

Stage I Lessons 1 - 4: 12 Hours

Stage II Lessons 5 - 8: 12 Hours

Stage III Lessons 9 -13: 12 Hours

PURPOSE: This syllabus provides flight instructors with a detailed summary of specific actions to be taken during periods of ground instruction. It's purpose is to maintain a high degree of professional integrity, by ensuring that specific areas of knowledge on the FAA Written Test are learned.

Objectives: You will obtain the necessary aeronautical knowledge and meet the prerequisites specified in Part 61 of FAR's for the private pilot written test.

Completion Standards: You will demonstrate, through oral, written tests, and school records that you meet the prerequisites specified in Part 61 of the FAR's, and have the knowledge necessary to pass the written test.

Recommended texts for use with this ground training syllabus are:

- a. The Pilot's Handbook Of Aeronautical Knowledge.
- b. AC 61-21A Flight Training Handbook
- c. FAA-8080-2H Private Pilot Question Book
- d. AC 00-6A Aviation Weather, AC 00-45 Aviation Weather Services.
- e. VFR Exam-O-Grams
- f. Airman's Information Manual
- g. Federal Aviation Regulations Parts 1, 61, & 91

INSTRUCTOR: Initial each step when completed. The contents of this checklist parallels the subject areas in the Private Pilot Question Book.

Page numbers appearing on these pages refer to the printed pages before they were cut and bound. Numbers appearing on the cut pages contain letters a and b for each cut page. This is because the uncut pages were printed two columns per page.

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PRIVATE PILOT TRAINING REQUIREMENTS

(Excerpt from FAR Part 61)

Minimum 20 hrs. instruction, including at least 3 hrs. Cross-Country, 3 hours night, and 3 hours preparation for the flight test.

Minimum 20 hrs. solo flight, including at least 10 hrs. Cross-Country (at least 50 nautical miles) with one flight of at least 300 nautical miles, with a landing at least 100 NM from the point of departure.

At least three solo takeoffs & landings to a full stop at an airport with an operating control tower.

To obtain a Private Pilot License, you must be at least 17 years old, be able to read, speak and understand English, hold at least a current Class III Medical Certificate, pass an FAA Written and Flight Test, and meet the minimum requirements of Flight Time and Instruction. The requirements for Aeronautical Knowledge are to have completed either a course of Instruction or Home Study in at least the following areas: Federal regulations & requirements of the National Transportation Safety Board, and use of the "Airman's Information Manual" and "FAA Advisory Circulars."

Visual Navigation using Pilotage, Dead Reckoning & Radio Navigation; Safe & Efficient Operation of Airplanes, including High Density Airport Operations, Collision Avoidance Precautions and Communications.

Basic Aerodynamics and The Principles of Flight.

The procurement and use of Weather Reports and Forecasts, and the Recognition of Critical Weather Situations from ground & in flight.

Requirements for Flight Proficiency are a Logbook Record certifying you have received instruction in and are competent in the following:

Preflight operations, including weight & balance determination, line inspection and airplane servicing;

Airport & Traffic Pattern Operations, including operations at controlled airports, radio communications and collision avoidance.

Flight Maneuvering by reference to ground objects; Flight at critically slow airspeeds, & the recovery from imminent and full stalls entered from straight flight and from turns.

Normal, crosswind and maximum performance takeoffs & landings, night takeoffs & landings, including night visual navigation, and at least 10 night takeoffs and landings.

Control & maneuvering solely by reference to instruments; including descents & climbs using radio aids or radar directives; Cross-Country flying, including a 2 hour flight using Pilotage, dead reckoning & radio navigation.

Emergency operations with simulated aircraft & equipment malfunctions.

STAGE ONE--LESSONS 1, 2, 3, & 4: 12 HOURS.

STAGE ONE OBJECTIVE: To develop knowledge of the important aeronautical terms used in relation to: The Atmosphere, To Aircraft Engines, To Flight Instruments, Aerodynamics, and Aeronautical Chart Symbols; Radio Communications, Airspace Restrictions, Federal Airspace Regulations, and Radio Navigation.

