

# Sport Pilot Training Course Outline

Sebring Flight Academy, Sebring, FL.

LANDING DOCTOR  
APPROVED  
VERSION 1.1



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## COURSE INFORMATION

### Objectives

The objective of this course is to provide our students with the highest degree of skill and knowledge possible to meet the FAA requirements for a Sport Pilot Certificate. Additionally, the Academy strives to meet the requirements laid out by the Landing Doctor as well, in order to produce the safest, most qualified pilots possible. The Sport Pilot TCO exceeds the requirements for the Sport Pilot Certificate in an airplane category, single engine land class rating.

### Completion Standards

Students must complete, to Landing Doctor Standards, all oral, written, and practical tests and examinations. Accurate records must be maintained as to the completion of these standards, less the student risks having to repeat certain sections of the TCO or check ride. Once satisfactory completion of all standards has been achieved, the flight instructor may sign off on the student to take their final check ride. An outline of the Landing Doctor Standards is appended to this TCO for the student and instructors' reference.

## GROUND INSTRUCTION

### Objectives

The ground instruction of this course is intended to supplement and fill in the gaps that the student may require after completing their written exam. Note however that the student is allowed to begin flight training before their written exam has been completed. The Academy's objectives are to provide the necessary aeronautical knowledge require to conduct all flights not only safely, but also comfortably.

### Completion Standards

Students must complete, to Landing Doctor Standards, all sections outlined within this TCO through oral and written examinations, or any other means deemed appropriate by the instructor.

## GROUND LESSON – I

### Briefing

**Required:** Students must provide proof of Citizenship, as outlined by the TSA Proof of Citizenship requirements before beginning any flight lessons.

### Objectives

The purpose of this lesson is to introduce the student to the Sport Pilot certification process offered at the Academy, as well as review all necessary documentation requirements, safety requirements, and Landing Doctor principles that will be utilized throughout their training. Instructors will guide the student through each of these areas as necessary, as well as through a description of aeromedical factors and personal minima.

### Completion Standards

The lesson is considered complete when the student is able to complete the following, WITH instructor guidance:

- Understand the basic outline of the Sport Pilot Certification process, as outlined by FAR61 Subpart J (61.301 – 61.327), as well as the standards expected by the Landing Doctor
- Understand the instructors' role in teaching and guiding the student towards their ultimate goal here at the Academy
- Demonstrate an understanding of required documentation, safety requirements, aeromedical factors, and personal minima

### Content

1. Explanation of Sport Pilot certification and this TCO in relation to fulfilling the requirements of FAR61 Subpart J
2. The Landing Doctor Code
  - a. Fly the Plane
  - b. Personal Limitation Checklist
  - c. Master and Commander
  - d. The Escape Plan
3. Review of TSA requirements regarding proof of citizenship
4. Review of mutual expectations regarding flight instruction, punctuality, scheduling, cancelations, and any further info that either the student or instructor deems necessary to be conducive to a strong and healthy partnership
5. Review of required documentation for flight training and airworthiness
6. Weight and balance calculations
7. Review of aeromedical factors
8. Review of personal minima regarding IMSAFE

### Assignment

1. Checklists
2. AOI Review
3. Four fundamentals of flight

## FLIGHT LESSON – 2

### Briefing

### Objectives

The purpose of this lesson is to introduce preflight procedures, use of checklists, basic flight controls, and to demonstrate the four fundamentals of flight.

### Completion Standards

The lesson is considered complete when the student is able to complete the following, WITH instructor guidance:

- Conduct proper preflight checklists and demonstrate a basic understanding of control surfaces
- Conduct proper in-flight checklists
- Demonstrate a proper understanding of the four fundamentals of flight and how they can be controlled with primary flight controls

### Content

1. Aircraft preflight inspection procedures
2. Special emphasis areas
  - a. Checklist usage
  - b. Damage inspection
  - c. Required documents and their location
  - d. Radio and navigation antennas
3. Taxiing
4. Run-up
5. Normal takeoff
6. Basic maneuvers
  - a. Climbs
  - b. Medium bank turns
  - c. Descents
  - d. Turn coordination
7. Traffic pattern entry
8. Stabilized approach
9. Go-around
10. Normal Landing

### Debrief

Critique the general performance of the student, preview the next lesson, and assign any extra material deemed necessary.

### Assignment

1. Checklists
2. Ground Proximity Awareness

## FLIGHT LESSON – 3

### Briefing

### Objectives

The purpose of this lesson is to practice taxiing and run-up procedures, as well as to review the basic fundamentals of flight, maneuvers, slow flight, and introduce basic ground proximity procedures.

### Completion Standards

The lesson is considered complete when the student is able to complete the following, WITH instructor guidance:

- Taxi the aircraft on centerline with proper crosswind correction
- Perform the runup and taking proper note of limitations of RPM drops
- Maintain straight and level flight and medium bank turns
- Perform normal climbs and descents
- Perform basic slow flight maneuvers
- Maintain 10' above the runway and track centerline

### Content

1. Aircraft preflight procedures
2. Taxiing and runup
3. Special emphasis areas
  - a. Maintaining centerline
  - b. Crosswind correction while taxiing
  - c. RPM drops and limits
4. Proper use of radios for two-way communication at an uncontrolled airport
5. Normal takeoff
6. Maintaining straight and level flight with reference to the horizon
7. Medium bank turns
8. Slow flight entry and maneuvers
9. Normal climbs and descents, with proper power adjustments
10. Traffic pattern procedures
11. Low approach, maintaining roughly 10' above the runway
12. Tracking centerline over the runway
13. Go-around
14. Normal landing

### Debrief

Critique the general student performance, making note of any areas that may require further guidance throughout their training. Preview the next lesson, and assign any extra material deemed necessary.

