

**Henderson State University
Department of Aviation**

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Private Pilot Certification Course

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TRAINING COURSE OUTLINE

1. The Henderson State University Department of Aviation holds Air Agency Certificate H2UV353K. Henderson State University Department of Aviation is located at 1100 Henderson Street, Arkadelphia, Arkansas with the following mailing address is:
Henderson State University
PO Box 7611
Arkadelphia, AR 71999-0001
2. COURSE TITLE: Private Pilot Certification Course – Airplane Single-Engine Land
3. This TCO meets all of the curriculum requirements for the Private Pilot Certification Course contained in appendix B of 14 CFR Part 141.
4. This training syllabus contains the ground training course and flight training course that are taught concurrently.
5. COURSE OBJECTIVE: The student will obtain the knowledge, skill and aeronautical experience necessary to meet the requirements for a private pilot certificate with an airplane category rating and a single-engine land class rating.
6. COMPLETION STANDARD: The student must demonstrate through test and appropriate records that he/she meets the knowledge, skill and experience requirements necessary to obtain a private pilot certificate with an airplane category and a single-engine land class rating.
7. GROUND INSTRUCTIONAL FACILITIES:
 - a. Ground instructional facilities are located in Caplinger Airway Science Academic Center on the Henderson State University campus at 1100 Henderson Street, Arkadelphia, Arkansas. They consist of classrooms sized forty feet by thirty-three feet equipped with four worktables and chairs accommodating 40 students. Each classroom is equipped with two large permanently wall mounted whiteboards, state of the art AMX VCR, Elmo, Video, Computer, and two 36-inch monitors and projector and screen. A complete selection of video and audiovisual equipment is available as required from the university Media Services group.
 - b. The two Flight Training Devices (FTD) used by Henderson State University Department of Aviation are located in Caplinger Airway Science Academic Center on the Henderson State University campus at 1100 Henderson Street, Arkadelphia, Arkansas. They consist of a Frasca Model 141, serial number 115, and referred to as N1HS and an Aviation Simulation Technology Model 300, serial number 1216, and referred to as N2HS. Both FTDs meet the requirements of 14 CFR 141.41(b).
 - c. The ground instructional facilities are well lighted and provide adequate heating and cooling. All buildings used conform to local and state building, sanitation, and health codes. The rooms are designed and located so that students will not be distracted by other activities.
8. AIRPORT: The Arkadelphia Municipal Airport (M89) is the main operations base for training in this course. The airport has a hard-surfaced runway and meets the requirements for 14 CFR 141.38 for day and night flight operations. Fuel services are available from 0700 to 2200 hours local time daily, and maintenance services are available from 0800 to 1700 hours Monday through Friday.

9. AIRPORT FACILITIES: Flight briefing areas are located in a commercial portable building adjacent to the airport terminal building at the Arkadelphia Municipal Airport. The briefing areas are equipped with whiteboards, tables and chairs. A telephone is available for weather briefings from the FAA Flight Service Station in Jonesboro, Arkansas. Aeronautical charts and Airport/Facility directories are available. The flight briefing areas are will lighted and provide adequate heating and cooling. They conform to local and state building, sanitation, and health codes. The rooms are designed and located so that students will not be distracted by other activities.
10. AIRCRAFT: Maule Model MXT-7, Cessna Model C-152, and Cessna Model C-172 aircraft will be used for flight training. These aircraft meet the requirements of FAR 141.39. Radio equipment consists of at least one VHF transmitter and receiver, at least one VOR navigation receiver, and a transponder with Model C altitude reporting capability. Additionally, each aircraft is equipped for day and night VFR flight, as well as for day and night VFR and IFR flight, as specified in FAR 91.205.
11. CHIEF FLIGHT INSTRUCTOR: See appendix A.
12. ASSISTANT CHIEF FLIGHT INSTRUCTOR: See appendix A.
13. FLIGHT INSTRUCTORS: Each flight instructor assigned to this course must hold at least a Commercial Pilot Certificate with instrument airplane, and must hold a Flight Instructor Certificate with airplane single engine rating.

