Compass, and Modern Avionics 9. Aircraft Documents and Maintenance (Quiz) 10. Weight and Balance 11. Aircraft Performance Charts 12. Airport Operations - Data, Signs, Markings, and Lighting 13. Airport Operations - Traffic Pattern and ATC Communication 14. Federal Aviation Regulations (FARs) / AIM 15. Mid-Term Exam

Stage 1 | Lesson 1 - Introduction into Aviation					
Total Training Time:	2.0 Hours	**Event Type:**	Oral	**Event Location:**	Classroom
Evaluation Strategy:	Mid-Term Exam				
References:	FAA 8083-25B (PHAK) {Chapters 1 and 3}; FAA 8083-3C (AFH) {Chapter 1}				
Lesson Objectives:	• Introduce the students into the ground training course and training process. • Increase the student's understanding of the FAA's role in the certification process. • Develop an understanding of the major components and structure of an airplane. • Develop an understanding of how an airplane can fly.				
Lesson Completion Standards:	• Student is aware of the training process and outcomes by obtaining a course enrollment certificate. • Student demonstrates satisfactory knowledge of airplane construction and basic lift theory by answering questions and actively participating in classroom discussions.				
Lesson Content:	**ADMINISTRATIVE TASKS** • Course Elements • Course Materials • Exams and Quizzes • Course Outcomes **INTRODUCTION INTO AVIATION** • History of Flight • Role of the FAA • Aircraft and Pilot Certifications • Certification Process of Pilots • Continued Education **AIRFRAME CONSTRUCTION** • Intro to Lift • 3 Axes of flight • The Empennage • The Wings • The Fuselage • The Power Plant • The Landing Gear • Types of Structure Construction **PRINCIPLES OF FLIGHT** • Atmospheric Considerations • Four Forces of Flight • Climbs, Turns, and Descents • Brunelle's Principle and Newton's Third Law of Motion				

Stage 1 | Lesson 2 - Aerodynamics of Flight - Lift and Stability					
Total Training Time:	2.0 Hours	**Event Type:**	Oral	**Event Location:**	Classroom
Evaluation Strategy:	Mid-Term Exam				
References:	FAA 8083-25B (PHAK) {Chapter 4 and 5}				
Lesson Objectives:	• Develop an understanding of the how an aircraft produces lift in many different scenarios. • Develop an understanding of aircraft stability and aerodynamic tendencies.				
Lesson Completion Standards:	•Student demonstrates satisfactory knowledge of aerodynamic principles and stability by answering questions and actively participating in classroom discussions.				
Lesson Content:	**AERODYNAMIC PRINCIPLES** • Lift • Lift Equation • Weight • Thrust • Drag • Drag Equation • Types of Drag • Wingtip Vortices and Wake Turbulence • Ground Effect • Forces in a Turn **STABILITY OF AIRCRAFT** • 3 Axes of Motion • Moment and Moment Arm • Static and Dynamic Stability • Airframe Design Effects of Stability				

Stage 1 | Lesson 3 - Aerodynamics of Flight - Stalls and the Propeller					
Total Training Time:	2.0 Hours	**Event Type:**	Oral	**Event Location:**	Classroom
Evaluation Strategy:	Mid-Term Exam				
References:	FAA 8083-25B (PHAK) {Chapter 4 and 5}				
Lesson Objectives:	• Develop an understanding of the how an aircraft produces lift in many different scenarios. • Develop an understanding of aircraft aerodynamic stalls.				
Lesson Completion Standards:	• Student demonstrates satisfactory knowledge of aerodynamic principles by answering questions and actively participating in classroom discussions.				
Lesson Content:	**STALLS** • Angle of Attack (Critical) • Coefficient of Lift • Load Factor • Spins, Entry, Developed, and Recovery **EFFECTS OF THE PROPELLER** • Propeller Design • Torque • Asymmetric Loading (P-Factor) • Spiraling Slipstream • Gyroscopic Precession				

Stage 1 | Lesson 4 - Aircraft Flight Control and Systems - Flight Controls, Electrical, and Hydraulic					
Total Training Time:	2.0 Hours	**Event Type:**	Oral	**Event Location:**	Classroom
Evaluation Strategy:	Mid-Term Exam				
References:	FAA 8083-25B (PHAK) {Chapters 6 and 7}				
Lesson Objectives:	• Develop knowledge and understanding of Flight Controls, Electrical, and Hydraulic • Gain knowledge, understanding and operations skill of most aircraft systems.				
Lesson Completion Standards:	•Student demonstrates satisfactory knowledge of primary and secondary flight controls, and most aircraft systems by answering questions and actively participating in classroom discussions.				
Lesson Content:	**PRIMARY FLIGHT CONTROLS** • Aileron • Elevator • Rudder • Adverse Yaw **SECONDARY FLIGHT CONTROLS** • Flaps • Leading Edge Devices • Trim Tabs • Autopilot **ELECTRICAL** • Volts V. Amps • AC V. DC • Battery • Alternator • Generator **HYDRAULIC** • Brakes • Landing Gear				