STAGE ONE COMPLETION STANDARD: This stage will be successfully completed when the you pass the Stage I Written Exam with a grade of at least 75% Lesson #1. 2 Hours.

Objective: You will be introduced to the terms and principles encountered in the flying environment, and their effects on aircraft performance.

Contents:

- _____ (1) True Altitude
- _____ (2) Absolute Altitude
- _____ (3) Density Altitude
- _____ (4) Altimeter Setting
- _____ (5) Humidity
- _____ (7) Pressure Altitude
- _____ (6) Indicated Altitude
- _____ (7) Determining Density Altitude
- _____ (8) Determining Pressure Altitude

Completion Standards: You will have successfully completed this lesson when, by oral questioning, you display a working knowledge of the various terms and principles encountered in the flight environment, and on how they relate to the aircraft altitude indication systems and aircraft performance.

Lesson #2. 2 Hours.

Objective: During this lesson you will be instructed in airplane engine systems, & flight instruments.

Contents:

- _____ (1) Induction System Icing
- _____ (2) Ignition Systems
- _____ (3) Temperature
- _____ (4) Oil System
- _____ (5) Use Of Proper Fuel
- _____ (6) Fuel/Air Mixture
- _____ (7) Attitude Indicator
- _____ (8) Turn Coordinator
- _____ (9) Heading Indicator
- _____ (10) Magnetic Compass Errors
- _____ (11) Airspeed Indicator
- _____ (12) Pitot System
- _____ (13) Static System
- _____ (14) Altimeter Indications

Completion Standards: You will have successfully completed this lesson when, by oral questioning, a working knowledge of aircraft engine systems and flight instruments is displayed.

Lesson #3. 2 Hours.

Objective: During this lesson, you will be given instruction in the aerodynamic forces that act on an airplane, the terms used in aerodynamics, and on the safe operation of the airplane while on the ground.

Contents:

- _____ (1) Thrust, Lift, Weight And Drag
- _____ (2) Horizontal Component Of Lift
- _____ (3) Wing Flaps
- _____ (4) Angle Of Attack
- _____ (5) Load Factors
- _____ (6) P Factor
- _____ (7) Yaw
- _____ (8) Stability
- _____ (9) Slipstream
- _____ (10) Center Of Gravity
- _____ (11) Frost
- _____ (12) Torque Effects
- _____ (13) Stalls
- _____ (14) Spins
- _____ (15) Ground Effect
- _____ (16) Taxiing In A Wind

Completion Standards: This lesson will have successfully completed when you can discuss the aerodynamics that relate to operation of the airplane near the limits of it's envelope, and have a knowledge of how to position the flight controls in different surface wind situations.

Lesson #4. 2 Hours.

Objective: During this lesson, you will be given instruction in the relationship of time zones to geographical areas, on communications procedures, and on sectional aeronautical chart information.

Contents:

- _____ (1) Time Zones
- _____ (2) Traffic Advisories
- _____ (3) Common Traffic Advisory Freq. (CTAF)
- _____ (4) Transcribed Weather Broadcast (TWEB)
- _____ (5) Enroute Flight Advisory Service (EFAS)
- _____ (6) Unicom
- _____ (7) Control Tower Frequencies
- _____ (8) Approach Control Frequencies
- _____ (9) Automatic Terminal Information Service (ATIS)
- _____ (10) Flight Service Stations (FSS)
- _____ (11) Air Traffic Control (ATC)
- _____ (12) Determining Latitude And Longitude
- _____ (13) Military Operations Area (MOA)
- _____ (14) Uncontrolled Airspace

This lesson will have been successfully completed when, by oral questioning, you can show how to correctly work time zone conversions, and have knowledge of advisory and ATC frequencies, and depiction's on sectional charts, as they relate to Federal Regulations.

Lesson #5. 3 Hours.

