LESSON 1

INTRODUCTORY FIGHT

Dual – ground: 1.0, flight 0.5

Objective: Introduce student to preflight inspection, flight in a light aircraft, and the four fundamentals of aircraft control

Discussion topics:
1) fitness for flight (I'M SAFE)
2) positive exchange of flight controls
3) required certificates and documents for pilot and aircraft
4) airplane logbooks and required inspections
5) aircraft fuel system
6) aircraft electrical system
7) location of emergency equipment
8) use of checklists
9) weather briefing basics

Introduce:
1) starting procedures
2) radio communications
3) taxiing
4) before takeoff check
5) normal and crosswind takeoff and climb
6) effect and use of primary flight controls and trim
7) collision avoidance procedures
8) parking and securing aircraft

Completion standards:
1) Display understanding of aircraft systems, use of checklists, preflight, and postflight procedures
2) Demonstrate understanding of aircraft control

NEXT LESSON: #2, Four fundamentals of flight

Suggested student homework assignments:
Read Chapter 3 of the Airplane Flying Handbook
LESSON 2

FOUR FUNDAMENTALS OF FLIGHT

Dual – ground: 0.5, flight: 1.0

Objective: Introduce student to aeronautical decision-making, takeoff, straight and level flight, turns, and landings

Discussion topics:
1) Aeronautical decision making
2) weather factors
3) aircraft airworthiness

Review:
1) engine starting
2) use of checklists
3) before takeoff check
4) visual scanning and collision avoidance
5) parking and securing aircraft

Introduce:
1) crosswind taxi
2) normal takeoff
3) straight and level flight to include use of trim
4) aircraft configuration changes
5) speeds associated with use of flaps
6) normal approach and landing

Completion standards:
1) smooth engine start (no excessive engaging of starter)
2) student can explain run-up procedures using checklist
3) increased proficiency with preflight procedures and ground operations

NEXT LESSON: #3, Integrated flight instruction

Suggested student homework assignments:

Read Chapter 3, Page 3 of the Airplane Flying Handbook
LESSON 3

INTEGRATED FLIGHT INSTRUCTION

Dual – ground: 0.3, flight: 1.0

Objective: Develop student’s ability to apply coordinated control inputs and introduce the relationship between attitude and aircraft instruments

Discussion topics:
1) collision-avoidance procedures
2) flight instruments and their purpose
3) required medical and pilot documents

Review:
1) Taxiing techniques
2) Straight and level flight
3) Turns
4) Climbs and descents
3) Normal approach and landing

Introduce:
1) crosswind takeoff
2) constant airspeed climb
3) constant airspeed descent
4) turns to headings
5) traffic pattern entry and procedure
6) crosswind landings

Completion standards:
1) Ability to taxi in varying conditions without assistance
2) Student understands the concept of coordinated flight and can fly the aircraft in a coordinated matter with minimal instructor assistance
3) Student can conduct a stabilized approach and landing with instructor’s assistance

NEXT LESSON: #4, Slow flight and stall entries and recoveries

Suggested student homework assignment:

Read Chapter 3 of the Pilot’s Handbook of Aeronautical Knowledge: Aerodynamics of Flight
LESSON 4
SLOW FLIGHT AND STALL RECOVERIES

Dual – ground: 0.5, flight: 1.0

Objective: Introduce student to slow flight and stall characteristics.

Discussion topics:
1) fundamentals of slow flight and stalls
2) spin awareness

Review:
1) constant airspeed climb and descent
2) turns to headings
3) practice area familiarization

Introduce:
1) flight at various airspeeds from cruise to slow flight
2) maneuvering during slow flight emphasizing correct use of rudder to negate increased adverse yaw at slow airspeeds
3) power-off stalls and recovery
4) power-on stalls and recovery

Completion standards:
1) Demonstration of understanding of stall and recovery concept
2) Demonstrates understanding of slow-flight concept through flight at minimum controllable airspeed
3) Altitude, heading, and airspeed at or near PTS standards