Stage 1 | Lesson 5 - Aircraft Flight Control and Systems - Powerplant					
Total Training Time:	2.0 Hours	**Event Type:**	Oral	**Event Location:**	Classroom
Evaluation Strategy:	Mid-Term Exam				
References:	FAA 8083-25B (PHAK) {Chapters 6 and 7}				
Lesson Objectives:	• Develop a knowledge and understanding of an aircraft's powerplant. • Gain knowledge, understanding and operational skill of most aircraft systems.				
Lesson Completion Standards:	•Student demonstrates satisfactory knowledge of primary and secondary flight controls, and most aircraft systems by answering questions and actively participating in classroom discussions.				
Lesson Content:	**POWERPLANT** • Types of Engine Design • 4 cycle system • Ignition system • Induction System • Carburetor V. Fuel Injection • Oil System • Engine Cooling • Exhaust System				

Stage 1 | Lesson 6 - Aircraft Flight Control and Systems - Fuel and Engine Controls					
Total Training Time:	2.0 Hours	**Event Type:**	Oral	**Event Location:**	Classroom
Evaluation Strategy:	Mid-Term Exam				
References:	FAA 8083-25B (PHAK) {Chapters 6 and 7}				
Lesson Objectives:	• Develop a knowledge and understanding of fuel systems and engine controls. • Gain knowledge, understanding and operational skill of most aircraft systems.				
Lesson Completion Standards:	•Student demonstrates satisfactory knowledge of primary and secondary flight controls, and most aircraft systems by answering questions and actively participating in classroom discussions.				
Lesson Content:	**FUEL** • Fuel Tanks • Fuel Pumps **OIL** • Oil Pump • Circulation and Cooling **ENGINE CONTORLS** • Throttle • Propeller • Mixture **LARGER AIRCRAFT** • Oxygen • Icing • Pressurization				

Stage 1 | Lesson 7 - Aircraft Flight Instruments - Pitot-Static					
Total Training Time:	2.0 Hours	**Event Type:**	Oral	**Event Location:**	Classroom
Evaluation Strategy:	Mid-Term Exam				
References:	FAA 8083-25B (PHAK) {Chapters 7}				
Lesson Objectives:	• Develop an understanding of how the flight instruments work on an aircraft.				
Lesson Completion Standards:	• Student demonstrates satisfactory knowledge of aircraft flight instruments by answering questions and actively participating in classroom discussions.				
Lesson Content:	**PITOT STATIC SYSTEM** • Construction • Airspeed Indicator • Altimeter • Vertical Speed Indicator • Blockages				

Stage 1 | Lesson 8 - Aircraft Flight Instruments - Gyroscopic, Compass, and Modern Avionics					
Total Training Time:	2.0 Hours	**Event Type:**	Oral	**Event Location:**	Classroom
Evaluation Strategy:	Mid-Term Exam				
References:	FAA 8083-25B (PHAK) {Chapters 7}				
Lesson Objectives:	• Develop an understanding of how the flight instruments work on an aircraft. • Develop an understanding of how modern cockpits display information digitally.				
Lesson Completion Standards:	• Student demonstrates satisfactory knowledge of aircraft flight instruments by answering questions and actively participating in classroom discussions.				
Lesson Content:	**GYROSCOPIC SYSTEM** • Construction • Operating Principles • Attitude Indicator • Heading Indicator • Turn Coordinator **COMPASS** • Operation • Magnetic Variation • Magnetic Deviation • Magnetic Dip Errors **ELECTRONIC FLIGHT INSTRUMENTS** • Attitude and Heading Reference System (AHRS) • Air Data Computer (ADC) • Combined AHRS/ADC (ADHARS) • Magnetometer • Angle of Attack Indicators				