OBJECTIVE: During this lesson, you will be given instruction on the Federal Aviation Regulations as they pertain to airspace and radio communications, on Pilotage, dead reckoning, sectional chart symbols, and on radio navigation.

STAGE I WRITTEN EXAM. 1 Hour.
Use FAA-8080-2H Private Pilot Question Book

Contents:

- _____ (1) Visibility and Cloud Clearance
- _____ (2) National Wildlife Areas
- _____ (3) Warning Areas
- _____ (4) Airport Radar Service Areas (ARSA)
- _____ (5) Military Flight Operations (IR, VR)
- _____ (6) Federal Airways
- _____ (7) Terminal Control Area (TCA)
- _____ (8) Terminal Radar Service Area (TRSA)
- _____ (9) Control Zone
- _____ (10) Aeronautical Chart
- _____ (11) Airport Facility Directory (AFD)
- _____ (12) Magnetic Course
- _____ (13) Estimated Time Enroute (ETE)
- _____ (14) Magnetic Heading
- _____ (15) Compass Heading
- _____ (16) Magnetic Course
- _____ (17) Omnidirectional Receiver Check
- _____ (18) VOR/VORTAC Radials
- _____ (19) VOR Navigation
- _____ (20) ADF Navigation
- _____ (21) Magnetic Bearing
- _____ (22) Relative Bearing
- _____ (23) Magnetic Heading

This lesson will have been successfully completed when by oral questioning, you can discuss Federal Regulations pertinent to airspace and radio communications, and have an understanding of chart symbols, Pilotage, dead reckoning and radio navigation.

STAGE TWO--Lessons 5, 6, 7 & 8. 12 Hours.

STAGE TWO OBJECTIVE: To develop your knowledge of Flight Planning, Weight and Balance, Engine Operation, Aircraft and Airport Marking and Lighting, Procedures and Regulations pertinent to the National Airspace System, Medical Factors, Accident Reporting, V speeds and Collision Avoidance Precautions.

STAGE TWO COMPLETION STANDARD: This stage will be successfully completed when you pass the stage two written exam with a grade of at least 75%

Lesson #5. 3 Hours.

Objective: During this lesson, you will be instructed in the planning of a flight, and in the loading, balancing and operation of airplanes.

Contents:

- _____ (1) Weather Briefing
- _____ (2) Headwind and Crosswind Components
- _____ (3) Wind Velocity
- _____ (4) Fuel Consumption
- _____ (5) Power Settings, TAS, Fuel
- _____ (6) Landing Distance Computation
- _____ (7) Takeoff Distance Computation
- _____ (8) Aircraft Weight & Balance Limits
- _____ (9) Weight Shift

Completion Standards: This lesson will have been successfully completed when through oral questioning, you can demonstrate a working knowledge and understanding of flight planning, and of the principles involved in the loading, balancing and operation of airplanes.

Lesson #6. 2 Hours.

Objective: During this lesson, you will be instructed in the operation of the aircraft engine, and on the lighting and markings of the aircraft, the airport and the runways.

Contents:

- _____ (1) Preflight
- _____ (2) Propeller Operation
- _____ (3) Engine Operation
- _____ (4) Wingtip Vortices
- _____ (5) Aircraft Lighting
- _____ (6) Night Operations
- _____ (7) Airport Traffic Patterns
- _____ (8) Airport Lighting
- _____ (9) Visual Approach Slope Indicator (VASI)
- _____ (10) Airport and Runway Marking

Completion Standards: This lesson will have been successfully completed when, through oral questioning, you can demonstrate a working knowledge of how the airplane engine operates, and about airport, aircraft and runway marking and lighting.

Lesson # 7. 3 Hours.

Objective: During this lesson, you will be instructed in the names and conditions pertinent to airspace areas, and procedures common to pilots operating in the National Airspace System.