TRAINING COURSE OUTLINE – TRAINING SYLLABUS
PRIVATE PILOT CERTIFICATION COURSE AIRPLANE SINGLE-ENGINE LAND
FLIGHT TRAINING: 38.0 HOURS

1. **ENROLLMENT PREREQUISITES:** A person must hold either a recreational pilot certificate or student pilot certificate prior to enrolling in the flight portion of the private pilot certification course.
2. **FLIGHT TRAINING COURSE OBJECTIVES:** Upon completion of the private pilot certification course the student shall be able to proficiently and consistently perform the maneuvers listed in the Private Pilot PTS. Furthermore, the student shall be able to proficiently and competently perform cross-country navigation by means of pilotage and dead reckoning with or without the assistance of radio navigation.
3. **FLIGHT TRAINING COURSE COMPLETION STANDARDS:** To complete Henderson State University's Private Pilot Certification Course the student shall exhibit a thorough working knowledge of the subject matter found in the Private Pilot PTS. The student shall also perform all maneuvers listed in the Private Pilot PTS to PTS standards.

STAGE ONE – SOLO FLIGHT (DUAL 10.7 HOURS, SOLO 0.6 HOURS)

1. **STAGE ONE OBJECTIVES:** The objectives of stage one of Henderson State University's Private Pilot Certification Course are to:
 - a. Train the student to safely perform:
 - i. Straight and level flight
 - ii. Climbs and climbing turns
 - iii. Collision avoidance, windshear avoidance, and wake turbulence avoidance
 - iv. Descents, with and without turns, using high and low drag configurations
 - v. Flight at various airspeeds
 - b. Train the student to perform the preflight procedures listed in the Private Pilot PTS to PTS standards, including:
 - i. Preflight planning and preparation, powerplant operation, and aircraft systems
 - ii. Taxiing, including run-ups
 - c. Train the student to perform the airport operations listed in the Private Pilot PTS to PTS standards, including:
 - i. Airport traffic patterns with correct entry and departure procedures
 - d. Train the student to perform normal takeoffs, crosswind takeoffs, normal landings, crosswind landings, slips to landings, and go-arounds as listed in the Private Pilot PTS to PTS standards
 - e. Train the student to perform the performance maneuvers listed in the Private Pilot PTS to PTS standards
 - f. Train the student to perform the ground reference maneuvers listed in the Private Pilot PTS to PTS standards
 - g. Train the student to perform slow flight and stalls as listed in the Private Pilot PTS to PTS standards
 - h. Train the student to perform the emergency operations as listed in the Private Pilot PTS to PTS standards, including:
 - i. Emergency procedures and equipment malfunctions
 - ii. Approaches to a landing area with simulated engine malfunctions
 - i. Train the student to perform the postflight procedures listed in the Private Pilot PTS to PTS standards

2. **STAGE ONE COMPLETION STANDARDS:** Stage one of Henderson State University's Private Pilot Certification Course is complete when the student:
 - a. Performs the following maneuvers in a safe and competent manor:
 - i. Straight and level flight
 - ii. Climbs and climbing turns
 - iii. Collision avoidance, windshear avoidance, and wake turbulence avoidance
 - iv. Descents, with and without turns, using high and low drag configurations
 - v. Flight at various airspeeds
 - b. Performs the preflight procedures listed in the Private Pilot PTS to PTS standards
 - c. Performs the airport operations listed in the Private Pilot PTS to PTS standards
 - d. Demonstrates the ability to safely and competently fly the aircraft solo using normal takeoffs, crosswind takeoffs, normal landings, and crosswind landings.
 - e. Performs the performance maneuvers listed in the Private Pilot PTS to PTS standards
 - f. Performs the ground reference maneuvers listed in the Private Pilot PTS to PTS standards
 - g. Performs slow flight and stalls as listed in the Private Pilot PTS to PTS standards
 - h. Perform the emergency operations as listed in the Private Pilot PTS to PTS standards
 - i. Perform the postflight procedures listed in the Private Pilot PTS to PTS standards