Stage 1 | Lesson 9 - Aircraft Documents and Maintenance (Quiz)					
Total Training Time:	2.0 Hours	**Event Type:**	Oral	**Event Location:**	Classroom
Evaluation Strategy:	Mid-Term Exam				
References:	FAA 8083-25B (PHAK) {Chapters 9}				
Lesson Objectives:	• Develop an understanding of how to navigate standardized aircraft documents. • Develop knowledge of required maintenance inspection on an airplane. • Develop knowledge and understanding of how to handle inoperative equipment.				
Lesson Completion Standards:	• Student demonstrates satisfactory knowledge of aircraft documents and maintenance by answering questions and actively participating in classroom discussions. • Scores a minimum of 70% on a written quiz covering lessons 01-09.				
Lesson Content:	**AIRCRAFT DOCUMENTS** • Pilots Operating Handbook (POH/PIM) • Approved Flight Manual (AFM) • Registration • Airworthiness • Required Supplements **AIRCRAFT MAINTENANCE INSPECTIONS** • Annual Inspection • ELT Check • 100-Hour Inspection • Transponder Inspection • Pitot-Static Inspection • VOR Check • Airworthiness Directives • Preventative Maintenance • Responsibility of Maintenance **REQUIRED EQUIPMENT** • Day VFR (ATOMATOFLAMES) • Night VFR (FLAPS) **INOPERATIVE EQUIPMENT** • Minimum Equipment List • Kinds of Operations Equipment List • Airworthiness Directives • Type Certificate Data Sheet • FAR 91.205 • Special Flight Permit • Decision Making **QUIZ** • 25 Multiple-Choice Questions				

Stage 1 | Lesson 10 - Weight and Balance					
Total Training Time:	2.0 Hours	**Event Type:**	Oral	**Event Location:**	Classroom
Evaluation Strategy:	Mid-Term Exam				
References:	FAA 8083-25B (PHAK) {Chapters 10}				
Lesson Objectives:	• Develop a knowledge of aircraft weight and balance terms and principles. • Develop an understanding of how to correct weight and balance issues. • Skill to correctly determine through calculation if an airplane is loaded within limits.				
Lesson Completion Standards:	•Student demonstrates satisfactory knowledge of weight and balance by answering questions and actively participating in classroom discussions. •Correctly calculates a weight and balance problem.				
Lesson Content:	**TERMS** • Center of Gravity (Arm) • Moment • Reference Datum • Stability • Basic Empty Weight • Maximum Weight • Useful Load V. Payload **EFFECT OF WEIGHT AND BALANCE ON PERFORMANCE** • Center of Gravity Envelope • Effects of adding or removing weight, and moving CG **WAYS CONTROL WEIGHT AND BALANCE** • W/B Calculation • Computational Method • Graph Method • Table Method				

Stage 1 | Lesson 11 - Aircraft Performance Charts					
Total Training Time:	2.0 Hours	**Event Type:**	Oral	**Event Location:**	Classroom
Evaluation Strategy:	Mid-Term Exam				
References:	FAA 8083-25B (PHAK) {Chapter 11}; Training Aircraft POH/PIM/AFM				
Lesson Objectives:	• Develop a knowledge of aircraft performance. • Develop an understanding of aircraft performance and factors limiting outcomes. • Skill to correctly determine expected aircraft performance.				
Lesson Completion Standards:	•Student demonstrates satisfactory knowledge of aircraft performance by answering questions and actively participating in classroom discussions. •Correctly calculates multiple performance problems.				
Lesson Content:	**ATMOSPHERIC EFFECTS** • Pressure and Density • International Standard Atmosphere (ISA) • Pressure Altitude • Density Altitude • Angle of Climb V. Rate of Climb • Range and Endurance • Power Required Curve **TAKEOFFS AND LANDING PERFORMANCE** • Runway condition factors • Hydroplaning • Crosswind Calculation • Performance speeds • Calculation **EN-ROUTE PERFORMANCE** • Rate of Climb • Time, Distance, and Fuel to Climb • Cruise Performance • Time, Distance, and Fuel to Descent **CONSIDERATIONS** • Airframe Limitation • Weight and Balance • Pilot Technique				

Stage 1 | Lesson 12 - Airport Operations - Data, Signs, Markings, and Lighting					
Total Training Time:	2.0 Hours	**Event Type:**	Oral	**Event Location:**	Classroom
Evaluation Strategy:	Mid-Term Exam				
References:	FAA 8083-25B (PHAK) {Chapter 14}; FAA 8083-3C (AFH) {Chapter 2 and 8}				
Lesson Objectives:	• Develop a knowledge of airport data, signs, lighting, and markings.				
Lesson Completion Standards:	• Student demonstrates satisfactory knowledge of airport operations by answering questions and actively participating in classroom discussions.				
Lesson Content:	**TYPES OF AIRPORTS** • Towered • Non-Towered • Civil • Military/Federal • Private **SOURCE OF AIRPORT DATA** • Aeronautical Charts • Chart Supplement • Notice to Airmen (NOTAM's) • Automated Terminal Information Service (ATIS) • Automated Weather Observing System (AWOS) **AIRPORT SIGNS AND MARKINGS** • Runway • Taxiway • Ramp or Apron **AIRPORT LIGHTING** • Beacon • Runway • Taxiway • Obstruction • Approach Lighting Systems • Glideslope indicators				