Contents:

- _____ (1) Restricted Area
- _____ (2) Military Operations Area (MOA)
- _____ (3) Alert Area
- _____ (4) National Wildlife Refuge
- _____ (5) Terminal Radar Program
- _____ (6) Stage III Service
- _____ (7) Stage II Terminal Radar Advisory Service
- _____ (8) Terminal Radar Service Area (TRSA)
- _____ (9) Airport Radar Service Area (ARSA)
- _____ (10) Airport Traffic Area
- _____ (11) Airport Advisory Area
- _____ (12) Automatic Terminal Information Service (ATIS)
- _____ (13) Controlled Airport
- _____ (14) Ground Control
- _____ (15) Radar Advisories
- _____ (16) Radio Failure
- _____ (17) Emergency Locator Transmitter (ELT)
- _____ (18) Airport Facility Directory
- _____ (19) Collision Avoidance Precautions
- _____ (20) Flight Plan Form
- _____ (21) Transponder Operation
- _____ (22) VHF/DF
- _____ (23) Special VFR Clearances
- _____ (24) FAA Advisory Circulars

Completion Standards: This lesson will have been successfully completed, when, through oral questioning, you display basic knowledge of the names and conditions of various airspace areas, and procedures common to pilots operating in the National Airspace System.

Lesson #8. 3 Hours.

Objective: During this lesson, you will be instructed in the Medical Factors pertinent to pilots, reporting requirements of the NTSB, the terms and structures of the National Airspace System, V-speeds, and on collision avoidance precautions.

Contents:

- _____ (1) Hypoxia
- _____ (2) Hyperventilation
- _____ (3) Carbon Monoxide Poisoning
- _____ (4) Spatial Disorientation
- _____ (5) Night Vision Adaptation
- _____ (6) Scanning Techniques
- _____ (7) Haze
- _____ (8) NTSB Immediate Notification
- _____ (9) Accident Reporting
- _____ (10) Category And Class
- _____ (11) Best Rate Of Climb Speed (Vy)
- _____ (12) Nighttime, Definition of
- _____ (13) Best Angle Of Climb Speed (Vx)
- _____ (14) V Speeds
- _____ (15) Airport Radar Service Areas
- _____ (16) Federal Airways
- _____ (17) Control Zones

Completion Standards: This lesson will have been successfully completed when, through oral questioning, you display a working knowledge of Medical Factors, reporting requirements of the NTSB, on structures of the National Airspace System, V-speeds, and on collision avoidance precautions.

STAGE II WRITTEN EXAM 1 Hour.
Use FAA-8080-2H Private Pilot Question Book

STAGE THREE--Lessons 9, 10, 11, 12 & 13. 12 Hours.

STAGE THREE OBJECTIVE: To develop your knowledge of Federal Regulations pertaining to Visual Flight Rules, and to develop a working knowledge of Aviation Weather Analysis and Theory.

STAGE THREE COMPLETION STANDARD: This stage will be successfully completed when the student passes the stage three written exam with a score of at least 75%

Lesson #9. 2 Hours.

Objective: During this lesson, you will be instructed in the basic Federal Regulations as they pertain to Private Pilots.

Contents:

- _____ (1) Certificates And Documents
- _____ (2) Duration Of Medical Certificate
- _____ (3) Type Rating
- _____ (4) High Performance Airplane
- _____ (5) Recency Of Experience
- _____ (6) Privileges And Limitations
- _____ (7) Preflight Action
- _____ (8) Use Of Seat Belts
- _____ (9) Alcoholic Beverages
- _____ (10) Dropping Of Objects
- _____ (11) Parachute Requirements

Completion Standards: This lesson will have been successfully completed when, through oral questioning, you display a working knowledge of Federal Regulations specific to Private Pilots.

Lesson #10. 1 Hour.

Objective: During this lesson, you will be instructed in Federal Regulations pertinent to aeronautical information, and in procedures concerning the operation of aircraft the National Airspace System.

