Introduction

This syllabus is based on Rod Machado's Private Pilot Syllabus. It is focused on teaching the stick and rudder skills of flight. This will create a strong foundation for future learning. The Private Pilot License (PPL) is referred to a license to learn and the goal of this course is to teach the learner the necessary skills to be a safe pilot that can continue to learn after course completion.

The beginning phases of training will have a heavy focus on ground knowledge with a greater amount of homework. The flight portions will be working on the fundamental skills to fly the plane and handle unplanned events. This phase culminates with the learners first solo.

The next phase is focused on navigation and includes cross-country flights, which are defined, as required for the certificate, as flights to an airport that is greater than 50 nm away from the original point of departure.

The final phase prepares the learner for the check ride. The check ride will be a ground and flight test with a Designated Pilot Examiner (DPE). The ground portion will be a conversational oral exam. The flight test will be a demonstration of maneuvers and decision making. Both are conducted following the Airmen Certification Standards (ACS).

The required written exam for PPL must be completed before the first solo cross-country flight. It is listed as lesson 22. The contents of each lesson may change as the course is adjusted to each student. Some learners may take longer on a particular skill or require less time.

Following the discovery flight or first lesson the student will need to go to an Aviation Medical Examiner (AME) to get at minimum a third class medical. It is recommended to go for a first class medical if you are considering a career as an airline pilot to find any disqualifications before investing into the training.

The student pilot certificate and TSA verification will also be done on the first flight. Please bring your passport to the first lesson.

Private Pilot Flight Lessons Overview

LESSON 1. DUAL FLIGHT (Ground 1.2/Flight 1.3)
LESSON 2. DUAL FLIGHT (Ground 1.2/Flight 1.3)
LESSON 3. DUAL FLIGHT (Ground 1.2/Flight 1.3)
LESSON 4. DUAL FLIGHT (Ground 1.2/Flight 1.3)
LESSON 5. DUAL FLIGHT (Ground 1.2/Flight 1.3)
LESSON 6. DUAL FLIGHT (Ground 1.2/Flight 1.3) – Takeoff and Landing Practice
LESSON 7. DUAL FLIGHT (Ground 1.2/Flight 1.3) – Takeoff and Landing Practice
LESSON 8. DUAL FLIGHT (Ground 1.2/Flight 1.3) – Takeoff and Landing Practice
LESSON 9. DUAL AND FIRST SOLO FLIGHT (Ground 1.2/Flight 1.3) – First Solo
LESSON 10. DUAL AND SECOND SOLO FLIGHT (Ground 1.2/Flight 1.3) – Review and Second Solo
LESSON 11. DUAL AND THIRD SOLO FLIGHT (Ground 1.2/Flight 1.3) – Review and Third Solo
LESSON 12. DUAL FLIGHT (Ground 1.2/Flight 1.3) – Review All Basic Pre–solo Maneuvers
LESSON 13. DUAL FLIGHT (Ground 1.2/Flight 1.3) – Instruments Basic Skills
LESSON 14. SOLO FLIGHT (Flight 1.3) – Practice Area Solo Flight
LESSON 15. DUAL FLIGHT (Ground 1.2/Flight 1.3) – Instruments Basic Skills
LESSON 16. DUAL FLIGHT (Ground 1.2/Flight 1.3) – VOR/GPS Navigation
LESSON 17. SOLO FLIGHT (Flight 1.3) – Practice Area Solo Flight
LESSON 18. DUAL FLIGHT (Ground 1.2/Flight 1.3) – Basic Instruments and VOR Navigation
LESSON 19. FIRST DUAL CROSS–COUNTRY FLIGHT (Ground 1.2/Flight 1.5) – Dual Cross-Country Flight
LESSON 20. SOLO FLIGHT (Flight 1.3) – Review Maneuvers and Navigation Practice
LESSON 21. SECOND DUAL (LONG) CROSS-COUNTRY FLIGHT (Ground 1.2/Flight 3.0) – Dual XC
LESSON 22. SOLO CROSS-COUNTRY FLIGHT (Flight 1.5) – First Solo XC Flight
LESSON 23. DUAL NIGHT FLIGHT (Ground 1.2/Flight 1.3) – Local Night Flight Introduction
LESSON 24. SOLO CROSS-COUNTRY FLIGHT· (Flight 1.5) –Second Short Solo Cross-Country Flight
LESSON 25. DUAL (LONG) NIGHT CROSS-COUNTRY FLIGHT (Ground 1.2/Flight 2.3) – 100 NM Dual Night XC
LESSON 26. LONG SOLO CROSS–COUNTRY FLIGHT (Flight 2.5) – 150 NM/Landing More Than 50NM/With 3 Full Stops
LESSON 27. DUAL FLIGHT (Ground 1.2/Flight 1.3) – Practice Flight Test Maneuvers
LESSON 28. SOLO FLIGHT (Flight 1.3) – Practice Flight Test Maneuvers Solo
LESSON 29. DUAL FLIGHT (Ground 1.2/Flight 1.3) – Practice Flight Test Maneuvers
LESSON 30. SOLO FLIGHT (Flight 1.3) – Practice Flight Test Maneuvers Solo
LESSON 31. DUAL FLIGHT (Ground 1.2/Flight 1.3) – Practice Flight Test Maneuvers
LESSON 32. SIMULATED PRACTICAL FLIGHT TEST (Ground 1.2/Flight 1.3)

Total flight time – 46.1 Hours
Solo – 12.2 Hours
Solo XC- 5.5 Hours
Dual IFR training – 3.9 hours
Dual night training – 3.6 hours

FAR Requirement for the Private Pilot Certificate

FAR §61.109 Aeronautical experience.

(a) For an airplane single–engine rating. Except as provided in paragraph (k) of this section, a person who applies for a private pilot certificate with an airplane category and single–engine class rating must log at least 40 hours of flight time that includes at least 20 hours of flight training from an authorized instructor and 10 hours of solo flight training in the areas of operation listed in §61.107(b)(1) of this part, and the training must include at least—

(1) 3 hours of cross–country flight training in a single–engine airplane;

(2) Except as provided in §61.110 of this part, 3 hours of night flight training in a single–engine airplane that includes—

(i) One cross–country flight of over 100 nautical miles total distance; and

(ii) 10 takeoffs and 10 landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport.

(3) 3 hours of flight training in a single–engine airplane on the control and maneuvering of an airplane solely by reference to instruments, including straight and level flight, constant airspeed climbs and descents, turns to a heading, recovery from unusual flight attitudes, radio communications, and the use of navigation systems/facilities and radar services appropriate to instrument flight;

(4) 3 hours of flight training with an authorized instructor in a single–engine airplane in preparation for the practical test, which must have been performed within the preceding 2 calendar months from the month of the test; and

(5) 10 hours of solo flight time in a single–engine airplane, consisting of at least—

(i) 5 hours of solo cross–country time;

(ii) One solo cross-country flight of 150 nautical miles total distance, with full–stop landings at three points, and one segment of the flight consisting of a straight–line distance of more than 50 nautical miles between the takeoff and landing locations; and

(iii) Three takeoffs and three landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport with an operating control tower.

Pre-study Requirement

Each lesson will have the following box called Pre-lesson Work Assignment. Please come to each lesson having completed the following reading. Additional notes or videos are recommended. Feel free to read more than the information listed. If you have any questions try to find the information using FAA material. If you are still stuck bring those questions to the next lesson where we will review them.

The flight simulator portion is optional. If you have a simulator or want to come in to use the club simulator please feel free to do so. It will help you understand the general idea of each maneuver and save you time and money during your training. This time does not count for your PPL.

AFH: Airplane Flying Handbook FAA-H-8083-3C
PHAK: Pilot's Handbook of Aeronautical Knowledge FAA-H-8083-25C
AIM: Aeronautical Information Manual
14 CFR: Federal Aviation Regulations (FARs), Found online at ecfr.gov
ACS: Airmen Certification Standards

The following Work Assignment should be completed prior to the first flight lesson.

Next Lesson Homework

AFH
Chapters 1 - All
Chapter 2 - All
Chapter 3 - Pages 3-1 to 3-17

PHAK
Chapter 4 – All
Chapter 5 – Pages 5-1 to 5-8, *Aerodynamics*
Chapter 7 - Pages 7-1 to 7-12, *Engines*

Flight Simulator
Straight and Level Flight and Turns

LESSON 1. DUAL FLIGHT (Ground 1.2/Flight 1.3)

Objective: Familiarize students with the airplane and its operating procedures, the sensations of flight, the local practice areas, the use of the flight controls, and the four fundamentals of flight.