Stage 1 | Lesson 13 - Airport Operations - Traffic Pattern and ATC					
Total Training Time:	2.0 Hours	**Event Type:**	Oral	**Event Location:**	Classroom
Evaluation Strategy:	Mid-Term Exam				
References:	FAA 8083-25B (PHAK) {Chapter 14}; FAA 8083-3C (AFH) {Chapter 2 and 8}				
Lesson Objectives:	• Develop knowledge and a working understanding of airport traffic patterns. • Develop understanding of basic radio communications. • Understand the hazards of wake turbulence and runway incursions.				
Lesson Completion Standards:	• Student demonstrates satisfactory knowledge of airport operations by answering questions and actively participating in classroom discussions. .				
Lesson Content:	**TRAFFIC PATTERN** • Wind Indicators • Standard • Non-Standard • Entry and Exit Procedures • Nosie Abatement **RADIO COMMUNICATIONS** • Towered and Non-Towered • Proper Phraseology • Lost Communications • ATC Light Gun Signals • ATC SERVICES • Primary and Secondary Radar • ADS-B • Visual **COLLISION AVOIDANCE** • Wake Turbulence • Runway Incursions • Land and Hold Short (LASHO) • Line-Up and Wait • EMAS				

Stage 1 | Lesson 14 - Federal Aviation Regulations (FARs) / AIM					
Total Training Time:	2.0 Hours	**Event Type:**	Oral	**Event Location:**	Classroom
Evaluation Strategy:	Mid-Term Exam				
References:	FAR/AIM				
Lesson Objectives:	• Develop knowledge and a working understanding of airport traffic patterns. • Develop understanding of basic radio communications. • Understand the hazards of wake turbulence and runway incursions.				
Lesson Completion Standards:	•Student demonstrates satisfactory knowledge of FARs/AIM by answering questions and actively participating in classroom discussions.				
Lesson Content:	**REGULATIONS BASICS** • Code of Federal Regulations (CFR) Title 14 • Federal Aviation Regulations • Aeronautical Information Manual • Advisory Circulars **FAR PART 1** • Important Definitions and Abbreviations **FAR PART 43** • Maintenance **FAR PART 61** • Requirements for Certifications or Ratings • Duration of Pilot Certificates • Medical Certificates Classes, Requirements, and Duration • Basic Med • Knowledge Exams and Practical Tests • Pilot Logbooks • Recency of Experience Requirements **FAR PART 91** • General Operating Rules • Preflight Actions • Alcohol and Drugs • Right of Way Rules • Minimum Safe Altitudes • Aircraft Speeds **NTSB PART 830** • Notification and Reporting Requirements				

Stage 1 | Lesson 15 – Mid-Term Exam					
Total Training Time:	2.0 Hours	**Event Type:**	Oral	**Event Location:**	Classroom
Evaluation Strategy:	Final Exam				
References:					
Lesson Objectives:	• Review Lesson 01-14. • Take the Mid-Term Exam.				
Lesson Completion Standards:	• Student demonstrates satisfactory knowledge of Stage I by scoring a minimum of 70% on the mid-term exam. •Review Deficiencies with Students.				
Lesson Content:	**REVIEW** • Introduction Into Aviation • Aerodynamics of Flight • Aircraft Flight Control and Systems - Flight Controls, Electrical, and Hydraulic • Aircraft Flight Control and Systems - Powerplant • Aircraft Flight Control and Systems - Fuel and Engine Controls • Aircraft Flight Instruments • Aircraft Documents and Maintenance (Quiz) • Weight and Balance • Aircraft Performance Charts • Airport Operations - Data, Signs, Markings, and Lighting • Airport Operations - Traffic Pattern and ATC Communication • Federal Aviation Regulations (FARs) / AIM **EXAM** • 1.5 Hours; 60 questions.				