Contents:

- _____ (1) Fuel Requirement Night
- _____ (2) Fuel Requirement Day
- _____ (3) Transponder Requirement
- _____ (4) Certificates And Documents
- _____ (5) Operating Limitations
- _____ (6) Supplemental Oxygen
- _____ (7) Restricted Category Aircraft
- _____ (8) Experimental Certificate
- _____ (9) ELT Batteries
- _____ (10) ELT Tests
- _____ (11) Formation Flying
- _____ (12) Right-Of-Way Rules

Completion Standards: This lesson will have been successfully completed when, through oral questioning, you display a working knowledge of Federal Regulations, as they pertain to Private Pilots operating in the National Airspace System.

Lesson #11. 2 Hours.

Objective: During this lesson, you will be instructed in the regulations that pertain to pilots and their aircraft.

Contents:

- _____ (1) Speed Limits
- _____ (2) Acrobatic Flight
- _____ (3) Position Lights
- _____ (4) ATC Clearances
- _____ (5) Light Signals
- _____ (6) Minimum Altitudes
- _____ (7) Altimeter Setting Requirements
- _____ (8) Airport Traffic Area
- _____ (9) Two-Way Radio
- _____ (10) Traffic Patterns Un-controlled Airport
- _____ (11) VASI And Tower
- _____ (12) ATC Requirements
- _____ (13) Positive Control Area
- _____ (14) Flight Visibility & Cloud Clearance Requirements
- _____ (15) VFR Cruising Altitudes
- _____ (16) Airworthiness
- _____ (17) Alteration Or Repair
- _____ (18) Annual Inspection
- _____ (19) 100 Hour Inspections
- _____ (20) Transponder Tests And Inspections
- _____ (21) Airworthiness Directives
- _____ (22) Preventative Maintenance

Completion Standards: This lesson will have been successfully completed when the student, through oral questioning, you display a working knowledge of the Federal Regulations that pertain to pilots and their aircraft.

Lesson #12. 3 Hours.

Objective: During this lesson, you will be instructed in Weather Theory pertaining to VFR Flight.

Contents:

- _____ (1) Ceiling
- _____ (2) Temperature Inversion
- _____ (3) Weather Process
- _____ (4) Temperature And Pressure
- _____ (5) Dewpoint
- _____ (6) Addition Of Moisture
- _____ (7) Ice Pellets
- _____ (8) Stable Air
- _____ (9) Lifting Action And Unstable Air
- _____ (10) Base Of Clouds Determination
- _____ (11) Nimbus
- _____ (12) Lenticular Clouds
- _____ (13) Clouds Division Of
- _____ (14) Turbulence
- _____ (15) Unstable Air
- _____ (16) Fronts
- _____ (17) Wind Shear
- _____ (18) Structural Icing
- _____ (17) Frost
- _____ (18) Thunderstorms
- _____ (19) Fog

Standards: This lesson will have been completed when, through oral questioning, you demonstrate a working knowledge of Weather Theory and it's practical application to VFR flight in an airplane.

Lesson #13. 3 Hours.

Objective: During this lesson, you will be instructed in Weather Reports, Forecasts and other weather data pertinent to VFR flight.

STAGE III WRITTEN EXAM 1 Hour.
Use FAA-8080-2H Private Pilot Question Book

Contents:

- _____ (1) Area Forecasts
- _____ (2) Transcribed Weather
- _____ (3) Weather Briefing Formats
- _____ (4) SIGMET's & AIRMET's
- _____ (5) Radar Summary Chart
- _____ (6) Winds Aloft Forecasts
- _____ (7) SIG CLDS AND WX
- _____ (8) Radar Reports
- _____ (9) Terminal Area Forecast
- _____ (10) Area Forecasts
- _____ (11) Winds Aloft Forecast
- _____ (12) Surface Weather Reports
- _____ (13) METAR
- _____ (14) Weather Depiction Chart
- _____ (15) Significant Weather Prog Chart
- _____ (16) Pilot Weather Report (PIREP)
- _____ (17) Radar Summary Chart

Completion Standards: This lesson will have been successfully completed when, through oral questioning, you display a working knowledge of Weather Reports, Forecasts and other Weather Information Pertaining to Aircraft Flight in VFR weather conditions.