NEXT LESSON: #5, Emergency procedures

Suggested student homework assignments:

2) Review emergency procedures and checklists, Pilot’s Operating Handbook
LESSON 5
EMERGENCY PROCEDURES

Dual – ground: 0.5, flight: 1.0

Objective: To gain an understanding of emergency operations and to increase understanding of slow flight and stall recovery

Discussion topics:
1) types of possible emergencies
2) use of all available resources in an emergency situation

Review:
1) human factors and symptoms
2) maneuvering during slow flight
3) stall recovery

Introduce:
1) systems and equipment malfunctions
2) emergency procedures using both memory items and use of checklists
3) emergency descent
4) emergency approach and landing

Completion standards:
1) Display increased proficiency with control of airplane
2) Perform unassisted takeoffs
3) Demonstrate basic understanding of emergency operations

NEXT LESSON: #6, Steep turns and ground reference maneuvers

Suggested student homework assignments:


2) Read the November 2001 AOPA Flight Training article “Training Topics: Checkride” http://www.aopa.org/members/ftmag/article.cfm?article=4187
LESSON 6
STEEP TURNS AND GROUND REFERENCE MANEUVERS

Dual – ground: 0.5, flight: 1.0

Objective: Introduce student to performance maneuvers

Discussion topics:
1) steep turns
2) fundamentals of ground reference maneuvers
3) wake turbulence avoidance

Review:
1) maneuvering during slow flight
2) emergency procedures

Introduce:
1) steep turns
2) rectangular course
3) S-turns
4) turns around a point

Completion standards
1) Ability to maintain specific ground track during ground-reference maneuvers
2) Altitude, airspeed, and heading within PTS standards during straight and level flight

NEXT LESSON: #7, Maneuvers review

Suggested student homework assignment:
1) Review previously assigned reading, research the answers to any questions, and be prepared to discuss them during the preflight ground briefing of the review lesson.

2) Diagram ground reference maneuvers showing wind corrections at different positions during the maneuvers.
LESSON 7
MANEUVERS REVIEW

Dual—ground: 0.5, flight: 1.2, simulated instrument: 0.3

Objective: Review material learned in previous lessons and increase comfort level with the airplane in various flight regimes

Discussion topics:
1) Pilot-in-command (PIC) responsibility and authority
2) Elements of basic instrument maneuvers

Review:
1) Normal and crosswind takeoffs and landings
2) Stall recoveries
3) Steep turns
4) Maneuvering during slow flight
5) Ground reference maneuvers
6) Emergency procedures

Introduce:
1) Flight by reference to instruments

Completion standards:
1) Demonstrate increased proficiency during maneuvers
2) Altitude, airspeed, and heading within PTS standards during straight and level flight

NEXT LESSON: #8, Traffic pattern review

Suggested student homework assignments:
1) Read the ASF Operations at Non-towered Airports Safety Advisor (http://www.aopa.org/asf/publications/sa08.pdf) or Operations at Towered Airports Safety Advisor (http://www.aopa.org/asf/publications/sa07.pdf), as appropriate to the airport where the lesson will take place.

**LESSON 8**

**TRAFFIC PATTERN REVIEW**

Dual – ground: 0.5, flight: 1.0

**Objective:** Review and perfect traffic pattern operations, practice takeoffs and landings

**Discussion topics:**
1) traffic pattern operations and radio phraseology

**Review:**
1) normal and crosswind takeoff and climb
2) traffic pattern operations
3) normal and crosswind approach and landing

**Introduce:**
1) traffic pattern engine-out procedures
2) controlled/uncontrolled field operations

**Completion standards:**
1) Ability to perform takeoffs and landings with no instructor input
2) Stays within traffic pattern and maintains adequate ground track

**NEXT LESSON: #9, Presolo Review**

**Suggested student homework assignments:**

1) Read Federal Aviation Regulations on student pilot solo requirements.
2) Airport/Facilities Directory data on airport at which solo will occur.
3) Practice getting weather briefings and evaluating suitability of conditions.
LESSON 9
PRESOLO REVIEW