Stage 2 | Advancing Airmanship	
Total Training Time	30.0 Hours
Evaluation Strategy:	Final Exam
Stage Objectives:	• Teach the student to the highest level of learning possible. • Develop knowledge, understanding, and skill in weather theory, weather products, sectional chart and other publications, forms of navigation, cross-country flight planning, night flying, ADM, and aeromedical factors.
Stage Completion Standards:	• Student meets the aeronautical knowledge standards of FAR 141 Appendix B or 61.105. • Complete the Final Exam with a minimum passing score of 70%. • Review all deficiencies with instructor. • Student Receives End-Of-Course Graduation Certificate
Stage Content:	1. Weather Theory - Structure and Global Wind Patterns 2. Weather Theory - Stability and Saturation 3. Weather Theory - Air Masses and Hazards 4. Weather Products 5. National Airspace System 6. Sectional Charts and Associated Publications 7. Electronic (VOR) Navigation 8. Electronic (GPS) and Visual Navigation 9. Cross-Country Flight Planning (Quiz) 10. Night Flying 11. Aeronautical Decision Making (ADM) 12. Aeromedical and Human Factors 13. FAA Knowledge Exam Prep 14. FAA Knowledge Exam Prep 15. Final Exam

Stage 2 | Lesson 16 – Weather Theory - Structure and Global Wind Patterns					
Total Training Time:	2.0 Hours	**Event Type:**	Oral	**Event Location:**	Classroom
Evaluation Strategy:	Final Exam				
References:	FAA 8083-25B (PHAK) {Chapter 12}; FAA AIM; FAA 8082-28 (AWH) {Chapter 4, 8, 9, 10, 16, 17}				
Lesson Objectives:	• Develop knowledge of aviation weather theory. • Develop an understanding of how to handle weather hazards and make appropriate decisions.				
Lesson Completion Standards:	•Student demonstrates satisfactory knowledge of weather theory by answering questions and actively participating in classroom discussions.				
Lesson Content:	**ATMOSPHERIC STRUCTURE** • Composition • Layers • Circulation • Coriolis Force • Pressure (High V. Low) • Temperature, Pressure, Winds **WIND PATTERNS** • Global • Local				

Stage 2| Lesson 17 – Weather Theory - Stability and Saturation					
Total Training Time:	2.0 Hours	**Event Type:**	Oral	**Event Location:**	Classroom
Evaluation Strategy:	Final Exam				
References:	FAA 8083-25B (PHAK) {Chapter 12}; FAA AIM; FAA 8082-28 (AWH) {Chapter 5, 6, 7, 12, 13, 14}				
Lesson Objectives:	• Develop knowledge of aviation weather theory. • Develop an understanding of how to handle weather hazards and make appropriate decisions.				
Lesson Completion Standards:	•Student demonstrates satisfactory knowledge of weather theory by answering questions and actively participating in classroom discussions.				
Lesson Content:	**ATMOSPHERIC STABILITY** • Moisture and Temperature • Humidity • Inversions **BRINGING AIR TO SATURATION** • Clouds • Fog				

Stage 2 | Lesson 18 – Weather Theory - Air Masses and Hazards					
Total Training Time:	2.0 Hours	**Event Type:**	Oral	**Event Location:**	Classroom
Evaluation Strategy:	Final Exam				
References:	FAA 8083-25B (PHAK) {Chapter 12}; FAA AIM; FAA 8082-28 (AWH) {Chapter 11, 15, 18, 19, 20, 21, 22}				
Lesson Objectives:	• Develop knowledge of aviation weather theory. • Develop an understanding of how to handle weather hazards and make appropriate decisions.				
Lesson Completion Standards:	•Student demonstrates satisfactory knowledge of weather theory by answering questions and actively participating in classroom discussions.				
Lesson Content:	**AIR MASSES** • Cold and Warm Fronts • Occluded and Stationary Fronts **WEATHER HAZARDS** • Thunderstorms • Squall Lines • Microbursts • Low Level Wind Shear (LLWS) • Turbulence • Fog • Icing				