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## **Assignment**

1. Review soft field, short field, and ground proximity procedures
2. Traffic pattern worksheet



## GROUND LESSON - 4

### Briefing

### Objectives

The purpose of this lesson is to review the different types of takeoff and landings and their procedures, as well as to introduce a reduced speed pattern, and how it can benefit a pilot that has become task saturated, as well as electronic trim.

### Completion Standards

The lesson is considered complete when the student is able to complete the following, WITH instructor guidance:

- Describe the procedures for a normal takeoff and landing
- Describe the procedures for a short field takeoff and landing
- Describe the procedures for a soft field takeoff and landing
- Describe the procedures and precautions of a reduced speed pattern
- Describe proper radio call procedures, at both controlled and uncontrolled airports
- Describe the procedures and safe execution of a go-around
- Describe a stabilized approach
- Describe proper usage of trim

### Content

1. Normal takeoff and landing procedures and execution
2. Short field takeoff and landing procedures and execution
3. Soft field takeoff and landing procedures and execution
4. Reduced speed pattern
5. Special emphasis areas
  - a. Using reduced speed patterns when becoming task saturated
  - b. Using reduced speed patterns to maintain proper separation
  - c. Using reduced speed patterns to avoid an extended downwind and thus extended final
  - d. The dangers of a reduced speed pattern
  - e. Proper bank angles when flying a reduced speed pattern
  - f. Using trim to alleviate fatigue and enhance controllability of the aircraft
6. When and where to make radio calls
7. Go-around procedures
8. Stabilized approach criteria
9. Special emphasis areas
  - a. Identifying an unstabilized approach
10. Traffic pattern worksheet

### Debrief

Critique the general performance of the student, focusing on areas of weakness in regards to knowledge of procedures and execution. Preview the next lesson and assign and extra material deemed necessary.

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## **Assignment**

1. Review takeoff and landing procedures
2. Review slow flight and reduced speed patterns

## FLIGHT LESSON – 5

### Briefing

### Objectives

The purpose of this lesson is to introduce the different types of landings, and to practice pattern work, focusing on proper radio calls, ground proximity awareness, reduced speed patterns, and developing a sight picture.

### Completion Standards

The lesson is considered complete when the student is able to complete the following, WITH instructor guidance:

- Perform proper radio calls
- Perform a soft field takeoff and landing
- Perform a short field takeoff and landing
- Perform a normal takeoff and landing
- Fly a reduced speed pattern from downwind
- Remain on centerline, while maintaining 10' above the runway
- Conduct a proper go-around
- Adhere to the established stabilized approach criteria
- Utilize electron trim effectively

The lesson is considered complete when the student is able to complete the following, WITH LITTLE instructor guidance:

- Conduct a proper preflight
- Taxi on centerline with crosswind correction
- Conduct a runup, making note of RPM drops and their limits

### Content

1. Aircraft preflight procedures
2. Taxiing and runup
3. Normal takeoff
4. Special emphasis areas
  - a. Develop a sight picture with the horizon
  - b. Flap settings
  - c. Power settings
  - d. Utilizing trim to alleviate fatigue and enhance aircraft controllability
5. Short field takeoff
6. Soft field takeoff
7. Reduced speed pattern
8. Low approach, maintaining 10' above the ground
9. Short field landing
10. Soft field landing
11. Go-around
12. Normal landing

## Debrief

Critique the general performance of the student, focusing on areas of safety when flying in the pattern and conducting landings. Preview the next lesson and assign any extra material deemed necessary.

## Assignment

1. Review emergency landing checklist
2. Review power-off 180
3. Review side slips

## FLIGHT LESSON – 6

### Briefing

### Objectives

The purpose of this lesson is to refine takeoff and landing skills, as well as to introduce emergency landing procedures and slip to landings.

### Completion Standards

The lesson is considered complete when the student is able to complete the following, WITH instructor guidance:

- Perform proper radio calls
- Perform normal takeoff and landings
- Perform short field takeoff and landings
- Perform soft field takeoff and landings
- Perform a power-off 180 approach to landing
- Perform a side-slip approach to landing

The lesson is considered complete when the student is able to complete the following, WITH LITTLE instructor guidance:

- Perform all checklists and procedures
- Remain on centerline while maintaining 10' above the runway
- Identify and adhere to proper stabilized approach criteria
- Fly a reduced speed pattern
- Perform a go-around
- Perform proper positive exchange of controls
- Utilize electronic trim effectively

### Content

1. Preflight checklist
2. Taxiing and runup
3. Normal takeoff
4. Special emphasis areas
  - a. Crosswind correction
  - b. Emergency checklist and memorization items
  - c. Side-slip inputs
5. Short field takeoff
6. Soft field takeoff
7. Reduced speed pattern
8. Side-slip to low approach, maintaining 10' above the runway while tracking on centerline
9. Go-around
10. Short field landing
11. Soft field landing
12. Power-off 180

## Debrief

Critique the general performance of the student and review emergency preparedness with a focus on maintaining positive control of the aircraft first and foremost. Preview the next lesson and assign any extra material deemed necessary.

## Assignment

1. Review usage and operation of trim within an aircraft
2. Review rectangular course maneuver
3. Review crosswind correction techniques
4. Review GPA

## FLIGHT LESSON – 7

### Briefing

### Objectives

The purpose of this lesson is to review any pattern work deemed necessary by the instructor, and provide further training on flying within the pattern. This flight will also introduce crosswind landings and further GPA training.