Dual – ground: 1.0, flight: 1.0, simulated instrument: 0.3

Objective: Determine that the student is ready for the first solo flight

Discussion topics:
1) present presolo quiz and correct to 100%
2) weak areas on quiz

Review:
1) operation of systems
2) preflight inspection
3) engine starting
4) radio communications
5) normal and crosswind taxiing
6) before-takeoff check
7) normal and crosswind takeoff
8) climbing and descending turns
9) straight-and-level flight
10) turns to headings
11) stalls and recovery
12) spin awareness
13) steep turns
14) ground reference maneuvers
15) systems and equipment malfunctions
16) emergency procedures
17) traffic patterns
18) forward slips to landing
19) go-arounds from rejected landings
20) normal and crosswind approach and landing
21) PIC responsibility and authority
22) flight by reference to instruments

Introduce:
1) flight at slow airspeeds with realistic distractions

Completion standards:
1) Presolo exam completed with 80%
2) Demonstrate readiness for solo flight in the traffic pattern
3) Indicates good understanding of local airport and airspace rules, as well as systems and equipment malfunctions
4) Demonstrate mature PIC decision-making and authority

NEXT LESSON: #10, First solo
Suggested student homework assignments: None
LESSON 10
FIRST SOLO

Dual – ground: 0.3, flight: 0.5
Solo – 0.5

Objective: Student demonstrates control of airplane without assistance of on-board instructor

Discussion topics:
1) student questions
2) endorse logbook and Student Pilot Certificate

Review:
1) traffic pattern communications and operations
2) traffic pattern emergency procedures

Introduce (all solo):
1) radio communications
2) taxiing
3) before-takeoff check
4) normal takeoffs and climbs
5) traffic patterns
6) normal approaches and landings
7) after-landing procedures
8) parking and securing

Completion standards:
1) Student’s ability to conduct a safe solo flight in the traffic pattern. At no time will the safety of flight be in question.

NEXT LESSON: #11, Stage check

Suggested student homework assignments: None
LESSON 11

STAGE CHECK

Dual – ground: 0.3, flight: 1.5, simulated instrument: 0.3

**Objective:** Determine that the student can safely depart the traffic pattern, conduct solo flights in the practice area, and return to the airport and land with no instructor assistance.

**Discussion topics:**
1) boundaries of local practice area
2) solo dispatch criteria; limitations placed in student’s logbook

**Review:**
1) airworthiness criteria
2) human factors checklist
3) preflight procedures
4) runway incursion avoidance
5) wake turbulence avoidance
6) collision avoidance
7) normal and crosswind takeoff and climb
8) maneuvering during slow flight
9) power-off stall and recovery
10) power-on stall and recovery
11) systems and equipment malfunctions
12) en route emergency procedures
13) emergency approach and landing
14) traffic patterns
15) normal and crosswind approach and landings
16) go-around
17) postflight procedures
18) forward slips
19) flight by reference to instruments

**Completion standards:**
1) Instructor determines if student is able to competently conduct solo flights in the practice area
2) Altitude within 150 feet, airspeed within 10 knots, heading within 15 degrees
3) Demonstrate ability to depart airport, find local practice area, and return to airport with no instructor assistance

**NEXT LESSON:** #12, Solo practice

**Suggested student homework assignment:**
1) Review POH
2) Research in AIM any flight operations questions that arose during solo.
LESSON 12
SOLO PRACTICE

Dual – ground: 0.5
Solo – 1.0

Objective: To review flight maneuvers and allow student to feel comfortable when soloing the airplane

Discussion topics:
1) dispatch procedures
2) weight and balance computations
3) performance computations
4) aeronautical decision making
5) PIC authority and responsibility

Review (solo):
1) normal and crosswind takeoff and climb
2) radio communications
3) traffic patterns
4) maneuvering during slow flight
5) steep turns
6) power-off stall and recovery
7) ground reference maneuvers
8) normal and crosswind approach and landing

Completion standards:
1) Successful flight to and return from practice area (otherwise, he gets lost?)
2) Altitude, airspeed, heading within or approaching PTS standards

NEXT LESSON: #13, Performance takeoffs and landings.