Stage 2 | Lesson 19 – Weather Products					
Total Training Time:	2.0 Hours	**Event Type:**	Oral	**Event Location:**	Classroom
Evaluation Strategy:	Final Exam				
References:	FAA 8083-25B (PHAK) {Chapter 12}; FAA AIM; FAA 8082-28 (AWH) {2, 3, 24, 25, 26, 27, 28}				
Lesson Objectives:	•Develop knowledge to read available weather products. • Develop an understanding of how to find, read, interpret, and make safe decision based on various weather products.				
Lesson Completion Standards:	• Student demonstrates satisfactory knowledge of weather products by answering questions and actively participating in classroom discussions.				
Lesson Content:	**WEATHER DATA SOURCES** • Flight Service Stations (FSS) • Transcribed Weather Broadcast (TWEB) (Alaska Only) • Standard Weather Briefing • Outlook Weather Briefing • Abbreviated Weather Briefing • AWC • Foreflight/Garmin Pilot **OBSERVATIONS** • METAR • PIREP • ARTCC Upper Air Observations • Radar and Satellite **FORECASTS** • Terminal Area Forecast • Graphical Forecast for Aviation (GFA) • Model Output Statistics (MOS) **IN-FLIGHT WEATHER ADVISORIES** • Automated Terminal Information Service (ATIS) • Automated Weather Observation System (AWOS) • Automated Surface Observation System (ASOS) • AIRMET • SIGMET • Convective SIGMET • Convective Outlook • Winds Aloft • Center Weather Advisory **WEATHER CHARTS** • Surface Analysis Chart • Weather Depiction Chart • Significant Weather Prognostic Charts **ADDITIONAL WEATHER RESOURCES** • ATC Weather Radar and Limitations • NEXRAD/In-Cockpit radar limitations • PFD/MFD Weather Display • Flight Information Service – Broadcast (FIS-B)				

Stage 2 | Lesson 20 – National Airspace System					
Total Training Time:	2.0 Hours	**Event Type:**	Oral	**Event Location:**	Classroom
Evaluation Strategy:	Final Exam				
References:	FAA 8083-25B (PHAK) {Chapter 15}; FAA AIM				
Lesson Objectives:	• Develop knowledge of the national airspace system. • Develop an understanding of how to safely operate aircraft in each airspace considering ATC, equipment/surveillance, and weather minimums.				
Lesson Completion Standards:	•Student demonstrates satisfactory knowledge of the NAS by answering questions and actively participating in classroom discussions.				
Lesson Content:	**CONTROLLED AIRSPACE** • Class A • Class B • Class C • Class D • Class E • Uncontrolled Airspaces • Class G **SPECIAL USE AIRSPACE** • Prohibited Airspace • Restricted Airspace • Warning Airspace • Alert Areas • Controlled Firing Areas • Military Operational Areas (MOA) • Local Airport Advisory (LAA) • Military Training Routes (MTR) • Parachute Jumping Areas • Terminal Radar Service Areas (TRSA) • National Security Areas • Air Defense Identification Zone (ADIZ • Temporary Flight Restrictions (TFR) • Special Flight Rules Area (SFRA) • DC SFRA (Special Flight Rules Area) and DC FRZ (Flight Restriction Zone) • Intercept Procedures **WEATHER MINIMUMS** • Class B • Class C • Class D • Class E<10k • Class E >10k • Class G Day • Class G Night **ATC, SURVEILLANCE, AND EQUIPMENT REQUIREMENTS** • Class A, B, C, D, E, G				

Stage 2 | Lesson 21 – Sectional Charts and Associated Publications					
Total Training Time:	2.0 Hours	**Event Type:**	Oral	**Event Location:**	Classroom
Evaluation Strategy:	Final Exam				
References:	VFR Sectional Chart and VFR Terminal Area Chart; FAA Aeronautical Chart User Guide				
Lesson Objectives:	• Develop knowledge of the publications available to pilots regarding navigation and airport operations. • Develop an understanding of how to read and utilize charts and other publications.				
Lesson Completion Standards:	•Student demonstrates satisfactory knowledge of sectional chart and associated publications by answering questions and actively participating in classroom discussions.				
Lesson Content:	**VFR SECTIONAL CHARTS** • Basics • Topographical Information on Charts • Color • Latitude and Longitude • Elevation Symbols • Maximum Elevation Symbol (MEF) • Obstacles • Roads • Railroads • Wires • Shorelines, Rivers, and Streams • Populated Area • Airways • VFR Report points • Airborne Vehicles • Parks, Wildlife, Forests, and Wilderness • Airspace • Airports **TERMINAL AREA CHART** • Basics • Differences form Sectional Chart **CHART SUPPLEMENT** • Basics • Airport Service • Runway information • Airport Remarks • Frequencies • Radar Services • Traffic Pattern • Nearby Navaids				