3. Airplane familiarization
   c. Preflight inspection
   d. Check weather/wind before takeoff
   e. Cockpit familiarization/hand-feet placement on controls
   f. The airplane flight manual
   g. Explain positive change of flight controls
   h. Emphasize use of checklist (for start and runup phases)
   i. Place a "level," "climb" and "descent" dot on windshield
4. Starting the engine – Demo
   c. Engine care after start–RPM/oil pressure
5. Radio communications – Demo
6. Taxiing/navigating on airport – Demo/Do
7. Pre-takeoff check/Runup – Demo
8. Takeoff, traffic pattern, and climbout – Demo/Do
   c. See and avoid procedures, clearing turns – Demo/Do
9. Familiarization flight – Demo/Do (cover panel -if feasible)
   c. Identify practice area – Demo
   d. Elevator pitch control – Demo/Do
   e. Rudder yaw control – Demo/Do
   f. Aileron roll control – Demo/Do
   g. Throttle control – Demo/Do
   h. Rudder and aileron coordination – Demo/Do
   i. Trim control – Demo/Do
   j. Demo airplane stability – Demo/Do
   k. Emphasize flight by feel and attitude – Demo/Do
   l. Straight and level flight – Demo/Do
   m. Turns, right and left – Demo/Do
   n. Climbs – Demo/Do
   o. Power-off descents – Demo/Do
   p. Climbing turns – Demo/Do
   q. Descending turns – Demo/Do
   r. Power-off stall (imminent, not full) – Demo only
   s. Traffic pattern, parking, securing the airplane – Demo/Do
10. Postflight discussion
11. Preview of next lesson
   c. Straight and level, climbs, turns, and descents
   d. Slow flight and power-off stalls
   e. Medium and steep turns
   f. Assign homework

Next Lesson Homework

AFH

Chapter 3 – Pages 3-17 to 3-25 Climbs, Descents, and Glides

Chapter 5 – Pages 5-1 to 5-9, Slow Flight

PHAK

Chapter 5 - Pages 5-8 to 5-22, *Aerodynamics*

Chapter 7 – Pages 7-12 to 7-19 and 7-25 to 7-29, *Engines*

Flight Simulator

Takeoffs, Climbs, and Descents

Completion Standards: By the end of this lesson, the student should have a basic understanding of the four basic fundamentals of flight as well as how to operate the flight controls, trim, and throttle.

LESSON 2. DUAL FLIGHT (Ground 1.2/Flight 1.3)

Objective: Students should acquire basic skills at performing the four basic flight maneuvers without assistance. Students will be introduced to and practice entering and exiting slow flight without flaps, entry and recovery from basic power-off stall, and coordination rolls and steep turns. By the end of this lesson, students should be able to taxi without assistance.

1. Preflight discussion – Review, as required
   a. Review homework assignment
   b. Risk management: PAVE, IMSAFE, weather, passenger briefing, etc.
   c. Attitude + Power = Performance (discuss in detail)
   d. Crosswind control placement - taxiing – Demo/Do
2. Starting engine & Radio procedures – Do with CFI assistance
3. Taxiing – Do
4. Pre–takeoff check – Do with CFI assistance
5. Takeoff and exit traffic pattern – Do with CFI assistance
   a. Identify left turning tendency on takeoff/climb – Demo/Do
   b. Emphasize windscreen dots for attitude control – Demo/Do
   c. Emphasize see and avoid/clear all turns – Demo/Do
   d. Area familiarization – Demo
6. Straight climbs – emphasize “Attitude + Power = Performance”
   a. Two climb attitudes: Best rate and cruise climb attitude – Demo/Do
7. Straight and level – Demo/Do
   a. High cruise (XC flight) and low cruise (downwind) flight conditions
8. Medium turns (20°-45°) – Demo/Do
9. Turns to headings and climbing turns
10. Slow flight – Demo/Do
11. Use of trim in all flight conditions – Demo/Do
12. Power-off stalls (imminent/full) – Demo/Do
13. Steep turns – Demonstration only
14. Coordination rolls – Demo/Do
15. Descents and gliding turns – Do
    a. Two descent attitudes: Normal and best glide attitude –Demo/Do
16. Descents at 1.3 Vs (approach simulation, no flaps) – Demo/Do
17. Approach, traffic pattern, and landing – Demo
18. Taxiing and parking – Directed performance
19. Postflight discussion
20. Preview of next lesson
    a. Constant and variable airspeed descents
    b. Varying descent rate with power with constant airspeed
    c. Descents with flaps
    d. Takeoff, traffic pattern, and departure.
    e. Coordination exercises
    f. Assign homework

Next Lesson Homework

AFH

Chapter 5 – Pages 5-9 to 5-12, Slow Flight

PHAK

Chapter 5 - Pages 5-22 to 5-44, *Aerodynamics*
Chapter 7 - Pages 7-30 to 7-34, *Electrical System*
Chapter 8 - Pages 8-1 to 8-12, *Flight Instruments*

Flight Simulator

Student Pilot Lessons:

Slow Flight and Stalls

Completion Standards: The student should be able to perform the four basic fundamentals of flight as well as entering and exiting slow flight without flap. The student should be able to transition from a high cruise to 1.3 Vs and trim the airplane for that condition. Unassisted basic power-off stall recovery should be within the student skill range at this point.

LESSON 3. DUAL FLIGHT (Ground 1.2/Flight 1.3)

Objective: The student should attain reasonable proficiency in the performance of the four basic flight maneuvers, and learn to perform without assistance slow flight, power–off stalls, and coordination rolls. The student will gain skill at slowing the airplane down to approach speed, trim, and then descend in a trimmed condition. Adjusting descent rate with power is introduced and practiced here, too. A basic ground reference maneuver is also introduced.

1. Preflight discussion – Do/CFI review
   a. Review homework assignment
   b. Introduce aviation decision making concepts (DECIDE), including the passenger briefing
   c. Cockpit management
2. Engine start/radio communications/taxi – Do
3. Crosswind takeoff procedures – Demo/Do
4. Takeoff – Do
5. Traffic pattern and departure – Do
   a. Emphasis on "see and avoid" procedures - Do
6. Climbs and climbing turns – Do
7. Level–off from climbs and glides – Do.
8. Straight and level, shallow (0°-20°), medium (20°-45°), and steep turns (45°) – Do
9. Coordination rolls – Do
10. Speed changes in level flight: vary airspeed between high and low cruse flight – Demo/Do
11. Slow flight at MCA – Do (* See note in box below)
12. Power–off stalls – Do
    a) Secondary stalls – Demo/Do
13. Constant Airspeed power–off descents and turns – Do.
14. Variable airspeed descents – Demo/Do
15. Variable rate descents at constant airspeed – Demo/Do
16. Relationship between elevator and throttle in constant rate descents
17. Descents with partial/full flaps at 1.3 Vs – Do
18. Following a road and flying a rectangular course – Demo/Do
19. Airport approach and traffic pattern – Directed performance
20. Postflight discussion
    a) Lesson review
    b) Servicing the airplane
21. Preview of next lesson
    a) Power–on stalls
    b) Ground reference maneuvers
    c) Landing approaches
    d) Elementary forced landings
    e) Assign homework

Next Lesson Homework

AFH

Chapter 5 – Pages 5-18 to 5-27 *Stalls and Spins*
Chapter 7 – Pages 7-1 to 7-10, *Ground Reference*
Chapter 10 – Pages 10-1 to 10-4*, Perf. Maneuvers*

PHAK

Chapter 5 - Pages 8-15 to 8-28, *Flight Instruments*
Chapter 6 – All, *Flight Controls*

14 CFR

Part 1, Part 61, Part 91 (Skim Through)

Flight Simulator

Steep turns

Completion Standards: By the end of this lesson, the student should have the fundamental skills necessary to fly a traffic pattern and maintain a constant attitude and airspeed on final approach. The student should also have a more thorough understanding of operating in the slow-flight regime at MCA without stalling the airplane. The introduction to flying a rectangular pattern gives the student his/her first insight to how wind affects the airplane in flight. At this point, the instructor will definitely see strong habit formation of rudder and aileron coordination during coordination rolls. Student responsible for preflight going forward.