Suggested student homework assignments:
1) Read Chapter 5 and Chapter 8 passages on performance takeoffs and performance landings in the Airplane Flying Handbook

2) Review POH procedures for short and soft-field operations.

3) Begin becoming familiar with the task’s practical test requirements in the Practical Test Standards http://download.aopa.org/epilot/2005/pts_pvta.pdf
## LESSON 13

### PERFORMANCE TAKEOFFS AND LANDINGS

**Dual – ground: 0.5, flight: 1.0**

**Objective:** Introduce student to varying runway conditions and develop skill during takeoff and landing

**Discussion topics:**
1) performance computation
2) elements related to performance takeoffs and landings

**Review:**
1. flight at slow airspeeds with realistic distractions
2. recognition and recovery from low-level stalls forward slips

**Introduce:**
1) short-field takeoff and climb
2) soft-field takeoff and climb
3) short-field approach and landing
4) soft-field approach and landing

**Completion standards:**
1) Student understanding of the need to use performance takeoffs and landings
2) Student demonstration of the correct procedure to be used under simulated or actual conditions

### NEXT LESSON: #14, Solo practice

**Suggested student homework assignments:**


LESSON 14
SOLO PRACTICE

Dual – ground: 0.2
Solo – 1.0

Objective: To increase student proficiency with solo takeoffs and landings

Discussion topics:
1) solo traffic pattern procedures

Review:
1) radio communications
2) taxiing
3) before-takeoff check
4) normal takeoff and climb
5) traffic patterns
6) normal approach and landing
7) after-landing procedures
8) parking and securing

Completion standards:
1) Use of correct takeoff techniques. Rotation speed within 5 knots
2) Stabilized approach to landing. Final approach speed within 5 knots
3) Smooth landing within 300 feet of desired touchdown location
4) Judgment—executes go-around if necessary

NEXT LESSON: #15, Navigation

Suggested student homework assignments:
1) Study Chapter 14 of the Pilot’s Handbook of Aeronautical Knowledge

2) Read the May 1997 AOPA Pilot article Navigation Necessities
LESSON 15
NAVIGATION

Dual – ground: 0.5, flight: 1.5, simulated instrument: 0.5

Objective: Introduction to use of aircraft’s navigation systems

Discussion topics:
1) use of VOR system to include identification and tracking VOR signals
2) use of all available resources in the aircraft

Review:
1) performance takeoffs and landings
2) flight by reference to instruments

Introduce:
1) VOR orientation and tracking
2) ADF orientation and homing
3) GPS orientation and tracking
4) emergency descents using radio aids or radar vectors
5) use of airplane navigation systems in emergency situations

Completion standards:
1) Demonstrate basic understanding of use of aircraft navigation systems

NEXT LESSON: #16, Introduction to cross-country flying

Suggested student homework assignments:

1) Read the November 7, 2003, Training Tips article in the AOPA ePilot Student Newsletter: Checking that Checkpoint

2) Study cruise performance and fuel consumption calculations as given in the performance charts in your Pilot’s Operating Handbook.

   http://www.aopa.org/members/files/aim/chapter_3.html
LESSON 16
INTRODUCTION TO CROSS-COUNTRY FLIGHT

Dual—ground: 1.0, flight: 2.0, simulated instrument: 0.5

Objective: Introduction to cross-country flying procedures to include flight planning, pilotage, and dead reckoning; diversion to an alternate airport; and lost procedures

Discussion topics:
1) Use of flight publications
2) Route selection and flight planning
3) Airspace rules
4) Weather information
5) Fuel requirements
6) Performance limitations
7) Navigation log
8) Opening and closing flight plans
9) Weight and balance computation
10) Cockpit management
11) Aeronautical decision making