3. FLIGHT LESSON 1 (0.7 dual)

a. Lesson Objectives:

- i. Student will learn how to perform a through preflight inspection, how to start the engine, how to taxi, and how to secure the aircraft.
- ii. Student will be introduced to the basics of a normal takeoff and landing.
- iii. Student will be introduced to the basics of aircraft control.

b. Content:

i. Preflight Discussion:

1. Preflight Inspection
2. Traffic Patterns
3. Straight And Level
4. Engine Starting
5. Airport Signs & Lighting
6. Constant Airspeed Climbs
7. Taxiing
8. Normal Takeoff
9. Constant Airspeed Descents
10. Use of Checklist
11. Normal Landing
12. Turns To Heading
13. After Landing/Securing

ii. Introduce:

1. Preflight Inspection
2. Airport Signs & Lighting
3. Constant Airspeed Climbs
4. Engine Starting
5. Normal Takeoff
6. Constant Airspeed Descents
7. Taxiing
8. Normal Landing
9. Turns To Heading
10. Use of Checklist
11. Straight And Level
12. After Landing/Securing

c. Completion Standards:

- i. Student will understand how to perform a through preflight inspection, how to start the engine, how to taxi, and how to secure the aircraft.
- ii. Student will understand the basics of a normal takeoff and landing.
- iii. Student will understand the basics of aircraft control.

d. Postflight Discussion / Preview of Next Lesson / Homework Assignment

4. FLIGHT LESSON 2 (1.0 dual)

a. Lesson Objectives:

- i. Student will learn how to appropriately use the different flight controls.
- ii. Student will learn the concept of a crosswind landing.
- iii. Student will be introduced to ground reference maneuvers.

b. Content:

i. Preflight Discussion and Ground Review:

1. Certificates And Documents

2. Operations Of Brakes
 3. S-Turns
 4. Airworthiness Requirements
 5. Radio Communications
 6. Turns Around A Point
 7. Operations Of Ailerons
 8. Steep Turns
 9. Traffic Patterns
 10. Operations Of Flaps
 11. Rect. Course
 12. After Landing
 13. Parking / Securing
 14. Flight Review:
 15. Preflight Inspection
 16. Traffic Patterns
 17. Straight And Level
 18. Engine Starting
 19. Airport Signs & Lighting
 20. Constant Airspeed Climbs
 21. Taxiing
 22. Normal Takeoff
 23. Constant Airspeed Descents
 24. Use of Checklist
 25. Normal Landing
 26. Turns To Heading
- ii. Introduce:
1. Operations Of Ailerons
 2. Radio Communications
 3. Turns Around A Point
 4. Operations Of Flaps
 5. Steep Turns
 6. Traffic Patterns
 7. Operations Of Rudder
 8. Rect. Course
 9. After Landing
 10. S-Turns
 11. Parking / Securing
- c. Completion Standards:
- i. Student will understand how the different flight controls work and what they do.
 - ii. Student will perform takeoffs with minimal instructor assistance.
 - iii. Student will perform landings with instructor assistance.
 - iv. Student will understand the concept of a crosswind takeoffs and landings.
 - v. Student will perform maneuvers $\pm 200'$, $\pm 20^\circ$, ± 20 knots.
- d. Postflight Discussion / Preview of Next Lesson / Homework Assignment

5. FLIGHT LESSON 3 (1.2 dual)

a. Lesson Objectives:

- i. Student will gain proficiency in ground reference maneuvers.
- ii. Student will be introduced to slow flight, stalls, and steep turns.