LESSON 4. DUAL FLIGHT (Ground 1.2/Flight 1.3)

Objective The student should achieve the ability to recognize and recover smoothly from stalls, fly prescribed patterns by ground references, and execute a traffic pattern and landing approach with the instructor's direction. The student should develop a basic understanding of emergency landing procedures and the relationship between glide speed and distance.

1. Preflight discussion
   a. Review homework
   b. Introduce concept of situational awareness
2. Takeoff, traffic pattern, and departure – Do
3. Straight and level flight, turns, climbs, and descents. – Do
4. Coordination rolls – Do
   a. During descents on a specific heading – Do
5. Slow flight at MCA – Do
   a. Entering and exiting slow flight
   b. Turns during slow flight at MCA
   c. Descents at slow flight at MCA
   d. Leveling off from descents at MCA
6. Power-on stalls – Demo/Do
   a. Partial and Full power stalls– Demo/Do
7. Constant airspeed variable rate descents on heading – Do
8. Simulated go-arounds from approach speed with full flaps
9. Steep turns (45°) – Do
10. Elementary forced landing simulation – Do
    a. Glide distance vs. airspeed change
    a. Forward slip introduction – Demo/Do
    b. Go around procedures – Demo/Do
11. Ground reference maneuvers
    a. Crabbing – Demo/Do
    b. Ground speed change with wind – Demo
    c. Rectangular course – Demo/Do
    d. Turns around a point – Demo/Do
    e. S-turns across a road. – Demo/Do
12. Traffic pattern and landing approach – Do
13. Postflight discussion
14. Preview of next lesson
    a. Takeoffs and landings
    b. Emergency procedures
    c. Stabilized approaches
    d. Assign homework

Next Lesson Homework

AFH
Chapter 7 – Pages 7-10 to 7-18, *Ground Reference*

PHAK
Chapter 2 – All, *ADM*
Chapter 3 – All, *Aircraft Construction*

14 CFR
Part 1, Part 61, Part 91 (Skim Through)

Flight Simulator
Practice what you've learned

Completion Standards: The student will have the basic skills to recognize and recover from power-off and power-on stalls and correct for the effects of wind on the flight of an airplane. The student should also have developed the basic habits required to successfully troubleshoot engine problems as well select a suitable emergency landing site, approach that site and land the airplane in the event of a complete engine failure.

LESSON 5. DUAL FLIGHT (Ground 1.2/Flight 1.3)

Objective: This lesson is a review of the flight maneuvers and procedures already covered in preparation for serious work on takeoffs and landings, and traffic pattern operations. By the end of this lesson, the student can establish a stabilized and trimmed power-on/off flight condition that simulates airplane operations on the downwind, base, and final approach. Time available at the end of this lesson can be used for a few touch and go landings.

1. Preflight operations
   a. Review homework
2. Crosswind takeoff control placement – Do
3. Slow flight and power on/off stalls – Do
4. Stabilized flight condition for (simulated) pattern operations – Demo/Do
   a. Downwind – no flaps/1.5 Vs
   b. Downwind – 10°-15° flaps/1.5 Vs
   c. Base leg - 10°-15° flaps/1.4 Vs
   d. Final approach - 10°-20° flaps/1.3 Vs
5. Spin awareness – Demo/Do
   a. Cross–control stalls – Demo/Do
   b. Use of rudder to stop entry rotation – Demo/Do
   c. Falling leaf stall practice – Demo/Do
6. Ground reference maneuvers – Do
   a. Rectangular course – Do
   b. Turns about a point – Do
   c. S–Turns – Do
7. Emergency forced landing simulation – Do
   a. Forward slip practice – Do
8. Traffic pattern observance, entry, and departure – Do
9. T&G Takeoffs and landing – Do/Instructor supervision
10. Postflight discussion
11. Preview of next lesson
    a. Takeoffs and landings
    b. Landing crosswind correction
    c. Balked takeoffs and go–arounds
    d. Assign Homework

Next Lesson Homework

AFH
Chapter 6, All, *Takeoffs and Climbs*
Chapter 8, All, *Traffic Pattern*
Chapter 9, 9-1 to 9-10, *Approaching to Land*

PHAK
Chapter 14 - All, *Airport Operations*

AIM
Chapter 4 - Section 2 (Skim Through), *Radio Comm.*

Flight Simulator
Landings and *The Traffic Pattern*

Completion Standards: By the end of this lesson the student should be ready to begin takeoff and landing practice. The student should be capable of establishing the airplane in any attitude at any airspeed and at any descent rate and trim for that flight condition. The habit of using rudder to stop spin entry rotation and elevator to decrease the angle of attack should be evident and becoming stronger at this stage of training. There should be no doubt that the student can identify when the airplane is drifting due to wind and be able to immediately correct that drift by crabbing into the wind.

LESSON 6. DUAL FLIGHT (Ground 1.2/Flight 1.3) – Takeoff and Landing Practice

Objective: This lesson consists of concentrated practice of takeoffs and landings. By the end of this lesson, the student should be able to make "directed" takeoffs and landings without assistance with the controls.

1. Preflight discussion – Instruction and review
   a. Review homework
   b. Weight and balance calculation
2. Takeoffs and landings – Directed practice
   a. Normal takeoff and landing – Do
   b. Use touch and goes if runway permits
   c. Use power-off approaches initially
   a. Use partial flaps initially
   a. Recognizing when to abort the takeoff
   b. Recognizing when to abort the landing
   c. Forward slips to landing – Do
   d. Stabilized approach concept – Do
   a. Sterile cockpit – takeoff and landing – Do
3. Traffic pattern operations – Do
4. Visual approach aids (VASI, PAPI, etc.)
5. Wake turbulence: precautions and avoidance – Do
6. Postflight discussion
7. Preview of next lesson
   a. Crosswind takeoffs and landings
   a. Balked takeoff and landing recoveries
   b. Go-arounds
   c. Assign homework

Next Lesson Homework

AFH
Chapter 9, Pages 9-10 to 9-38, *Approaching to Land*

PHAK
Chapter 15 - Pages All, *Airspace*

Extra
Listen to Live ATC or YouTube Radio Communications

Flight Simulator
Landings

Completion Standards: By the end of this lesson, the student should be able to recognize the desired glidepath needed to reach the runway safely as well as properly modify that glidepath through the use of pitch and power. The student should also have a basic idea of the behavioral elements involved in rounding-out and flaring the airplane for landing.

LESSON 7. DUAL FLIGHT (Ground 1.2/Flight 1.3) – Takeoff and Landing Practice

Objective: Takeoffs and landing practice should continue with this lesson. If feasible, basic crabbing to landing should be introduced in this session with a "kick out" procedure initiated prior to touchdown. By the end of this lesson, the student should be able to make directed takeoffs and landings without assistance on the controls. Simulated forced landings should be introduced at unannounced intervals during this lesson, and hereafter.

1. Preflight discussion – Instruction and review
   a. Review homework
   b. Takeoff/landing performance chart calculation
   c. Density altitude
   d. Crosswind component chart calculation
2. Takeoffs and landings – Directed practice
   a. Density altitude simulation – Demo/Do
   b. Evaluating runway trapezoidal geometry – Demo/Do
   c. Correcting for a low approach – Do
   d. Correcting for a high approach – Do
3. Crosswind takeoff correction (crabbing) – Do
4. Crab crosswind landings (crabbing) – Do
5. Simulated engine failure in pattern – Do
6. Use of partial and full flaps – Do
7. Go around procedures with partial and full flaps – Do
8. Basic takeoff procedure – Do
   a. Aborting takeoff while on ground – Demo/Do
9. Balked landing procedures – Demo/Do
   a. Bounce recovery – Demo/Do
   b. Floating recovery – Demo/Do
10. Wake turbulence: precautions and avoidance – Do
11. Postflight discussion
12. Preview of next lesson
    a. Slips (forward and side slipping)
    b. Crosswind landing correction (side slip)
    c. Advanced balked takeoffs and go-arounds
    d. Preparation for pre-solo written exam
    e. Assign homework

Next Lesson Homework

AFH
Chapter 4 - *Skim Through, Energy Management*

PHAK
Chapter 1 – All, Intro to Flight

AC 90-66-C

Read the Emergency Section of your POH

Flight Simulator
Landings

Completion Standards: By the end of this lesson, the student should be able to make the takeoff, fly the traffic pattern, stabilize and trim the airplane on final approach and land without the instructor physically touching the controls.