Stage 2 | Lesson 22 – Electronic (VOR) Navigation					
Total Training Time:	2.0 Hours	**Event Type:**	Oral	**Event Location:**	Classroom
Evaluation Strategy:	Final Exam				
References:	FAA 8083-25B (PHAK) {Chapter 16}; FAA AIM				
Lesson Objectives:	• Develop knowledge and operational understanding of VOR's.				
Lesson Completion Standards:	•Student demonstrates satisfactory knowledge of sectional chart and associated publications by answering questions and actively participating in classroom discussions.				
Lesson Content:	**NDB/ADF** • Basic Operating Principles • Historic use **VHF OMNI RANGE (VOR)** • Basic Operating Principles • Classes and Service Volumes • Radials V. Course • Tuning and ID'ing • OBS/HIS use of a VOR • Flying using a VOR				

Stage 2 | Lesson 23 – Electronic (GPS) and Visual Navigation					
Total Training Time:	2.0 Hours	**Event Type:**	Oral	**Event Location:**	Classroom
Evaluation Strategy:	Final Exam				
References:	FAA 8083-25B (PHAK) {Chapter 16}; FAA AIM				
Lesson Objectives:	• Develop knowledge and operational understanding of GPS. • Develop an understanding of pilotage and dead reckoning.				
Lesson Completion Standards:	•Student demonstrates satisfactory knowledge of electronic and visual navigation by answering questions and actively participating in classroom discussions. •Students can describe how to recover from being lost while navigating through classroom discussion.				
Lesson Content:	**GLOBAL POSITIONING SYSTEM (GPS)** • Basic Operating Principles • Garmin GNS430 use • WAAS **PILOTAGE** • Basics • Selecting Suitable Visual References • VFR Checkpoints **DEAD RECKONING** • Basics • Use of a flight Computer to Calculate Times • Rules of Thumb **LOST PROCEDURES** • The 6 C's • ATC as a Resource • VOR's • NDB/ADF • Basic Operating Principles • Historic use • VHF Omni range (VOR) • Basic Operating Principles				

Stage 2 | Lesson 24 - Cross-Country Flight Planning (Quiz)					
Total Training Time:	2.0 Hours	**Event Type:**	Oral	**Event Location:**	Classroom
Evaluation Strategy:	Final Exam				
References:	Cross-Country Planning Equipment; Training Aircraft POH/PIM/AFM				
Lesson Objectives:	• Develop knowledge and operational understanding of how to plan a cross-country flight.				
Lesson Completion Standards:	• Student demonstrates satisfactory knowledge of cross-country flight planning by answering questions and actively participating in classroom discussions. • Scores a minimum of 70% on quiz cover lessons 15-24.				
Lesson Content:	**PLANNING EQUIPMENT** • Current VFR Sectional • Current TAC Chart • Current Chart Supplement • E6B (Digital or Physical) • Plotter • Pencil • Navigation log • POH/PIM/AFH • Internet Access **PLANNING PROCESS** • Plotting a Course • True Course V. Magnetic Course • Top of Climb Calculation • Top of Descent Calculation • Selecting Suitable VFR Checkpoint • Cruise Performance Charts • True Airspeed • Wind Correction • Time, Distance, Fuel, and Speed Calculations **EXAMPLE CROSS-COUNTRY** • KFDK-KLUA **QUIZ** • 25 Multiple-Choice Questions				

Stage 2 | Lesson 25 - Night Flying					
Total Training Time:	2.0 Hours	**Event Type:**	Oral	**Event Location:**	Classroom
Evaluation Strategy:	Final Exam				
References:	FAA 8083-3C (AFH) {Chapter 11}; FAA AIM				
Lesson Objectives:	• Develop knowledge of night flying • Develop an understanding of the night illusions and pitfalls.				
Lesson Completion Standards:	•Student demonstrates satisfactory knowledge of night flying by answering questions and actively participating in classroom discussions.				
Lesson Content:	**BASICS OF NIGHT OPERATIONS** • Night Definitions • Night Currencies • Night Equipment • Pilot Equipment • Vision **NIGHT ILLUSION** • False Horizons • Autokinesis • Featureless Terrain Illusion • Ground Lighting Illusions **NIGHT LIGHTING** • Airport Beacons • Runway, Taxiway, Ramp, and Obstruction Lighting • Airplane Lighting • PAPI and VASI **NIGHT ADM** • Emergencies • Approach and Landing • Navigation				