Review:
1) VOR orientation and tracking
2) ADF orientation and homing
3) GPS orientation and tracking
4) Emergency procedures
5) Flight by reference to instruments

Introduce:
1) Setting cruise power and fuel mixture
2) Estimating in-flight visibility
3) Computing ground-speed, ETA, and fuel consumption
4) Obtaining in-flight weather information
5) Operations at unfamiliar airports
6) Position fix by navigation facilities
7) Use of Approach Control and Departure Control

Completion standards:
1) Demonstrate the skill to control the aircraft during a cross-country flight and make necessary corrections to ensure proper course
2) Arrive at ETA within 3 minutes (recalculating ground-speed based on changed winds, if necessary)
NEXT LESSON: #17, Introduction to night flight

Suggested student homework assignments:

1) Read “Flying’s Forgotten 5 Percent,” an article on night flying from the September 2004 AOPA Flight Training available online
   http://www.aopa.org/members/ftmag/article.cfm?article=5079

2) Review ASF Safety Hot Spot: Flying Night VFR
   http://www.aopa.org/asf/hotspot/night_vfr.html
LESSON 17

INTRODUCTION TO NIGHT FLIGHT

Dual – ground: 1.0, flight: 1.0

Objective: Introduce the student to the basics of and preparations for flying at night.

Discussion topics:
1) preparation techniques for night flying
2) visual illusions
3) night scanning techniques and collision avoidance
4) night flying regulations
5) airport lighting

Introduce (night flight):
1) normal and crosswind takeoff and climb
2) power-off stalls and recovery
3) power-on stalls and recovery
4) steep turns
5) maneuvering during slow flight
6) VFR navigation
7) normal and crosswind approach and landing
8) emergency procedures

Completion standards:
1) Complete five takeoffs and landings at night under varying conditions (landing light off, runway lights off)
2) Demonstration of ability to return to airport using all available resources
3) Altitude within 150 feet, airspeed within 10 knots, heading within 10 degrees

NEXT LESSON: #18, Night cross-country flying

Suggested student homework assignments:

2) Familiarization with the night flying requirements for private pilots in the Federal Aviation Regulations http://www.aopa.org/members/files/fars/far-61.html#14:2.0.1.1.2.5.1.6
LESSON 18
NIGHT CROSS-COUNTRY FLIGHT

Dual: - ground: 1.0, flight: 2.0, simulated instrument: 0.5

**Objective:** Introduce student to basics of navigation at night, and help to prepare the student for solo cross-country flight

**Discussion topics:**
1) sectional charts
2) flight publications
3) route selection and basic navigation procedures
4) weather information
5) fuel and performance requirements
6) weight and balance
7) navigation log
8) FAA flight plan
9) cockpit management
10) aeronautical decision making
11) aeromedical factors
12) night VFR fuel requirements

**Review:**
1) emergency operations
2) lost procedures
3) night operations

**Completion standards:**
1) Demonstrate ability to safely perform a cross-country flight as the sole occupant of the airplane
2) Demonstrate complete flight planning skills
3) Altitude within 100 feet, airspeed within 10 knots, heading within 10 degrees

**NEXT LESSON:** #19, Solo cross-country

**Suggested student homework assignments:**


3) Practice obtaining weather briefings and making go/no-go decisions based on the information provided
LESSON 19
SOLO CROSS-COUNTRY

Dual – ground: 0.5
Solo – 2.5

Objective: Use of previously gained knowledge to complete a solo cross-country flight

Discussion topics:
1) solo cross-country briefing
2) required documents and endorsements
3) determining performance and weight and balance
4) basic VFR weather minimums
5) airspace rules
6) en route communications
7) ATC services
8) En route weather information
9) lost procedures
10) emergency operations
11) diversions
12) ATC light signals
13) aeronautical decision making
14) cockpit management