### Completion Standards

The lesson is considered complete when the student is able to complete the following, WITH instructor guidance:

- Perform all landings with correct crosswind technique

The lesson is considered complete when the student is able to complete the following, WITH LITTLE instructor guidance:

- Perform normal takeoff and landings
- Perform short field takeoff and landings
- Perform soft field takeoff and landings
- Fly a reduced speed pattern from downwind
- Perform a go-around
- Make all radio calls
- Utilize trim to assist in all phases of flight
- Maintain 10' above the runway while tracking centerline
- Identify and adhere to proper stabilized approach criteria

### Content

1. Preflight, taxi, and runup checklists
2. Normal takeoff
3. Special emphasis areas
  - a. Utilizing trim to reduce pilot strain
4. Short field takeoff
5. Soft field takeoff
6. Normal landing w/ crosswind
7. Short field landing w/ crosswind
8. Soft field landing w/ crosswind
9. Reduced speed pattern
10. Low approach while using trim to maintain 10' above the runway and tracking centerline
11. Go-around
12. Fly a full pattern/rectangular course with proper crosswind correction

# SPORT PILOT

## Debrief

Critique the general performance of the student, pointing out areas of weakness while performing takeoff and landings, and reinforcing the use of trim to reduce pilot workload throughout the flight. Preview the next lesson and assign any extra material deemed necessary.

## Assignment

1. Review the basic principles of aerodynamics
2. Review the 4 phases of a spin
3. Review stall recovery procedures
4. Review slow flight maneuvers



## GROUND LESSON – 8

### Briefing

### Objectives

The purpose of this lesson is to introduce the student to the concept of spins, stalls, and how slow flight relates to them. This lesson is also intended to discuss the dangers of spins, where they are likely to occur, proper avoidance and recovery, and to discuss the unique flight characteristics of slow flight.

### Completion Standards

The lesson is considered complete when the student is able to complete the following, WITH LITTLE instructor guidance:

- Identify the four phases of a spin
- Outline the proper recovery from a spin
- Describe the setup, execution, and recovery of both power on and power-off stalls
- Identify the changes of in-flight characteristics of slow flight as compared to cruise
- Identify the first signs of a stall
- Identify where a stall is most likely to occur
- Demonstrate adequate understanding of the dangers of a stall and spin, and why extra care should be taken to avoid them

### Content

1. Discuss what is a spin, and describe the four phases of a spin
2. Discuss proper spin recovery technique and how to identify the rotation of a spin
3. Discuss what causes a stall, and how the two types of drag relate to a stall
4. Describe how certain flight conditions and configurations can affect stall speed
5. Discuss the procedure for entering and recovering from slow flight
6. Discuss how slow flight differs from cruise and what to expect when maneuvering in slow flight
7. Discuss how slow flight relates to flying, particularly within the pattern and best practices when in slow flight
8. Describe where and why a stall may be encountered on an ordinary flight
9. Discuss the dangers of stalls and spins within the traffic pattern

### Debrief

Critique the general performance of the student and point them towards guides and resources to assist in understanding the aerodynamic factors of stalls. Preview the next lesson and assign any extra material deemed necessary.

### Assignment

1. Review power on and power-off stall maneuvers
2. Review slow flight
3. Review proper checklist usage

## FLIGHT LESSON – 9

### Briefing

### Objectives

The purpose of this lesson is to introduce the student to stalls, and to develop recognition skills of impending stalls and what the proper recovery technique is.

### Completion Standards

The lesson is considered complete when the student is able to complete the following, WITH instructor guidance:

- Perform a power-off stall and recover
- Perform a power-on stall and recover

The lesson is considered complete when the student is able to complete the following, WITH LITTLE instructor guidance:

- Perform a normal takeoff
- Make all radio calls
- Perform a normal landing
- Set-up and execute slow flight
- Manage proper airspeed and altitude while in slow flight
- Utilize trim to maintain slow flight

### Content

1. Preflight, taxi, runup
2. Normal Takeoff
3. Straight and level slow flight
4. Special emphasis areas
  - a. Utilizing trim to reduce strain and maintain slow flight with minimal input from the pilot
5. Slow flight climbs and descents
6. Slow flight turns
7. Slow flight climbing and descending turns
8. Power-on stalls
9. Special emphasis areas
  - a. All stalls should be practiced to impending, and recovery should be initiated at first indication
  - b. Maintaining coordination as to avoid a sudden wing drop
10. Power-off stalls
11. Normal approach and landing

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## Debrief

Critique the general performance of the student, pointing out areas of weakness regarding stalls and slow flight. Preview the next lesson and assign any extra material deemed necessary.

## Assignment

1. Review ground reference maneuvers
2. Review turns around a point and s turns
3. Review the relationship between wind, ground track, and heading

## GROUND LESSON – 10

### Briefing

### Objectives

The purpose of this lesson is to introduce the concepts of ground reference maneuvers to the student, with a focus on how a crosswind affects a ground reference maneuver.

### Completion Standards

The lesson is considered complete when the student is able to complete the following, WITH instructor guidance:

- Identify the characteristics of a good ground reference point
- Describe the setup and execution of a turn around a point
- Describe the setup and execution of an s turn
- Describe how wind direction and speed affects ground speed and positioning
- Describe how to correct for a crosswind

### Content

1. Ground reference points
2. Turn around a point
3. S turns
4. How to identify wind direction visually
5. Crosswind correction
6. Special emphasis area
  - a. Anticipating crosswind component changes throughout the maneuver
  - b. Staying ahead of the aircraft

### Debrief

Critique the general performance of the student, focusing on areas of crosswind and staying ahead of the aircraft throughout a maneuver. Preview the next lesson and assign any extra material deemed necessary.

### Assignment

1. Review ground reference maneuvers
2. Review crosswind correction procedures

## FLIGHT LESSON – 11

### Briefing

### Objectives

The purpose of this lesson is to introduce ground reference maneuvers to the student, including turns around a point and s turns, with a focus on how wind speed and direction affects ground track and how to implement proper correction.