LESSON 8. DUAL FLIGHT (Ground 1.2/Flight 1.3) – Takeoff and Landing Practice

Objective: Crosswind takeoffs and landings, as well as side slips to landing, should be added to the practice of normal takeoffs and landings. Typical pattern emergencies should be introduced and practiced here (i.e., flap retraction failure, rough engine condition, carb ice detection and removal, stuck throttle, airspeed indicator failure, etc.). On completion of this lesson, the student should be able to make unassisted takeoffs and landings and fly an accurate traffic pattern.

1. Preflight discussion – Instruction and review
   a. Review homework
   b. Minimum equipment list review
   c. Issue pre-solo written exam and review
2. Takeoffs and landings – Do
3. Engine failure on takeoff simulation – Demo/Do
4. Emergency pattern descent and landing – Demo/Do
5. Pattern emergencies
   a. Door/window pop open on takeoff – Demo/Do
   b. Flap retraction failure – Demo/Do
   c. Rough engine condition – Demo/Do
   d. Carb ice detection and removal – Demo/Do
   e. Stuck throttle – Demo/Do
   f. Elevator control failure – Demo/Do
   g. Airspeed indicator failure – Demo/Do
6. System and equipment malfunction – Do
7. Crosswind takeoffs and landings – Do
8. Slips (forward and side) – Do
9. Use of flaps for takeoffs – Do
10. Landing without use of the airspeed indicator – Do
11. Loss of radio procedures – tower light-gun demo
12. Balked takeoffs
    a. Aborting takeoff while airborne – Demo/Do
13. Balked landing
    a. Porpoise correction – Demo/Do
    b. Ballooning correction – Demo/Do
14. Emergency go-arounds – Do
15. Wake turbulence: precautions and avoidance – Do
16. Postflight discussion
17. Preview of next lesson
    a. Increased precision with takeoffs and landings
    b. Assign homework

Next Lesson Homework

PHAK
Chapter 9 – All, *Documents*

Study Sectional or TAC and look up unknown symbols
Use Chart Users Guide as reference

Flight Simulator
Landings

Completion Standards: By the end of this lesson, the student should be able to consistently and safely make acceptable takeoffs and landings. The student should be aware of how to avoid the hazards associated with takeoffs and landings, including wake turbulence avoidance, crosswind takeoffs and landings, and pattern emergencies. This lesson can be repeated until the student attains the behavioral objectives listed above.

LESSON 9. DUAL AND FIRST SOLO FLIGHT (Ground 1.2/Flight 1.3) – First Solo

Objective: The student should achieve reasonable proficiency in making consistently safe takeoffs and landings without assistance in both normal and (light) crosswind conditions. They should be able to recover from poor approaches, bounces, floating and porpoises. They should demonstrate the ability to solve all ordinary problems usually encountered during pattern operations.

1. Preflight discussion – Instruction and review
   a. Review homework
   b. Student document check in prep for solo
2. Takeoffs and landings – Do
3. Engine failure on takeoff simulation – Do
4. Pattern emergencies - review
5. Slips (forward and side) review – Do
6. Landing without use of airspeed indicator – Do
7. Balked takeoffs review – Do
8. Balked landing review – Do
9. Wake turbulence: precautions and avoidance review – Do
10. Solo – if student is ready
11. Postflight discussion
12. Preview of next lesson
    a. Basic airwork review of primary maneuvers – Do
    b. Assign homework

Next Lesson Homework

AFH
Chapter 18 – All, *Emergency Procedures*

PHAK
Chapter 12 - Pages 12-1 to 12-12, *Weather Theory*

AC 91-92*, Preflight Briefing*

Airmen Certification Standards
Read, *I-Preflight Preparation:* A and B

Completion Standards: At the end of this lesson, the instructor will assess whether the student is capable of making three solo landings. The ability to perform all pattern operations without assistance from the instructor, along with performance that is “consistent,” is essential for evaluating a student’s readiness for solo.

LESSON 10. DUAL AND SECOND SOLO FLIGHT (Ground 1.2/Flight 1.3) – Review and Second Solo

Objective: At the completion of the dual portion of this lesson, the student will have reviewed all the basic pre-solo maneuvers with the introduction and practice of accelerated stalls and cross control stalls. Progressively higher standards of performance will be required for all maneuvers previously learned.

1. Preflight discussion – Instruction and review
   a. Review homework
2. Review of pre-solo maneuvers
   a. Slow flight – Do
   b. Power-off and on stalls – Do
   c. Spin awareness (entry/recovery if possible)
   d. Steep turns – Do
   e. Coordination rolls – Do
   f. Emergency landing – Do
   g. S–turn across a road – Do
   h. Turns about a point – Do
2. Cross–control stalls – Demo/Do
3. Accelerated stalls – Demo/Do
4. Dealing with distractions in flight – Demo/Do
   a. Create distractions during flight – Demo/Do
   b. Task management – Demo/Do
5. Emergency forced landing simulation – Do
6. Takeoffs and landings – Do
7. Remaining time spent in solo flight – Instructor observes
8. Postflight discussion
9. Preview of next lesson
   a. Maximum performance takeoffs and landings
   b. Assign homework

Next Lesson Homework

PHAK
Chapter 12 - Pages 12-1 to 12-12, *Weather Theory*

AC 91-92*, Preflight Briefing*

Airmen Certification Standards
Read, *I-Preflight Preparation:* G and H
Read, I-Takeoffs, Landings, Go arounds: C, D, E, F

Flight Simulator
Free Practice

Completion Standards: Meets the applicable ACS standards for maneuvers tested. At the end of this lesson, the student should be allowed to solo assuming a satisfactory review of the listed pre-solo airwork.

LESSON 11. DUAL AND THIRD SOLO FLIGHT (Ground 1.2/Flight 1.3) – Review and Third Solo

Objective: Introduce the student to maximum performance takeoff and landing techniques. Four or five solo flights in the traffic pattern should be permitted, depending on the student's performance.

1. Preflight discussion
    a. Review homework
    b. Takeoff and landing performance calculations
2. Windshear recognition and recovery – Demo/Do
3. Dealing with distractions in pattern – Demo/Do
    a. Create distractions for student – Demo/Do
4. Maximum performance takeoff
    a. Short field takeoff – Demo/Do
    b. Soft field takeoff – Demo/Do
    c. Taxi technique for soft field takeoff – Demo/Do
5. Maximum performance landings
    a. Runway overflight demo – Demo/Do
    b. Short field landing – Demo/Do
    c. Soft field landing – Demo/Do
6. Postflight discussion
7. Preview of next lesson
    a. Practice area checkout
    b. Assign homework

Next Lesson Homework

PHAK
Chapter 12 - Pages 12-12 12-26, *Weather Theory*

AC 00-6B *Skim Through*

Airmen Certification Standards
Read, *II-Preflight Procedures:* A through F
Read, *IV-Takeoffs, Landings, Go-arounds:* A and B
Read, *III-Airport Operations:* A and B

Flight Simulator
Free Practice

Completion Standards: At the completion of this lesson, the student will have a basic understanding of maximum performance takeoffs and landings. Students will also be made aware of the dangerous effects of distractions during pattern operations as well as how to recognize and avoid these distractions.

LESSON 12. DUAL FLIGHT (Ground 1.2/Flight 1.3) – Review All Basic Pre–solo Maneuvers

Objective: This lesson consists of a short trip, using pilotage, to navigate to and from the practice area. The intent is to prepare the learner for solo flight to and from this area as well as review of the proper method to enter the local traffic pattern. A quick introduction to basic instrument flying occurs near the end of the lesson. At the completion of the lesson the student should be ready for local solo flights in assigned practice areas.