Review:
1) computing ground-speed, ETA, and fuel requirements
2) use of dead reckoning
3) VOR interception and tracking
4) use of navigation log
5) filing and opening and closing FAA flight plan

Completion standards:
1) Demonstrate accurate planning and conduct of a solo cross-country flight using the three common methods of navigation

NEXT LESSON: #20, Long solo cross-country

Suggested student homework assignments:
3) Review the source materials for which links are given in the article listed above.
LONG-DISTANCE SOLO CROSS-COUNTRY

Dual – ground: 0.5
Solo – 3.0

Objective: Further develop solo cross-country flying skills

Discussion topics:
15) solo cross-country briefing
16) required documents and endorsements
17) determining performance and weight and balance
18) basic VFR weather minimums
19) airspace rules
20) en route communications
21) ATC services
22) En route weather information
23) lost procedures
24) emergency operations
25) diversions
26) aeronautical decision making

Review:
6) computing ground-speed, ETA, and fuel requirements
7) use of dead-reckoning
8) VOR interception and tracking
9) use of navigation log
10) filing and opening and closing FAA flight plan

Completion standards:
1) Successful flight in accordance with FAR 61.109(a)(5)(ii)

NEXT LESSON: #21, Flight test prep

Suggested student homework assignments:
1) Review Practical Test Standards [http://www.aopa.org/members/files/flttrain/pts_pvta.pdf](http://www.aopa.org/members/files/flttrain/pts_pvta.pdf) and be sure that maneuvers will be practiced to tolerances equal to or exceeding the requirements, and to become familiar with the flight-testing process.

2) Use the valuable resources of the AOPA Flight Training web site’s Flight Test Prep page [http://flighttraining.aopa.org/student_pilot/flight_test/](http://flighttraining.aopa.org/student_pilot/flight_test/) to answer frequently asked questions and sharpen your knowledge.
**LESSON 21**

**PRACTICAL TEST PREPARATION**

Dual – ground: 0.3, flight: 1.5, simulated instrument: 0.5

**Objective:** Determine proficiency level

Discussion topics:
1) applicable performance criteria
2) applicable rules

**Review:**
1) minimum equipment list
2) cross-country flight planning
3) airplane logbook entries
4) preflight inspection
5) cockpit management
6) engine starting
7) radio communications
8) airport and runway markings and lighting
9) normal and crosswind taxiing
10) before-takeoff check
11) short-field takeoff and climb
12) soft-field takeoff and climb
13) navigation procedures
14) diversion procedures
15) steep turns
16) maneuvering during slow flight
17) stalls and recovery
18) emergency procedures
19) flight by reference to instruments
20) pilot in command authority and responsibility
21) cockpit resource management
22) aeronautical decision making
23) traffic patterns
24) short-field approach and landing
25) soft-field approach and landing
26) forward slip to landing
27) go-around
28) after-landing procedures
29) post-flight procedures

**Completion standards:**
1) Demonstrates mastery of designated maneuvers and knowledge items
2) Altitude, heading, and airspeed meet or exceed PTS standards
NEXT LESSON: #22, Solo test prep

Suggested student homework assignments:

1) Verify that aeronautical experience requirements in the federal aviation regulations [http://flighttraining.aopa.org/student_pilot/flight_test/](http://flighttraining.aopa.org/student_pilot/flight_test/) have been, or will be, met for the desired pilot certificate at the end of the training program.

2) Review operating speeds for your aircraft, systems information and emergency procedures in the Pilot’s Operating handbook.
LESSON 22
SOLO PRACTICAL TEST PREPARATION

Dual – ground: 0.2
Solo – 2.5

Objective: Further development of flight skills through individual practice

Discussion topics:
1) maneuvers and procedures in preparation for practical test

Review:
1) short-field takeoffs and landings
2) soft-field takeoffs and landings
3) steep turns
4) maneuvering during slow flight
5) stalls and recovery
6) forward slip to landing
7) radio communications
8) ground reference maneuvers

Completion standards:
1) Ability to perform required maneuvers to standards higher than the PTS