### Completion Standards

The lesson is considered complete when the student is able to complete the following, WITH instructor guidance:

- Conduct proper turns around a point, maintaining equidistance throughout the turn
- Conduct proper s turns, maintain equidistance throughout the turn
- Demonstrate proper wind correction while performing turns around a point and s turns

The lesson is considered complete when the student is able to complete the following, WITH LITTLE instructor guidance:

- Perform a normal takeoff
- Make all radio calls
- Perform a normal landing

### Content

1. Preflight, taxi, runup
2. Normal takeoff
3. Identify a good ground reference point for turns around a point
4. Perform turns around a point, while maintaining equidistance from the point throughout the turn
5. Special emphasis area
  - a. Anticipating wind direction changes throughout the turns and correcting for them
6. Identify a good ground reference for s turns
7. Perform s turns, while maintaining equidistance throughout the turn
8. Normal approach and landing

### Debrief

Critique the general performance of the student, pointing out areas of weakness regarding wind correction while performing ground reference maneuvers. Preview the next lesson and assign any extra material deemed necessary.

### Assignment

1. Review cross wind takeoff and landings
2. Review forward slip to landings
3. Review proper cross wind correction

## FLIGHT LESSON – 12

### Briefing

### Objectives

The purpose of this lesson is to review proper crosswind correction and practice crosswind takeoff and landings, while also practicing side slips.

### Completion Standards

The lesson is considered complete when the student is able to complete the following, WITH LITTLE instructor guidance:

- Perform cross wind takeoff and landings
- Perform an approach with proper side slip technique
- Maintain 5' above the runway while tracking centerline using proper crosswind correction

The lesson is considered complete when the student is able to complete the following, WITHOUT instructor guidance:

- Make all radio calls
- Taxi with proper crosswind correction

### Content

1. Preflight, taxi, runup
2. Normal takeoff w/ crosswind
3. Special emphasis areas
  - a. Utilizing trim to reduce strain
4. Short field takeoff w/ crosswind
5. Soft field takeoff w/ crosswind
6. Side slip approach
7. Maintain 5' above the runway while tracking centerline using proper crosswind correction
8. Normal landing w/ crosswind
9. Short field landing w/ crosswind
10. Soft field landing w/ crosswind

### Debrief

Critique the general performance of the student, pointing out areas of weakness regarding wind correction while performing takeoff and landings. Preview the next lesson and assign any extra material deemed necessary.

### Assignment

1. Review emergency procedures
2. Review power-off 180 landings

## FLIGHT LESSON – 13

### Briefing

### Objectives

The purpose of this lesson is to review emergency procedures, abnormal procedures, and aeronautical decision making.

### Completion Standards

The lesson is considered complete when the student is able to complete the following, WITHOUT instructor guidance:

- Identify various types of emergencies and demonstrate sound judgment in handling the emergency
- Identify various types of abnormal procedures and demonstrate sound judgement in handling the abnormality
- Perform a power-off 180 from multiple points within the traffic pattern
- Perform an emergency descent
- Make all radio calls

### Content

1. Preflight, taxi, runup
2. Normal takeoff
3. Engine fire in flight
4. Engine failure in flight
5. Emergency descent
6. Lost procedures
7. Abnormal procedures
8. Engine failure in the pattern
9. Power-off 180 to landing

### Debrief

Critique the general performance of the student, pointing out areas of weakness in decision making and emergency preparedness. Preview the next lesson and assign any extra material deemed necessary.

### Assignment

1. Review traffic pattern procedures
2. Review collision avoidance procedures
3. Review right-of-way regulations
4. Review wake turbulence avoidance
5. Review windshear characteristics and identification

## GROUND LESSON – 14

### Briefing

### Objectives

The purpose of this lesson is to review proper traffic pattern procedures, and to also review collision avoidance procedures, right-of-way procedures, wake turbulence avoidance, and windshear.

### Completion Standards

The lesson is considered complete when the student is able to complete the following, WITH LITTLE instructor guidance:

- Identify proper traffic pattern entry and departure procedures based on various conditions and performance profiles
- Describe proper collision avoidance techniques and procedures
- Identify who has right-of-way based on various scenarios
- Describe proper wake turbulence avoidance
- Identify a windshear level and describe best practices to fly through a windshear

### Content

1. Traffic pattern worksheet test
2. Collision avoidance identification
3. Collision avoidance techniques
4. Right-of-way
5. Special emphasis areas
  - a. Aircraft in distress vs. emergency medical aircraft
  - b. Types of aircraft and their right-of-way status
  - c. Maneuverability and it's relation to right-of-way
6. Wake turbulence causes and effects on small aircraft
7. Proper wake turbulence avoidance
8. Windshear definition and identification
9. Windshear navigation

### Debrief

Critique the general performance of the student, pointing out areas of weakness in knowledge and understanding of traffic pattern entry, collision avoidance, right-of-way procedures, wake turbulence, and windshear. Preview the next lesson and assign any extra material deemed necessary.

### Assignment

1. Review assigned material
2. Review and update the student PLC



## FLIGHT LESSON – 15

### Briefing

### Objectives

The purpose of this lesson is to review any areas deemed necessary by the instructor to ensure the student is prepared for their first solo flight.

### Completion Standards

The lesson is considered complete when the student is able to complete the following, WITHOUT instructor guidance:

- Conduct all ground procedures
- Make all radio calls
- Perform 3 takeoff and landings
- Demonstrate adequate crosswind correction

### Content

1. Review the PLC with the instructor
2. Preflight, taxi, runup
3. Normal takeoff
4. Normal landing
5. Shutdown

### Debrief

Critique the general performance of the student, assessing if they are prepared for their first solo.