1. Preflight discussion – Instruction and review
   a. Review homework
   b. Sectional chart review of practice area – Do
   c. Pilotage to/from practice area – Do
   d. Area Checkout
2. Review of pre-solo maneuvers – Do
3. Slow flight – Do
4. Power-off and on stalls – Do
5. Cross–control stalls – Do
6. Spin awareness training (entry/recovery if possible) – Do/Demo
7. Steep turns – Do
8. Coordination rolls – Do
9. Accelerated Stalls – Demo/Do
10. Recovery from unusual attitudes – Do/Demo
11. Brief introduction to basic instrument flight
    a. Straight and level flight – (instrument reference only - Demo/Do)
    b. Turns – (instrument reference only - Demo/Do)
    c. Emergency 180° turn on instruments – (instrument reference only - Demo/Do)
    d. Climbs – (instrument reference only - Demo/Do)
    e. Descents – (instrument reference only - Demo/Do)
12. Re-familiarization with practice area – Do
13. Radar vectoring navigation from ATC
14. Emergency landing – Do
15. S–turn across a road – Do
16. Turns about a point – Do
17. Takeoffs and landings – Do
18. Remaining time spent in solo flight
19. Postflight discussion
20. Preview of next lesson
    a. First solo flight outside traffic pattern
    b. Assign homework
    c. Assign solo practice maneuvers

Next Lesson Homework

PHAK
Chapter 13 - All, *Wx Services*

AC 00-6B *Skim Through*

Airmen Certification Standards
Read, *III-Airport Operations:* A and B
Read, *VIII-Basic Instrument Maneuvers:* A, B, C, D
Read, *IX-Emergency Operations*: A, B, C

Flight Simulator
Self-practice flying on instruments

Completion Standards: By the end of this lesson the student can safely perform all the previously studied pre-solo maneuvers as well as navigate to and from the practice area and handle any appropriate radio communications. The student has the necessary skill to exit a cloud should that unfortunate occurrence happen during a trip to the practice area.

LESSON 13. DUAL FLIGHT (Ground 1.2/Flight 1.3) – Instruments Basic Skills

Objective: This lesson's objective is to provide the student with additional practice at flying by reference to instruments. The student should be allowed to experience vertigo as induced by the instructor.

1. Preflight discussion – Instruction and review.
    a. Review homework
2. Instrument flight to practice area:
    a. Climbs – (instrument reference only) – Do
    b. Straight and level – (instrument reference only) – Do
    c. Descents – (instrument reference only) – Do
    d. Slow flight – (instrument reference only) – Do
3. Turns to a heading – (instrument reference only) – Do
    a. Using the magnetic compass
4. Induced vertigo by instructor – Demo
5. Unusual attitudes – (instrument reference only) – Demo/Do
6. Graveyard spiral – (instrument reference only) – Demo/Do
7. Postflight discussion
8. Preview of next lesson
    a. Assignment homework
    b. Basic VOR/GPS navigation

Next Lesson Homework

PHAK

Chapter 11 – All, *Aircraft Performance*

Review POH

Flight Simulator

Self-practice flying on instruments

Completion Standards: At the end of this lesson, the student should be able to perform the four fundamentals of flight completely by reference to instruments. The student should also have the ability to identify and recover from unusual attitudes and graveyard spirals during flight solely on instruments.

LESSON 14. SOLO FLIGHT (Flight 1.3) – Practice Area Solo Flight

Objective: This is the first lesson during which the student is permitted to fly solo to and from the practice area under the limitations specified in the student's logbook. This should include the practice of specified maneuvers and procedures within assigned practice areas, and normal takeoffs and landings upon returning to the home airport

1. Flight maneuvers and procedures – Solo practice, as assigned
2. Takeoffs and landings – Solo practice
3. Preview of next lesson
    a. Review of basic instrument skills

The student may fly solo to and from the practice area and practice touch and goes as the instructor permits. The solo is done only under the instructor's stated stipulations and requirements listed in that student's logbook and agree to by the student.

Next Lesson Homework

PHAK
Chapter 10 – All, *Weight and Balance*

Airmen Certification Standards
Read, *VIII-Basic Instrument Maneuvers:* E

Flight Simulator
Practice what you've learned: Free flight

Completion Standards: At the completion of this solo flight, the student should have confidence and a sense of ease in flight which will make them receptive to new areas of instruction.

LESSON 15. DUAL FLIGHT (Ground 1.2/Flight 1.3) – Instruments Basic Skills

Objective: This lesson's objective is to provide the student with additional practice at flying by reference to instruments. The student should be allowed to experience vertigo as induced by the instructor.

1 Preflight discussion – Instruction and review.
   a. Review homework
2. Instrument flight to practice area:
   a. Climbs – (instrument reference only) – Do
   b. Straight and level – (instrument reference only) – Do
   c. Descents – (instrument reference only) – Do
   d. Slow flight – (instrument reference only) – Do
3. Turns to a heading – (instrument reference only) – Do
   a. Using the magnetic compass
4. Induced vertigo by instructor – Demo
5. Unusual attitudes – (instrument reference only) – Demo/Do
6. Graveyard spiral – (instrument reference only) – Demo/Do
7. Postflight discussion
8. Preview of next lesson
   a. Assign homework
   b. Basic VOR/GPS navigation

Next Lesson Homework

PHAK
Chapter 16 Pages 16-22 to 16-35, *Radio Navigation*

Airmen Certification Standards
Read, *VI-Navigation:* B

Flight Simulator
VOR Navigation

Completion Standards: At the end of this lesson, the student should be able to perform the four fundamentals of flight completely by reference to instruments. The student should also have the ability to identify and recover from unusual attitudes and graveyard spirals during flight solely on instruments.

LESSON 16. DUAL FLIGHT (Ground 1.2/Flight 1.3) – VOR/GPS Navigation

Objective: This lesson provides the student with an introduction to basic VOR and GPS navigation in preparation for the upcoming dual cross–country flight instruction.

1. Preflight discussion
    a. Review homework
    b. Introduction to VOR navigation
2. Introduction to Basic VOR navigation (visual reference only).
    a. Course selection – Do/Demo
    b. Tracking to then from a VOR station – Do/Demo
    c. Course tracking (wind correction) – Do/Demo
    d. Course interception – Do/Demo
    e. Cross radial reference to determine position – Do/Demo
3. Introduction to Basic GPS navigation
    a. Course selection – Do/Demo
    b. Flying direct to and from a waypoint – Do/Demo
    c. Tracking to and from a waypoint (wind correction) – Do/Demo
    d. Intercepting a bearing – Do/Demo
    e. Using the moving map to determine position – Do/Demo
4. Postflight discussion
5. Preview of next lesson
    a. Advanced VOR and GPS Nav (instrument reference only)
    b. Assign homework

Next Lesson Homework

PHAK
Chapter 17 - All, *Aeromedical*

Flight Simulator
Practice what you've learned: Free flight

Completion Standards: At the end of this lesson, the student should be able to select any course to or from a station, intercept that course, and track it. The students should also be capable of determining their position by cross radial reference from two or more VOR stations. Depending on the type of GPS system available in the airplane, the student should develop the same fidelity with tracking a bearing to and from a waypoint as well as skill at using the GPS moving map display.

LESSON 17. SOLO FLIGHT (Flight 1.3) – Practice Area Solo Flight

Objective: This is the second lesson during which the student is permitted to fly solo to and from the practice area. This should include the practice of specified maneuvers and procedures within assigned practice areas, and normal takeoffs and landings upon returning to the home airport.

1. Flight maneuvers and procedures – Solo practice, as assigned
2. Takeoffs and landings – Solo practice
3. Preview of next lesson
    a. Review of basic instrument skills
    b. VOR/GPS Navigation

Next Lesson Homework

PHAK
Chapter 16 Pages 16-1 to 16-22, *Navigation*

Watch Video
https://youtu.be/Ydvev6B7IaY?si=fy5WIu84IjUJqUud

Airmen Certification Standards
Read, *VI-Navigation:* B

Flight Simulator
Practice what you've learned: Fly to your local practice area and return in the simulator.

Completion Standards: At the completion of this solo flight, the learner should have even more confidence and a greater sense of ease in flight which will make them receptive to new areas of instruction.

LESSON 18. DUAL FLIGHT (Ground 1.2/Flight 1.3) – Basic Instruments and VOR Navigation

Objective: This lesson's objective is to provide the student with additional practice at flying by reference to instruments only and navigating by reference to VOR station and GPS waypoints. This lesson prepares the student for the upcoming dual cross–country flight.

1. Preflight discussion
    a. Review homework
2. Instrument flight to practice area:
    a. Course selection – (instrument reference only) – Demo/Do
    b. Tracking TO then FROM a VOR station (instrument reference only) – Demo/Do
    c. Course tracking (wind correction) (instrument reference only) – Demo/Do
    d. Course interception (instrument reference only) – Demo/Do
    e. Cross radial reference to determine position (instrument reference only) – Demo/Do
    e. Climbs, turns, descents on instruments while navigating by VOR – Demo/Do
3. Postflight discussion.
4. Preview of next lesson
    a. Assign homework
    b. Procure materials for cross country flight
    c. Plot and prepare cross–country flight log

Next Lesson Homework

Plan Assigned Cross-Country Flight

1. Draw route(s) on sectional/TAC chart
2. Pick checkpoints/plot course
3. Consult performance charts
4. Create initial flight log
5. Obtain NOTAMS, Wx Briefing
6. Consult *Chart Summary (CS)*
7. Morning of flight, use current winds for DR routes
8. Then calculate times, distances, fuel consumed
9. File flight plan

Airmen Certification Standards

Read, *VI-Navigation:* A, C, D
Read, *I-Preflight Preparation:* C, D, E, F, H

Flight Simulator

Fly the cross-country flight you'll plan for the next lesson. Assume no wind. Just fly the route. Examine the entire route on Google Earth, too.

