

Private Pilot Guide – First Lesson to Solo

(This is a general overview and guide and not a comprehensive syllabus. Feel free to search YouTube and other internet sources for some good videos and other ways of explaining these concepts.)

About This Phase: The beginning! You've always wanted to fly, and now it's happening! It feels like so much information, but your instructor is there to guide you. In this phase you'll learn to make basic turns, all the way to more advanced maneuvers until you solo...fly the plane by yourself!

Abbreviations key used in study guide:

- AFH - Airplane Flying Handbook

- ACS - Airmen Certification Standards

- PHAK - Pilots Handbook of Aeronautical Knowledge

- POH - Pilots Operating Handbook

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First Lesson:

Homework beforehand:

- Private Pilot Certificate: Pilot's Handbook of Aeronautical Knowledge (PHAK) pgs 1-17 thru 1-24
- PHAK Chapter 3 - Aircraft controls
- PHAK 7-27 - Types of Fuel
- Bring FAR/AIM and page tabs to lesson
- POH "Section 1 - Operating Checklist" (Section 4: pg. 47-51)
- Required Aircraft Docs: PHAK 9-6 TO 9-8 "Aircraft Documents"
- IMSAFE: PHAK 2-8 "Mitigating Risk"
- AFH Chapter 2 – Ground Operations

Ground:

- General plan on how lessons will go
- Preflight
- AROW document locations
- Hangar orientation, checklists, website orientation
- IMSAFE
- Tab FAR/AIM (61, 91, AIM, study guide, 61.109 (certificate requirements), 61.87 (presolo requirements))
- Student pilot certificate, medical

Homework:

- PHAK Chapter 7 – Aircraft Systems
- PHAK Chapter 8 – Flight Instruments
- Find and download FltPlan GO app
- PHAK Chapter 14 – Airport Operations
- AIM – Chapter 2
- AFH – Chapter 3 – Basic Flight Maneuvers
- Untowered Airport Radio Calls
- RCR Traffic Pattern Document

Second Lesson:

Ground: Collision avoidance/clearing turns, sign up for FltPlan.com account, AWOS phone number, METARS and TAFs, how to find frequencies on FltPlanGO or AirNav, airport markings and signs, RCR taxi diagram, intro to and how to read ACS

Maneuvers: Engine start, taxi, runup, assisted takeoff (this will be at the beginning of each lesson but no longer mentioned in the lesson plans), turns, climbs, descents, climbing turns and descents, demonstrated landing

Homework:

- PHAK Chapter 4 – Principles of Flight
- PHAK Chapter 5 – Aerodynamics of Flight (Forces acting on an aircraft, Axes of an aircraft)
- AFH Chapter 4 – Maintaining Aircraft Control: Slow Flight and Stalls
- ACS – Slow Flight and Stalls
- Maneuvers Guide: Slow Flight and Stalls

Third Lesson:

Ground: Forces of flight, angle of attack, how lift is produced, what is a stall, effect of flaps, airworthiness (tab 91.205)

Maneuvers: Slow flight, stalls to first indication, instructor demonstrated landing

Homework:

- PHAK Chapter 4 – Aerodynamics of Flight (stability, ground effect, wing tip vortices, wake turbulence avoidance)
- Maneuvers Guide: Stalls, Normal Takeoff, Normal Approach and Landing

Fourth Lesson:

Ground: Stability, ground effect, wing tip vortices, wake turbulence avoidance, load factor, gusts

Maneuvers: Full break stalls (if ready), demonstrated landing, perhaps talking student through flying pattern to final.

Homework:

- PHAK Chapter 5 – Aerodynamics in Flight: Load factor, Forces in Turns
- AFH Chapter 9 – Steep turns
- AFH Chapter 3 – Level turns
- AFH Chapter 4 – Maintaining Aircraft Control: Unusual Attitudes
- ACS – Steep Turns
- ACS – Unusual Attitudes
- Maneuvers Guide: Steep Turns
- Boldmethod.com > CFI Tools > Forces in a Turn

Fifth Lesson:

Ground: Load factor, forces in a turn

Maneuvers: constant airspeed climbs and descents (incorporate while you climb to altitude, and then descent to altitude), Steep turns, unusual attitudes, demonstrated/assisted landing

Homework:

- AFH Chapter 6 – ground reference maneuvers
- ACS – ground reference maneuvers
- POH – find takeoff and landing charts
- PHAK Chapter 10 – Weight and Balance
- PHAK Chapter 11 – Aircraft Performance
- FAR/AIM (tab) Private pilot responsibility (91.3) and preflight action (91.103)
- ACS – Performance and Limitations
- Print or download crosswind chart
- Maneuvers Guide: Ground Reference Maneuvers (Rectangular, S Turns, Turns About a Point), Landings

Sixth lesson:

Ground: how to read and work a takeoff or landing chart, headwind/crosswind calculations

Maneuvers: ground reference maneuvers, demo/assisted landing

Homework:

- PHAK Chapter 10 – Weight and Balance
- ACS – Weight and Balance
- FAR – Weight and Balance
- PHAK – Chapter 2: Aeronautical Decision Making
- AFH Chapter 17: Emergency Procedures
- ACS – Section IX. Emergency Operations
- POH – Emergency Procedures
- Maneuvers Guide: Emergency Procedures: Spiraling Descent, Straight Ahead Descent, Engine Out Landing, Go Around, Forward Slip

Seventh Lesson:

Ground: Weight and balance problems. Calculate with app and manually.

Maneuvers: Emergency descents – spiral, straight ahead, forward slip, engine out (go around)

Homework:

- POH – Emergency Procedures, carb ice
- ACS – Emergency Operations
- PHAK Chapter 7 – Aircraft Systems
- PHAK Chapter 12 – Weather Theory
- POH – aircraft systems: engine, oil system, ignition, carburetor heat/induction system, propeller, hydraulic systems, VFR required equipment, what is a KOEL, Inop equipment
- PHAK Chapter 8 – Flight Instruments
- FAR 91.205

Eighth Lesson:

Ground: Aircraft systems, Emergency procedures, where to find weather charts on FltPlan.com/Aviationweather.gov

Maneuvers: Emergency procedures (briefed on ground. Some may not require practice in air) – alternator malfunction, engine malfunction, engine on fire, smoke in the cabin, electrical fire, carb ice, rejected takeoff

Homework:

- PHAK Chapter 12 – Weather Theory
- AFH Chapter 7 and 8 – Airport Traffic Patterns
- AFH Chapter 5 – Takeoffs and Departure Climbs
- AFH Chapter 8 – Approaches and Landings, Forward Slips
- ACS – Landings
- Maneuvers Guide: Normal Takeoff, Normal Approach and Landing, Forward Slip

Ninth Lesson:

Ground: Weather Theory

Maneuvers: Takeoffs and landings, go arounds, forward slip to a landing, one maneuver of choice to practice.

Homework:

- FltPlan.com/AviationWeather.com – weather charts
- PHAK Chapter 15 – Aviation Weather Services
- ACS – Weather Information
- AFH Chapter 8 – Approaches and Landings: Crosswind landings and sideslips
- ACS – Crosswind Landings

Tenth Lesson (repeated until solo):

Ground: Weather charts, how to get a weather briefing*

Maneuvers: Takeoffs and landings, go arounds, periodic engine out landings, no flap landings, crosswind landings, sideslip. Can break up with a maneuver of choice.

Homework:

- Tab FAR/AIM
- Study ACS
- Required solo endorsements
- PHAK Chapter 2 – Aeronautical Decision Making
- Task Management
- CFIT
- ADM
- Single Pilot Resource Management
- What is an Advisory Circular
- PHAK Chapter 17 – Aeromedical Factors

* there will likely be several lessons on landings, so ground areas that are weak can be revisited.

Ground lessons not previously covered:

Avionics Systems

Ground: avionics, pitot static system, gyro instruments, vacuum system, electric instruments, anti-ice vs. deice, magnetic compass and errors, maintenance requirements, service bulletins/Ads)

Previous Homework:

- PHAK Chapter 8 – Flight Instruments

Lesson: SOLO!

Ground: endorsements, 90-day solo endorsement, set reminder in phone so it doesn't inadvertently expire, pre-solo written exam will have been introduced to student around Lesson Eight or earlier, but must be finished and graded beforehand.

Maneuvers: three takeoffs and three full stop landings

Homework:

- AFH Chapter 8 – Approaches and Landings: Short and Soft field landings
- ACS – Short and Soft Field Landings
- PHAK Chapter 15 – Airspace
- Boldmethod.com – Airspace

Lesson: Second Solo

Ground:

Maneuvers: takeoffs and landings. Instructor will do the first three or so with you before hopping out and letting you practice on your own.

Homework:

- PHAK Chapter 16 – VOR navigation

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