### Assignment

1. Bring a spare, plain white T-shirt

## SOLO LESSON – 16

### Briefing

### Objectives

The purpose of this lesson is to allow the student to experience their first solo flight, and build confidence in the students' ability to pilot the aircraft.

### Completion Standards

The lesson is considered complete when the student is able to complete the following, WITHOUT instructor guidance:

- Conduct all ground procedures
- Make all radio calls
- Perform 1 - 3 takeoff and landings

### Content

1. Normal takeoff
2. Normal landing
3. Shutdown

### Debrief

Critique the general performance of the student, and perform the wing clipping rite of passage. Preview the next lesson and assign any extra material deemed necessary.

### Assignment

1. Review pilotage and dead reckoning procedures
2. Review proper traffic pattern entry procedures

## FLIGHT LESSON – 17

### Briefing

### Objectives

The purpose of this lesson is to build experience flying to satellite airports and teach proper navigation procedures and techniques.

### Completion Standards

The lesson is considered complete when the student is able to complete the following, WITH instructor guidance:

- Utilize pilotage and dead reckoning to navigate to a satellite airport within 25NM
- Conduct proper lost procedures

The lesson is considered complete when the student is able to complete the following, WITHOUT instructor guidance:

- Perform all ground procedures
- Perform normal takeoff and landings
- Perform short field takeoff and landings
- Perform soft field takeoff and landings

### Content

1. Preflight, taxi, runup
2. Normal takeoff
3. Navigate to the chosen airfield
4. Identify the proper runway for landing
5. Pattern entry
6. Special emphasis areas
  - a. Sight picture differences due to differing runway dimensions
  - b. Radio calls
  - c. Traffic avoidance
7. Short field takeoff
8. Soft field takeoff
9. Lost procedures
10. Pilotage and dead reckoning
11. Normal landing
12. Short field landing
13. Soft field landing

### Debrief

Critique the general performance of the student, focusing on areas of weakness in pilotage, dead reckoning, and pattern entry. Preview the next lesson and assign any extra material deemed necessary.

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## **Assignment**

- I. Review assigned material

## SOLO LESSON – 18

### Briefing

### Objectives

The purpose of this lesson is to allow the student to further build solo time and confidence, focusing on managing the aircraft without an instructor on board.

### Completion Standards

The lesson is considered complete when the student is able to complete the following, WITHOUT instructor guidance:

- Perform all ground procedures
- Complete multiple laps around the pattern
- Feel confident in completing at least 3 takeoff and landings

### Content

1. Preflight, taxi, runup
2. Normal takeoff
3. Short field takeoff
4. Soft field takeoff
5. Normal landing
6. Short field landing
7. Soft field landing
8. Taxi back and shutdown

### Debrief

Critique the general performance of the student, focusing on areas of crosswind correction and pattern work. Preview the next lesson and assign any extra material deemed necessary.

### Assignment

1. Review PLC minimums
2. Review weather forecasts and planning
3. Review pattern entry and departure procedures
4. Review pilotage and dead reckoning procedures

## SOLO LESSON – 19

### Briefing

### Objectives

The purpose of this lesson is to allow the student to build further solo time and confidence, as well as to allow them to become comfortable flying to a satellite airport without an instructor.

### Completion Standards

The lesson is considered complete when the student is able to complete the following, WITHOUT instructor guidance:

- Plan a flight to a satellite airport within 25NM
- Perform all ground procedures
- Depart the traffic pattern and make proper radio calls
- Navigate to a satellite airport utilizing pilotage and dead reckoning procedures
- Feel confident in completing at least 3 takeoff and landings, with a minimum of 2 takeoff and landings at a satellite airport

### Content

1. Preflight, taxi, runup
2. Normal takeoff
3. Navigate to selected airfield
4. Identify the proper runway for landing
5. Pattern entry
6. Normal landing
7. Normal takeoff
8. Navigate back to KSEF
9. Identify the proper runway for landing
10. Pattern entry
11. Normal landing
12. Taxi back and shutdown

### Debrief

Critique the general performance of the student, focusing on areas of discomfort and hesitation while navigating solo. Preview the next lesson and assign any extra material deemed necessary.

### Assignment

1. Review four fundamentals of flight
2. Review instrument functionality

## FLIGHT LESSON – 20

### Briefing

### Objectives

The purpose of this lesson is to review the four fundamentals of flight and to introduce the student to instrument flying.

### Completion Standards

The lesson is considered complete when the student is able to complete the following, WITH instructor guidance:

- Maintain straight and level flight under the hood
- Perform basic maneuvers under the hood
- Perform slow flight under the hood
- Navigate under the hood

The lesson is considered complete when the student is able to complete the following, WITHOUT instructor guidance:

- Perform all ground procedures
- Perform normal takeoff and landings

### Content

1. Preflight, taxi, runup
2. Normal takeoff and pattern departure
3. Identify imminent IMC conditions
4. Hood flying
5. Special emphasis areas
  - a. Navigating out of the IMC
  - b. Flying by the instruments, not your body
  - c. Aeromedical illusions
  - d. Instrument scan
6. Straight and level
7. Climbs and descents
8. Medium bank turns
9. Climbing and descending turns
10. Slow flight maneuvers
11. Imminent stalls
12. Unusual attitude recovery
13. Navigate back to KSEF
14. Normal landing
15. Taxi back and shutdown

## Debrief

Critique the general performance of the student, focusing on areas of aeromedical illusions and instrument flying. Preview the next lesson and assign any extra material deemed necessary.