Completion Standards: At the completion of this lesson the student should be able to navigate to and from a VOR and intercept courses solely when flying by reference to flight instrument.

LESSON 19. FIRST DUAL CROSS–COUNTRY FLIGHT (Ground 1.2/Flight 1.5) – Dual Cross-Country Flight

Objective: This lesson consists of a ground review of the cross-country flight log as per the homework assigned on the previous lesson. At the completion of this review, a short cross-country flight is made to a towered or non-towered airport. The emphasis on this flight will be navigation by dead reckoning, pilotage, and landfall along with radio communication with ATC facilities, as necessary. The diversion to a nearby airport can be either the towered or nontowered airport. A landing is made at both the original airport (towered/non-towered) and the diversion airport (towered/non-towered). (**Note: All XCs, dual and solo, are more than 50 nm from the original point of departure**.)

1. Preflight discussion
   a. Review homework
   b. Review cross-country flight planning
   c. Check weather, NOTAMS, etc.
   d. Emergency equipment for survival
   e. Filing a flight plan
2. Cross-country flying – Do a. Pilotage – Demo/Do
   b. Dead reckoning – Demo/Do
   c. Landfall navigation – Demo/Do
3. Cross–country emergencies
   a. Diverting to nearby airport – Do
   b. Simulated engine failures – Do
4. Unfamiliar airport procedures – Demo/Do
5. Non-tower airport procedures – Demo/Do
6. Class D (tower) airport procedures – Demo/Do
7. Use of basic radar service/flight following – Demo/Do
8. In-flight communications with flight service station – Do
9. Postflight discussion
10. Preview of next lesson
    a. Local solo practice flight
    b. Assign homework

Next Lesson Homework

Use Current Knowledge Test Guide to Prep for Exam
Take multiple practice exams in prep for knowledge exam

Airmen Certification Standards
Read, *V-Performance Maneuvers:* All
Read, *VII-Performance Maneuvers:* A, B

Microsoft Flight Simulator
Re-fly the same flight you just flew with the instructor.

Completion Standards: At the completion of this lesson, the student will have a basic idea about how to plan, plot and fly a short cross-country flight to nearby towered and non-towered airports.

LESSON 20. SOLO FLIGHT (Flight 1.3) – Review Maneuvers and Navigation Practice

Objective: This lesson includes solo practice on flight maneuvers, takeoffs and landings, and on the use of VOR/GPS navigation.

1. Preflight discussion – Assignment of procedures and practice areas
   a. Slow flight
   b. Steep turns
   c. Power-off stalls (only)
   d. Coordination rolls
   e. VOR navigation (visually, of course)
   f. S-turns across a road
   g. Turns around a point
2. Takeoffs and landings – Solo practice
   a. Crosswind takeoffs and landings, slips
   b. Short and soft field takeoffs
   c. Short and soft field landings
3. Preview of next lesson
   a. Dual cross–country flight using radio aids

Next Lesson Homework

Plan Assigned Cross Country Flight

1. Draw route(s) on sectional/TAC chart
2. Pick checkpoints/plot course
3. Plot VOR course (TO/FROM) bearings (if used)
4. Consult performance charts
5. Create initial flight log
6. Obtain NOTAMS, Wx Briefing
7. Consult *Digital Chart Summary (d-CS)*
8. Morning of flight, use current winds for DR routes
9. Then calculate times, distances, fuel consumed
10. File flight plan

Use Current Knowledge Test Guide to Prep for Exam Take multiple practice exams in prep for knowledge exam

Flight Simulator

Fly the long cross country

Completion Standards: At the end of this solo flight, the student should be developing greater confidence in his or her ability to fly an airplane.

LESSON 21. SECOND DUAL (LONG) CROSS-COUNTRY FLIGHT (Ground 1.2/Flight 3.0) – Dual XC

Objective: This is a cross–country flight over a triangular course requiring at least three hours of flight time. It uses pilotage, dead reckoning, landfall and VOR stations for navigation (GPS moving maps not allowed on this lesson). Class D, C, and B airspace and special use airspace are also introduced/reintroduced in this lesson. At the completion of this lesson, the student should be prepared for VFR navigation over strange courses and have the ability to cope with common cross–country emergencies.

1. Preflight discussion
    a. Review homework
    b. Filing a flight plan
2. VFR navigation – Do
    a. Pilotage – Do
    b. Dead reckoning – Do
    c. Landfall navigation – Do
    d. VOR navigation – Do
3. Lost procedures – Demo/Do
4. Class D, C and B airspace procedures
    a. Establishing communication with ATC facility
    b. Obtaining Class B entry clearance
5. Special use airspace procedures (as applicable)
    a. MOAs (as applicable)
    b. Restricted/Alert airspace (as applicable)
    c. Prohibited airspace (as applicable)
    d. TFRs (as applicable)
6. Use of radio for enroute communications – Do.
    a. Basic radar flight following with Center
    b. Basic radar flight following with TRACON/RAPCON
    c. In-flight communication with flight service station
7. Cross-country emergencies – Do
    a. Simulated inadvertent encounter with adverse weather
    b. Diversion to another airport simulation
8. Postflight discussion.
9. Preview of next lesson.
    a. Short – and soft–field takeoffs and landings.
    b. Emergency radio assistance (DF and Radar).
    c. Flight planning and preparation.

Next Lesson Homework

Plan Assigned Cross Country Flight

1. Draw route(s) on sectional/TAC chart
2. Pick checkpoints/plot course
3. Plot VOR course (TO/FROM) bearings (if used)
4. Consult performance charts
5. Create initial flight log
6. Obtain NOTAMS, Wx Briefing
7. Consult *Digital Chart Summary (d-CS)*
8. Morning of flight, use current winds for DR routes
9. Then calculate times, distances, fuel consumed
10. File flight plan

PPL Knowledge Test

Flight Simulator

Practice night flying on Simulator – Set simulator to local airport at night and fly.
Fly the solo cross country you plan on flying solo in next lesson.

Completion Standards: At the completion of this lesson the student should now be ready to fly a short cross-country on their own to a local airport then build solo cross-country experience to other, more distant airports.

LESSON 22. SOLO CROSS-COUNTRY FLIGHT (Flight 1.5) – First Solo XC Flight

Objective: This solo cross-country flight should be over a relatively simple course with landings at two or more unfamiliar airports, preferably at least one with a control tower. A VFR flight plan should be filed when feasible, and flight following service should be requested.

1. Preflight discussion
    a. Approval of flight plan
    b. Weather analysis
    c. Filing a flight plan
2. VFR navigation
    a. Fly the cross-country trip solo
    b. Obtain flight following
3. Postflight discussion
    a. Critique on all unanticipated events and operations
4. Preview of next lesson
    a. Dual night flight

Next Lesson Homework

AFH
Chapter 11, *Night Flying*

Airmen Certification Standards
Read, *XI-Night Operations:* A
Read, *XII-Parking and Securing:* A

Flight Simulator
Practice what you've learned: Free flight
Re-fly the same cross country you previously flew.

Completion Standards: At the end of this flight the student will have acquired greater confidence in his/her ability to plan a trip and fly that trip.

LESSON 23. DUAL NIGHT FLIGHT (Ground 1.2/Flight 1.3) – Local Night Flight Introduction

Objective: This lesson familiarizes the student with the special considerations and problems characteristic of flight at night. This first night lesson will start at twilight, so that the student can experience the transition from daylight to night flight conditions. This lesson will provide at least five of the required 10 full stop landings at night.