Stage 2 | Lesson 26 - Aeronautical Decision Making (ADM)					
Total Training Time:	2.0 Hours	**Event Type:**	Oral	**Event Location:**	Classroom
Evaluation Strategy:	Final Exam				
References:	FAA 8083-25B (PHAK) {Chapter 2}				
Lesson Objectives:	• Develop knowledge of what ADM is and how to effectively make safe decisions. • Develop an understanding of how to use the PAVE decision making model.				
Lesson Completion Standards:	•Student demonstrates satisfactory knowledge of ADM by answering questions and actively participating in classroom discussions.				
Lesson Content:	**INTRODUCTION INTO DECISION-MAKING** • History • SRM and CRM • Decision-Making Models • RISK MANAGEMENT • Models • Hazard V. Risk • Hazardous Attitudes (Include Assessment) • Assessing and Mitigating Risk **PAVE MODEL** • Pilot, Aircraft, environment, and External Pressures **THE 5 P MODEL** • Plane, Pilot, Passenger, Plan, Programming **3 P MODEL** • Perceive, Process, and Perform **CARE CHECKLIST** • Consequence, Alternatives, Reality, and External Pressures **TEAM RISK MITIGATION** • Transfer • Eliminate • Accept • Mitigate • HUMAN FACTORS • Innate Human Behavior • Stress Management **DECIDE PROCESS** • Detect • Estimate • Choose • Identify • Do • Evaluate **SITUATIONAL AWARENESS** • Obstacles to maintaining SA • Workload Management • Automation management				

Stage 2 | Lesson 27 - Aeromedical and Human Factors					
Total Training Time:	2.0 Hours	**Event Type:**	Oral	**Event Location:**	Classroom
Evaluation Strategy:	Final Exam				
References:	FAA 8083-25B (PHAK) {Chapter 17}				
Lesson Objectives:	• Develop knowledge of the effects aeromedical factors have on a pilot and their passengers. • Develop an understanding of how to recognize, solve, and prevent different aeromedical factors.				
Lesson Completion Standards:	•Student demonstrates satisfactory knowledge of aeromedical factors and human factors by answering questions and actively participating in classroom discussions.				
Lesson Content:	**PHYSIOLOGICAL FACTORS** • Four Types of Hypoxia • Altitude-Induced Decompression Sickness • Hyperventilation • Middle Ear and Sinus Problems • Spatial Disorientation • Vestibular Illusions • Visual Illusions • Optical Illusions • Night Illusions • Motion Sickness • CO Poisoning **HUMAN FACTORS** • Stress • Fatigue • Chronic V. Acute • Dehydration and Heatstroke • Alcohol • Drugs • Visions Effect on Perception				

Stage 2 | Lesson 28 - FAA Knowledge Exam Prep					
Total Training Time:	2.0 Hours	**Event Type:**	Oral	**Event Location:**	Classroom
Evaluation Strategy:	Final Exam				
References:					
Lesson Objectives:	• Develop understanding on FAA knowledge exam testing process. • Work through multiple practice questions and exam.				
Lesson Completion Standards:	•Student demonstrates satisfactory knowledge of FAA Knowledge Exam Prep by answering questions and actively participating in classroom discussions.				
Lesson Content:	**FAA QUESTIONS** • Private Pilot Airplane Practice Questions • Private Pilot Airplane Knowledge Practice Test				

Stage 2 | Lesson 29 - FAA Knowledge Exam Prep					
Total Training Time:	2.0 Hours	**Event Type:**	Oral	**Event Location:**	Classroom
Evaluation Strategy:	Final Exam				
References:					
Lesson Objectives:	• Develop understanding on FAA knowledge exam testing process. • Work through multiple practice questions and exam.				
Lesson Completion Standards:	•Student demonstrates satisfactory knowledge of FAA Knowledge Exam Prep by answering questions and actively participating in classroom discussions.				
Lesson Content:	**FAA QUESTIONS** • Private Pilot Airplane Practice Questions • Private Pilot Airplane Knowledge Practice Test				

Stage 2 | Lesson 30 – Final Exam					
Total Training Time:	2.0 Hours	**Event Type:**	Oral	**Event Location:**	Classroom
Evaluation Strategy:	Final Exam				
References:					
Lesson Objectives:	• Review Lesson 16-29. • Take the Final Exam.				
Lesson Completion Standards:	•Student demonstrates satisfactory knowledge of Stage II by scoring a minimum of 70% on the Final exam. •Review Deficiencies with Students.				
Lesson Content:	**REVIEW** • Weather Theory - Structure and Global Wind Patterns • Weather Theory - Stability and Saturation • Weather Theory - Air Masses and Hazards • Weather Products • National Airspace System • Sectional Charts and Associated Publication • Electronic (VOR) Navigation • Electronic (GPS) and Visual Navigation • Cross-Country Flight Planning • Night Flying • Aeronautical Decision-Making • Aeromedical and Human Factors • FAA Knowledge Exam Prep • FAA Knowledge Exam Prep **EXAM** • **1**.5 Hours; 60 questions				