## Assignment

1. Review cross-country procedures
2. Review navigation procedures
3. Review navlog procedures
4. Review weather forecasts
5. Review weight and balance calculations
6. Review GPS procedures
7. Review autopilot procedures and limitations



## GROUND LESSON – 21

### Briefing

### Objectives

The purpose of this lesson is to review proper cross-country procedures, as well as to review flight planning, weather charts, GPS functionality, autopilot systems, the usage of navlogs, and weight and balance calculations.

### Completion Standards

The lesson is considered complete when the student is able to complete the following, WITH LITTLE instructor guidance:

- Plan a flight to a satellite airfield more than 25NM straight line distance away
- Describe various weather products, what they mean, how they effect a flight, and where to access them from
- Outline the use of GPS
- Describe the components of autopilot and the dangers it could pose
- Fill out a navlog
- Calculate accurate weight and balance, and demonstrate adequate knowledge of how burning fuel on a flight changes the weight and balance of the aircraft

### Content

1. Satellite airfield selection criteria
2. Paper chart planning of a flight to selected airfield
3. Choosing a proper flight level based on heading and weather
4. Review of various weather products and the effects of weather forecasts on flight planning
5. Identify proper GPS functionality and usage
6. Identify and describe usage of autopilot
7. Special emphasis areas
  - a. Setting a bug before engaging autopilot
  - b. Altitude and maneuver limitations of autopilot
  - c. Emergency disengagement of the autopilot
8. Weight and balance calculations
9. Fuel burn calculations
10. Filling out and using a paper navlog

### Debrief

Critique the general performance of the student, focusing on areas of weakness. Preview the next lesson and assign any extra material deemed necessary.

### Assignment

1. Review all cross-country procedures
2. Plan a cross-country flight to an airfield more than 25NM straight line distance away

## FLIGHT LESSON – 22

### Briefing

### Objectives

The purpose of this lesson is to practice cross-country procedures and develop GPS navigation skills, as well as to introduce proper autopilot usage techniques.

### Completion Standards

The lesson is considered complete when the student is able to complete the following, WITH LITTLE instructor guidance:

- Navigate to and from a satellite airport that is more than 25NM straight line distance away
- Utilized GPS systems to reduce pilot workload
- Utilize autopilot systems in conjunction with GPS
- Utilize the paper navlog to crosscheck navigation

The lesson is considered complete when the student is able to complete the following, WITHOUT instructor guidance:

- Conduct all ground procedures
- Correctly identify the proper satellite runway for landing
- Make all radio calls at the domestic and satellite airport
- Perform proper lost procedures
- Perform at least 3 takeoff and landings, with at least 1 of those takeoff and landings at the satellite airport

### Content

1. Preflight, taxi, runup
2. GPS navigation entry on the ground
3. Normal takeoff and autopilot engagement on climb out
4. Autopilot navigation to the destination airport
5. Pattern entry and proper runway selection
6. Normal landing and takeoff
7. GPS navigation back to KSEF
8. Lost procedures
9. Autopilot malfunction
10. Emergency procedure
11. Normal landing

### Debrief

Critique the general performance of the student, focusing on areas of weakness in automation, navigation, and emergency preparedness. Preview the next lesson and assign any extra material deemed necessary.

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## **Assignment**

1. Review assigned material
2. Review cross-country procedures

## SOLO LESSON – 23

### Briefing

### Objectives

The purpose of this lesson is to allow the student to continue to build confidence in their piloting abilities, both at the domestic airfield and at a satellite airfield.

### Completion Standards

The lesson is considered complete when the student is able to complete the following, WITHOUT instructor guidance:

- Plan a cross-country flight to a satellite airfield more than 25NM straight line distance away
- Navigate successfully to the satellite airfield and conduct a safe landing
- Navigate back to the domestic airfield and conduct a safe landing

### Content

1. Navlogs and navigation equipment
2. Weather briefing and review
3. Weight and balance
4. Fuel burn calculations
5. Destination airfield selection and review
6. Go-No-Go decision
7. Preflight, taxi, runup
8. Normal takeoff
9. Navigation to satellite airfield utilizing pilotage, dead reckoning, GPS, or any combination thereof
10. Runway selection and pattern entry
11. Normal landing and takeoff
12. Navigation back to KSEF utilizing pilotage, dead reckoning, GPS, or any combination thereof
13. Runway selection and pattern entry
14. Normal landing
15. Taxi back and shutdown

### Debrief

Critique the general performance of the student, focusing on areas of weakness on radios, navigation, and flight planning. Preview the next lesson and assign any extra material deemed necessary.

### Assignment

1. Review assigned material
2. Review cross-country procedures

## SOLO LESSON – 24

### Briefing

### Objectives

The purpose of this lesson is to allow the student to continue to build confidence in their piloting abilities, particularly in long range navigation and cross-country procedures.

### Completion Standards

The lesson is considered complete when the student is able to complete the following, WITHOUT instructor guidance:

- Plan a cross-country flight at least 75MN in distance, with 2 stops at different airfields, with 1 leg more than 25NM straight line distance
- Navigate successfully to the satellite airfield and conduct a safe landing
- Navigate back to the domestic airfield and conduct a safe landing

### Content

1. Navlogs and navigation equipment
2. Weather briefing and review
3. Weight and balance
4. Fuel burn calculations
5. Destination airfield selection and review
6. Go-No-Go decision
7. Preflight, taxi, runup
8. Normal takeoff
9. Navigation to satellite airfield utilizing pilotage, dead reckoning, GPS, or any combination thereof
10. Runway selection and pattern entry
11. Normal landing and takeoff
12. Navigation back to KSEF utilizing pilotage, dead reckoning, GPS, or any combination thereof
13. Runway selection and pattern entry
14. Normal landing
15. Taxi back and shutdown

### Debrief

Critique the general performance of the student, focusing on areas of weakness on radios, navigation, and flight planning. Preview the next lesson and assign any extra material deemed necessary.