1. Preflight discussion – Instruction and review
   a) Review homework
   b) Night flight equipment preparation
   c) Airplane readiness for night flight
2. Differences in visual references available at night – Demo/Do
   a) Absence of visual references over desert – Demo
   b) Obstacle avoidance techniques at night– Demo
3. Visual illusions at night – Demo
4. Takeoff and departure alignment techniques – Demo/Do
5. Interpretation of aircraft and obstruction lights – Demo
6. Airport lighting
   a) Runway edge lighting – Demo
   b) Loss of runway edge lighting – Demo
   c) Pilot control of airport lighting – Demo/Do
   d) REIL/VASI/PAPI lighting – Demo
7. Power approach and landings – Do
8. Use of landing lights – Do
   a) Landing with landing lights – Do
   b) Landing without landing lights – Do
   c) Landing with loss of runway edge lighting – Do
   d) Completion of first 5 of the required full stop night landings
9. Flight maneuvers over dark areas – Do
   a) Spatial disorientation – Demo/Do
   b) Emergency instruments use at night – Demo/Do
10. Postflight discussion
11. Preview of next lesson
    a) Solo cross–country flight
    b) Assignment
    c) Procure necessary equipment
    d) Prepare flight log
    e) Assign homework

Next Lesson Homework

Aeronautical Information Manual
Chapter 2 - Section 1*: Airport lighting Aids*
Chapter 2 - Section 2: Air Navigation and Obs. Lighting

Plan Assigned Cross Country Flight

1. Draw route(s) on sectional/TAC chart
2. Pick checkpoints/plot course
3. Plot VOR course (TO/FROM) bearings (if used)
4. Consult performance charts
5. Create initial flight log
6. Obtain NOTAMS, Wx Briefing
7. Consult *Chart Summary (CS)*
8. Morning of flight, use current winds for DR routes
9. Then calculate times, distances, fuel consumed
10. File flight plan

Flight Simulator

Practice what you've learned: Fly the cross country flight in next lesson.

Completion Standards: At the completion of this lesson, the student should be able to operate in the traffic pattern safely at night (instructor permitting). No flight to the practice area should be allowed at night until the student has obtained his or her private pilot certificate. Period!

LESSON 24. SOLO CROSS-COUNTRY FLIGHT· (Flight 1.5) –Second Short Solo Cross-Country Flight

Objective: This solo cross-country flight should be flown using dead reckoning, pilotage, landfall navigation and VOR navigation under a VFR flight plan. The selected airports should be longer in distance than the first solo cross-country flight.

1. Preflight discussion
    a) Review homework
    b) Instructor's approval of flight log
    c) weather analysis
2. Filing and closing of flight plan
3. VFR navigation
4. Enroute radio communications
5. Unfamiliar airport procedures
6. Postflight discussion
    a) Critique of any unanticipated incidents
    b) Assign homework
7. Preview of next lesson
    a) Night cross-country flying techniques

Next Lesson Homework

Plan Assigned Cross Country Flight

1. Draw route(s) on sectional/TAC chart
2. Pick night checkpoints/plot course
3. Plot VOR course (TO/FROM) bearings (if used)
4. Consult performance charts
5. Create initial flight log
6. Obtain NOTAMS, Wx Briefing
7. Consult *Digital Chart Summary (d-CS)v*
8. Morning of flight, use current winds for DR routes
9. Then calculate times, distances, fuel consumed
10. File flight plan

PHAK

Review critical/deficient areas

AFH

Review critical/deficient areas from knowledge exam

Flight Simulator

Practice what you've learned: Fly the cross country flight in next lesson.

Completion Standards: At the completion of this lesson the student's confidence should be building toward that expect of someone with a private pilot certificate.

LESSON 25. DUAL (LONG) NIGHT CROSS-COUNTRY FLIGHT (Ground 1.2/Flight 2.3) – 100 NM Dual Night XC

Objective: This lesson familiarizes the student with the special considerations and problems characteristic flying crosscountry at night. This lesson will provide the last five of the required 10 full stop landings at night.

1. Preflight discussion
   a) Review homework
   b) Instructor's approval of flight log
   c) weather analysis
2. Filing and closing of flight plan
3. VFR navigation
4. Enroute radio communications
5. Unfamiliar airport procedures
6. Second 5 of the 10 full stop landings
7. Postflight discussion
   a) Critique of any unanticipated
   b) Assign homework
8. Preview of next lesson
   a) Night cross-country flying techniques

Next Lesson Homework

Plan Assigned Cross Country Flight

1. Draw route(s) on sectional/TAC chart
2. Pick checkpoints/plot course
3. Plot VOR course (TO/FROM) bearings (if used)
4. Consult performance charts
5. Create initial flight log
6. Obtain NOTAMS, Wx Briefing
7. Consult *Chart Summary (CS)*
8. Morning of flight, use current winds for DR routes
9. Then calculate times, distances, fuel consumed
10. File flight plan

PHAK

Review critical/deficient areas

AFH

Review critical/deficient areas from knowledge exam

Flight Simulator

Practice what you've learned: Fly the long cross-country flight in next lesson.

Completion Standards: At the completion of this lesson the students should feel comfortable with making short night cross-country flights after obtaining his or her private pilot certificate. The student will feel more comfortable with longer night cross-country flights after making the long cross-country fight in the next lesson.

LESSON 26. LONG SOLO CROSS–COUNTRY FLIGHT (Flight 2.5) – 150 NM/Landing More Than 50NM/With 3 Full Stops

Objective: This lesson provides additional cross–country experience and meets the FAR requirement for the long cross country flight. This flight consists of a solo cross-country flight covering a minimum total distance of 150 nautical miles with a full stop landing at three points, including a straight-line segment of more than 50 nautical miles between the takeoff and landing locations

1. Preflight discussion
    a) Review homework
    b) Instructor's approval of flight log
    c) weather analysis
2. Filing and closing of flight plan
3. VFR navigation
4. Enroute radio communications
5. Unfamiliar airport procedures
6. Postflight discussion
    a) Critique of any unanticipated incidents
    b) Assign homework
7. Preview of next lesson
    a) Private pilot check ride preparation
    b) Assign homework

Next Lesson Homework

PHAK

Review critical/deficient areas

AFH

Review critical/deficient areas from knowledge exam

Airmen Certification Standards

Read, VII – Slow Flight and Stalls: C, D
Read IV – Takeoffs, Landings, Go-Arounds: M,N

Flight Simulator

Practice what you've learned: Free flight

Completion Standards: At the completion of this flight, the student should be competent to make VFR cross–country flights upon receiving his or her private pilot certificate.

LESSON 27. DUAL FLIGHT (Ground 1.2/Flight 1.3) – Practice Flight Test Maneuvers

Objective: Active preparation for the private pilot flight test begins with this lesson. The FAA Airman Certificate Standards should be used for guidance on the procedures and standards to be applied to all flight maneuvers.

1. Preflight discussion
    a) Review homework
    b) Review of ACS
    c) Pilot and airworthiness requirements
    d) Decision making: Risk management/situational awareness/judgment
    e) Preflight/passenger briefing
2. Engine start
    a) Use of checklists – Do
    b) Taxiing – Do
    c) Runup and "before takeoff" checklist – Do
3. Slow flight
    a) At minimum controllable airspeed – Do
    b) Slow flight maneuvering (turns, climbs, descents) – Do
4. Stalls
    a) Power-off (full and imminent recovery) – Do
    b) Power-on (full and imminent recovery) – Do
    c) Accelerated stall - Do
    d) Spin awareness – Do
5. Steep turns – 360 degrees – Do
6. Flight by reference to instruments
    a) Straight and level – Do
    b) Level turns to specific headings – Do
    c) Climbs and descents to specific headings – Do
    d) Unusual attitude recovery – Do
    e) VOR navigation by Instruments – Do
7. Navigation
    a) Dead reckoning/pilotage/landfall – Do
    b) VOR course interception, track and triangulation – Do
    c) Diversion – Do
8. Ground reference maneuvers – Do
9. Traffic pattern operations – Do
10. Normal and crosswind takeoffs and landings – Do
11. High performance takeoffs and landings – Do
12. Balked takeoff and landing recoveries
13. Slips to landings/go-arounds – Do
14. Postflight discussion
15. Preview of next lesson
    a. Practice Flight Test Maneuvers Solo
    b. Solo practice as directed
    c. Assign homework

Next Lesson Homework

PHAK
Review critical/deficient areas

AFH
Review critical/deficient areas from knowledge exam

Airmen Certification Standards
Review appropriate sections for checkride

VSL Aviation Podcast
Listen to - Decoding Privat Pilot ACS, Part 1

Flight Simulator
Practice what you've learned: Free flight

Completion Standards: At the end of this lesson, any deficiencies in skill will be identified as needing further practice in preparation for the private pilot checkride.