### Assignment

1. Review performance maneuvers
2. Review stalls
3. Review slow flight
4. Review emergency and abnormal procedures

## FLIGHT LESSON – 25

### Briefing

### Objectives

The purpose of this lesson is to review maneuvers, stalls, slow flight, and emergencies in preparation for the check ride. This lesson may be repeated as many times as necessary to ensure the student is adequately prepared.

### Completion Standards

The lesson is considered complete when the student is able to complete the following, WITHOUT instructor guidance:

- Perform all preflight duties
- Perform all stages of flight
- Perform all performance maneuvers to Landing Doctor standards
- Perform all stalls to Landing Doctor standards
- Perform slow flight to Landing Doctor standards
- Perform all emergency and abnormal procedures to Landing Doctor standards

### Content

1. Preflight, taxi, runup
2. Normal takeoff
3. Performance climbs and descents
4. Performance turns
5. Performance climbing and descending turns
6. Power on stall
7. Power-off stall
8. Slow flight
9. Slow flight maneuvers
10. Abnormal procedures
11. Emergency procedures
12. Normal landing

### Debrief

Critique the general performance of the student, focusing on areas of weakness in maneuvers, stalls, slow flight, and emergency preparedness. Preview the next lesson and assign any extra material deemed necessary.

### Assignment

1. Review ground reference maneuvers
2. Review crosswind takeoff and landings
3. Review short field takeoff and landings
4. Review soft field takeoff and landings
- 5.

## FLIGHT LESSON – 26

### Briefing

### Objectives

The purpose of this lesson is to review ground reference maneuvers and takeoff and landings in preparation for the check ride. This lesson may be repeated as many times as necessary to ensure the student is adequately prepared.

### Completion Standards

The lesson is considered complete when the student is able to complete the following, WITHOUT instructor guidance:

- Perform all preflight duties
- Perform all stages of flight
- Perform all ground reference maneuvers to Landing Doctor standards
- Perform all takeoff and landings to Landing Doctor standards

### Content

1. Preflight, taxi, runup
2. Normal takeoff
3. Turns around a point
4. S turns
5. Reduced speed pattern
6. Short field takeoff
7. Soft field takeoff
8. Normal landing
9. Short field landing
10. Soft field landing
11. Power-off 180 landing

### Debrief

Critique the general performance of the student, focusing on areas of weakness in ground reference maneuvers, takeoffs, and landings. Preview the next lesson and assign any extra material deemed necessary.

### Assignment

1. Review performance maneuvers
2. Review stalls
3. Review slow flight
4. Review ground reference maneuvers
5. Review takeoff and landings
6. Review abnormal and emergency procedures

## STAGE CHECK – 27

### Briefing

### Objectives

The purpose of this lesson is to serve as a pseudo check ride, examining the overall performance of the student to gauge the overall preparedness of the student before their check ride.

### Completion Standards

The lesson is considered complete when the student is able to complete the following, WITHOUT instructor guidance:

- Perform all preflight duties
- Perform all stages of flight
- Perform all performance maneuvers to Landing Doctor standards
- Perform all stalls to Landing Doctor standards
- Perform slow flight to Landing Doctor standards
- Perform all emergency and abnormal procedures to Landing Doctor standards
- Perform all ground reference maneuvers to Landing Doctor standards
- Perform all takeoff and landings to Landing Doctor standards
- Perform all cross-country procedures to Landing Doctor standards

### Content

1. Preflight, taxi, runup
2. Normal takeoff
3. Cross-country procedures
4. Pilotage and dead reckoning
5. GPS navigation
6. Autopilot usage
7. Performance climbs and descents
8. Performance turns
9. Performance climbing and descending turns
10. Power on stall
11. Power-off stall
12. Slow flight
13. Slow flight maneuvers
14. Abnormal procedures
15. Emergency procedures
16. Turns around a point
17. S turns
18. Reduced speed patterns
19. Short field takeoff
20. Soft field takeoff



21. Normal landing
22. Short field landing
23. Soft field landing
24. Power-off 180 landing

## **Debrief**

Critique the general performance of the student, and decide together if they are adequately prepared for the check ride.

## SPORT PILOT MINIMUMS

### Required

- FAR 61 Subpart J – Sport Pilots
  - 61.303
    - A Medical Certificate or U.S. Driver’s License
    - b) If using a Driver’s License:
      - 1) Comply with each restriction and limitation imposed by that person’s U.S. driver’s license and any judicial or admin order applying to the operation of a motor vehicle:
      - 2) Have been found eligible for the issuance of at least a third-class medical certificate at the time of their most recent application.
      - 3) Not have had their most recently issued medical certificate suspended or revoked or their most recent Authorization of Special Issuance of a Medical Certificate or withdrawn; and
      - 4) Not know or have reason to know of any medical condition that would make that person unable to operate a light-sport aircraft in a safe manner.
  - 61.305
    - a) Eligibility
      - 1) Be at least 17 years old.
      - 2) Be able to read, speak, write, and understand English.
  - 61.307: Obtaining a sport pilot certificate
    - a) Knowledge test. You must pass a knowledge test on the applicable aeronautical knowledge areas listed in FAR61.309. Before you may take the knowledge test for a sport pilot certificate, you must receive a logbook endorsement from the authorized instructor who trained you or reviewed and evaluated your home-study course on the aeronautical knowledge areas listed in FAR61.309 certifying you are prepared for the test.
    - b) Practical test: You must pass a practical test on the applicable areas of operation listed in FAR61.311 Before you may take the practical test for a sport pilot certificate, you must receive a logbook endorsement from the authorized instructor who provided you with the flight training on the areas of operation specified in FAR61.309 and FAR 61.311 in preparation for the practical test. This endorsement certifies that you meet the applicable aeronautical knowledge and experience requirements and are prepared for the practical test.
  - 61.309: Aeronautical Knowledge
    - a) Applicable regulations of this chapter that relate to the sport pilot privileges, limits, and flight operations.
    - b) Accident reporting requirements of the NTSB.
    - c) Use of the applicable portions of the aeronautical information manual and FAA advisory circulars.
    - d) Use of aeronautical charts for VFR navigation using pilotage, dead reckoning, and navigation systems, as appropriate.
    - e) Recognition of critical weather situations from the ground and in flight, windshear avoidance, and the procurement and use of aeronautical weather reports and forecasts.