LESSON 28. SOLO FLIGHT (Flight 1.3) – Practice Flight Test Maneuvers Solo

Objective: This lesson provides solo practice to develop precision in the performance of the flight maneuvers required for a private pilot certificate.

1. Preflight discussion
   a) Practice assigned maneuvers from previous lesson
2. Maneuvers practiced to tolerances specified in ACS
3. Other maneuvers as directed by the instructor
4. Engine start
   a) Use of checklists – Do
   b) Cockpit management – Do
   c) Taxiing – Do
   d) Runup and "before takeoff" checklist – Do
5. Coordination maneuvers
6. Slow flight
   a) At minimum controllable airspeed – Do
   b) Slow flight maneuvering (turns, climbs, descents) – Do
7. Stalls
   a) Power-off (full and imminent recovery) – Do
   b) Power-on (full and imminent recovery) – Do
8. Steep turns – 360 degrees – Do
9. Navigation (local flight)
   a) Dead reckoning/pilotage/landfall – Do
   b) VOR course interception, track and triangulation – Do
10. Ground reference maneuvers – Do
    a) S-turns across a road – Do
    b) Turns around a point – Do
11. Traffic pattern operations – Do
12. Normal and crosswind takeoffs and landings – Do
    a) Short and soft field takeoffs – Do
    b) Shot and soft field landings – Do
    c) Slips to landing – Do
13. Postflight review
14. Preview of next lesson
    a) Practice Flight Test Maneuvers Solo
    b) Solo practice as directed
    c) Assign homework

Next Lesson Homework

PHAK
Review critical/deficient areas

AFH
Review critical/deficient areas from knowledge exam

Airmen Certification Standards
Review appropriate sections for checkride

VSL Aviation Podcast
Listen to - Decoding Privat Pilot ACS, Part 2

Flight Simulator
Practice what you've learned: Free flight

Completion Standards: At the end of this lesson the student's self-evaluation of his or her performance should reflect increased proficiency as measured by the tolerances specified in the ACS.

LESSON 29. DUAL FLIGHT (Ground 1.2/Flight 1.3) – Practice Flight Test Maneuvers

Objective: This lesson consists of the instructor's evaluation of the flight maneuvers practiced during the previous lessons, along with the student's evaluation of his/her performance. The required maneuvers are practiced and any deficiency in performance is corrected.

1. Preflight discussion
   a) Practice assigned maneuvers from previous lesson
2. Maneuvers practiced to tolerances specified in ACS
3. Other maneuvers as directed by the instructor
4. Engine start
   a) Use of checklists – Do
   b) Cockpit management – Do
   c) Taxiing – Do
   d) Runup and "before takeoff" checklist – Do
5. Coordination maneuvers
6. Slow flight minimum controllable airspeed – Do
   a) Slow flight maneuvering (turns, climbs, descents) – Do
7. Stalls
   a) Power-off (full and imminent recovery) – Do
   b) Power-on (full and imminent recovery) – Do
8. Steep turns – 360 degrees – Do
9. Navigation (local flight)
   a) Dead reckoning/pilotage/landfall – Do
   b) VOR course interception, track and triangulation – Do
10. Ground reference maneuvers – Do
    a) S-turns across a road – Do
    b) Turns around a point – Do
11. Traffic pattern operations – Do
12. Normal and crosswind takeoffs and landings – Do
    a) Short and soft field takeoffs – Do
    b) Shot and soft field landings – Do
    c) Slips to landing – Do
13. Postflight review
14. Preview of next lesson
    a) Practice Flight Test Maneuvers Solo
    b) Solo practice as directed
    c) Assign homework

Next Lesson Homework

PHAK
Review critical/deficient areas

AFH
Review critical/deficient areas from knowledge exam

Airmen Certification Standards
Review appropriate sections for checkride

VSL Aviation Podcast
Listen to - Decoding Privat Pilot ACS, Part 3

Flight Simulator
Practice what you've learned: Free flight

Completion Standards: At the completion of this lesson, the student's performance of his "air work" should be at an acceptable level for the private pilot flight test.

LESSON 30. SOLO FLIGHT (Flight 1.3) – Practice Flight Test Maneuvers Solo

Objective: This lesson should include solo practice of ground reference maneuvers, maximum climbs, and traffic pattern procedures. At the completion of this lesson, the student should be satisfied that he/she can perform "air work" to a standard acceptable for a private pilot flight test.

1. Preflight discussion
   a) Practice assigned maneuvers from previous lesson
2. Maneuvers practiced to tolerances specified in ACS
3. Other maneuvers as directed by the instructor
4. Engine start
   a) Use of checklists – Do
   b) Cockpit management – Do
   c) Taxiing – Do
   d) Runup and “before takeoff” checklist – Do
5. Coordination maneuvers
6. Slow flight
   a) At minimum controllable airspeed – Do
   b) Slow flight maneuvering (turns, climbs, descents) – Do
7. Stalls
   a) Power-off (full and imminent recovery) – Do
   b) Power-on (full and imminent recovery) – Do
8. Steep turns – 360 degrees – Do
9. Navigation (local flight)
   c) Dead reckoning/pilotage/landfall – Do
   d) VOR course interception, track and triangulation – Do
10. Ground reference maneuvers – Do
    a) S-turns across a road – Do
    b) Turns around a point – Do
11. Traffic pattern operations – Do
12. Normal and crosswind takeoffs and landings – Do
    a) Short and soft field takeoffs – Do
    b) Shot and soft field landings – Do
    c) Slips to landing – Do
13. Postflight review
14. Preview of next lesson
    a) Practice Flight Test Maneuvers Solo
    b) Solo practice as directed
    c) Assign homework

Next Lesson Homework

PHAK
Review critical/deficient areas

AFH
Review critical/deficient areas from knowledge exam

Airmen Certification Standards
Review appropriate sections for checkride

VSL Aviation Podcast
Listen to - Decoding Privat Pilot ACS, Part 4

Flight Simulator
Practice what you’ve learned: Free flight

Completion Standards: At the end of this lesson the student’s self-evaluation of his or her performance should we within the tolerances specified in the ACS.

LESSON 31. DUAL FLIGHT (Ground 1.2/Flight 1.3) – Practice Flight Test Maneuvers

Objective: During this lesson, the student should practice to achieve the standard of performance required by the private pilot flight test on special types of takeoffs and landings.

1. Preflight discussion
   a) Practice assigned maneuvers from previous lesson
2. Maneuvers practiced to tolerances specified in ACS
3. Other maneuvers as directed by the instructor
4. Engine start
   a) Use of checklists – Do
   b) Cockpit management – Do
   c) Taxiing – Do
   d) Runup and "before takeoff" checklist – Do
5. Coordination maneuvers
6. Slow flight
   a) At minimum controllable airspeed – Do
   a) Slow flight maneuvering (turns, climbs, descents) – Do
7. Stalls
   a) Power-off (full and imminent recovery) – Do
   b) Power-on (full and imminent recovery) – Do
8. Steep turns – 360 degrees – Do
9. Navigation (local flight)
   a) Dead reckoning/pilotage/landfall – Do
   b) VOR course interception, track and triangulation – Do
10. Ground reference maneuvers – Do
    a) S-turns across a road – Do
    b) Turns around a point – Do
11. Traffic pattern operations – Do
12. Normal and crosswind takeoffs and landings – Do
    a) Short and soft field takeoffs – Do
    b) Shot and soft field landings – Do
    c) Slips to landing – Do
13. Postflight review
14. Logbook Check and IACRA
15. Preview of next lesson
    a) Practice Flight Test Maneuvers Solo
    b) Solo practice as directed
    c) Assign homework

Next Lesson Homework

PHAK
Review critical/deficient areas

AFH
Review critical/deficient areas from knowledge exam

Airmen Certification Standards
Review appropriate sections for checkride

Flight Simulator
Practice what you've learned: Free flight

Completion Standards: At the completion of this lesson, the student's performance of his "air work" should be at an acceptable level for the private pilot flight test.

LESSON 32. SIMULATED PRACTICAL FLIGHT TEST (Ground 1.2/Flight 1.3)

Objective: This lesson should consist of the private pilot flight test conducted by the instructor exactly as such tests are conducted by inspectors and examiners. The student should be able to perform all required procedures and maneuvers in accordance with the Private Pilot Flight Test Guide.

1. Preflight discussion – Phase I of the private pilot flight test.
2. Private Pilot Flight Test – Evaluated by the flight instructor.

Postflight discussion – Critique of overall performance.