- f) Safe and efficient operation of aircraft, including collision avoidance, and recognition and avoidance of wake turbulence.
- g) Effects of density altitude on takeoff and climb performance.
- h) Weight and balance computations.
- i) Principles of aerodynamics, powerplants, and aircraft systems.
- j) Stall awareness, spin entry, spins, and spin recovery techniques, as applicable.
- k) Aeronautical decision making and risk management.
- l) Preflight actions that include-
  - 1) How to get information on runway lengths at airports of intended use, data on takeoff and landing distances, weather reports and forecasts, and fuel requirements; and
  - 2) How to plan for alternatives if the planned flight cannot be completed or you encounter delays.
- 61.311: Flight Proficiency
  - a) Preflight preparation.
  - b) Preflight procedures.
  - c) Airport, seaplane base, and gliderport operations, as applicable.
  - d) Takeoffs, landings, and go-arounds.
  - e) Performance maneuvers.
  - f) Ground reference maneuvers
  - h) Navigation.
  - i) Slow flight
  - j) Stalls
  - k) Emergency operations
  - l) Post-flight procedures
- 61.313: Flight Experience
  - a) Airplane category and single-engine land privileges,
    - 1) 20 hours of flight time, including at least 15 hours of flight training from an authorized instructor in a single-engine airplane and at least 5 hours of solo flight training and the areas of operation listed in FAR61.311
      - i) 2 hours of cross-country flight training,
      - ii) 10 takeoffs and landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport,
      - iii) One solo cross-country flight of at least 75 NM total distance, with a full-stop landing at a minimum of two points and one segment of the flight consisting of a straight-line distance of at least 25 NM between the takeoff and landing locations, and
      - iv) 2 hours of flight training with and authorized instructor on those areas of operation specified in FAR61.311 in preparation for the practical test within the preceding 2 calendar months from the month of the test.

## SPORT PILOT PTS

### Disclosure

While both the Landing Doctor Code and this Training Course Outline were written with the Sport Pilot PTS in mind, a copy of the PTS standards that the Academy teaches to is outlined below and is to be used to ensure that the student meets all PTS standards.

- Traffic Pattern:
  - $\pm 100'$
  - $\pm 10$  kts
- Takeoff and Climb
  - $+10$ kts/ $-5$ kts
- Approach and Landing
  - $+1.3V_{so}$ ,  $+10$ kts/ $-5$ kts
  - Touchdown at or within 400' beyond a specified point
- Soft Field Takeoff and Climb
  - Lifts off at the lowest possible airspeed and remains in ground effect while accelerating to  $V_x$  or  $V_y$ , as appropriate
  - $+10$ kts/ $-5$ kts
- Soft Field Approach and Landing
  - $+1.3V_{so}$ ,  $+10$ kts/ $-5$ kts
- Short Field Takeoff and Climb
  - $V_x + 10$ kts/ $-5$ kts until:
  - 50' above the surface and clear of obstacles, then:
  - $V_y + 10$ kts/ $-5$ kts
- Short Field Approach and Landing
  - $+1.3V_{so}$ ,  $+10$ kts/ $-5$ kts
  - Touchdown at or within 200' beyond a specified point
- Forward Slip to Landing
  - Touchdown at the approximate stalling speed
  - Touchdown at or within 400' beyond a specified point
- Go-Around
  - Applies takeoff power and immediately transitions to a climb pitch
  - $V_y + 10$ kts/ $-5$ kts
- Steep Turns
  - $V_a \pm 10$ kts
  - Entry altitude  $\pm 100'$
  - Bank  $45^\circ \pm 5^\circ$
  - Entry heading  $\pm 10^\circ$
- Rectangular Course
  - 600' AGL
  - $45^\circ$  entry to the downwind leg
  - $\pm 10$ kts

- S Turns
  - 600' AGL
  - $\pm 100'$
  - $\pm 10$  kts
- Turns Around A Point
  - 600' AGL
  - Exits at the point of entry heading  $\pm 10^\circ$
  - $\pm 100'$
  - $\pm 10$  kts
- Pilotage and Dead Reckoning
  - $\pm 3$  NM of planned route
  - $\pm 200'$
  - $\pm 15$  kts
- Diversion
  - Determines sufficient fuel to fly to the alternate airport/landing area
  - $\pm 200'$
  - $\pm 15$  kts
- Slow Flight and Stall
  - 1,000' AGL MRA
  - $\pm 100'$
  - $\pm 10^\circ$  specified heading
  - + 10 kts/-0 kts
  - $\pm 10^\circ$  specified bank
- Power-Off Stalls
  - 1,000' AGL MRA
  - $\pm 10^\circ$  specified heading
  - $< 20^\circ$  of bank
  - $\pm 10^\circ$  of bank
- Power-On Stalls
  - 1,000' AGL MRA
  - $\pm 10^\circ$  specified heading
  - $< 20^\circ$  of bank
  - $\pm 10^\circ$  of bank
- Emergency Operations
  - $\pm 10$  kts Best Glide