- b. Content
 - i. Preflight Discussion and Ground Review:
 - 1. Certificates And Documents
 - 2. Normal Takeoff
 - 3. Steep Turns
 - 4. Airworthiness Requirements
 - 5. Normal Landing
 - 6. Turns Around A Point
 - 7. Weather Information
 - 8. Crosswind Takeoff
 - 9. Slow Flight
 - 10. Operations Of Ailerons
 - 11. Crosswind Landing
 - 12. Power-Off Stalls
 - 13. Operations Of Flaps
 - 14. Steep Turns
 - 15. Power-On Stalls
 - 16. Operations Of Rudder
 - 17. Rect. Course
 - 18. S-Turns
 - ii. Flight Review:
 - 1. Preflight Inspection
 - 2. Normal Takeoff
 - 3. Rect. Course
 - 4. Engine Starting
 - 5. Normal Landing
 - 6. S-Turns
 - 7. Taxiing
 - 8. Radio Communications
 - 9. Turns Around A Point
 - 10. Use of Checklist
 - 11. Steep Turns
 - 12. After Landing
 - 13. Traffic Patterns
 - 14. Parking / Securing
 - iii. Introduce:
 - 1. Slow Flight
 - 2. Crosswind Takeoff
 - 3. Power-Off Stalls
 - 4. Crosswind Landing
 - 5. Power-On Stalls
- c. Completion Standards:
 - i. Student will perform ground reference maneuvers to $\pm 150'$ and 15 knots.
 - ii. Student will perform takeoffs without instructor assistance.
 - iii. Student will perform landings with minimal instructor assistance.
 - iv. Student will perform steep turns $\pm 200'$, ± 20 knots, $\pm 10^\circ$ bank.
 - v. Student will setup and perform slow flight $\pm 200'$, $+20/-10$ knots

d. Postflight Discussion / Preview of Next Lesson / Homework Assignment

6. FLIGHT 4 (1.2 dual)

a. Lesson Objectives:

- i. Student will gain proficiency in ground reference maneuvers, slow flight, stalls, and landings.
- ii. Student will be introduced to slips, emergency approaches and landings, and go-arounds.

b. Content:

i. Preflight Discussion and Ground Review:

1. Certificates And Documents
2. Aeromedical Factors
3. Emergency App. & Landing
4. Airworthiness Requirements
5. Forward Slip To A Landing
6. System & Equipment Failure
7. Weather Information
8. Go-Around
9. Emergency Equipment and Survival Gear
10. Performance/Limitations

ii. Flight Review:

1. Preflight Inspection
2. Normal Takeoff
3. Steep Turns
4. Engine Starting
5. Normal Landing
6. Slow Flight
7. Taxiing
8. Crosswind Takeoff
9. Power-Off Stalls
10. Use of Checklist
11. Crosswind Landing
12. Power-On Stalls
13. Radio Communications
14. Rect. Course
15. After Landing
16. Traffic Patterns
17. S-Turns
18. Parking / Securing
19. Airport Signs & Lighting
20. Turns Around A Point

iii. Introduce:

1. Emergency App. & Landing
2. Forward Slip To A Landing
3. System & Equipment Failure
4. Go-Around
5. Emergency Equipment and Survival Gear

c. Completion Standards:

- i. Student will perform ground reference maneuvers to $\pm 100'$ and 10 knots.

- ii. Student will perform steep turns $\pm 150'$, ± 15 knots, $\pm 5^\circ$ bank.
 - iii. Student will setup and perform slow flight $\pm 150'$, $+15/-5$ knots
 - iv. Student will demonstrate the appropriate procedures for stall setup and recovery.
 - v. Student will understand and perform slips and go-arounds.
 - vi. Student will understand the procedures for emergency approaches and landings.
 - vii. Student will perform landings with minimal instructor assistance, if any.
- d. Postflight Discussion / Preview of Next Lesson / Homework Assignment

7. FLIGHT LESSON 5 (1.2 dual)

a. Lesson Objectives:

- i. Student will gain proficiency in slow flight, stalls, steep turns, slips, emergency approaches, and landings.

b. Content:

i. Preflight Discussion and Ground Review:

1. Weather Information
2. Performance/Limitations
3. Aeromedical Factors

ii. Flight Review:

1. Preflight Inspection
2. Crosswind Takeoff
3. Emergency App. & Landing
4. Engine Starting
5. Crosswind Landing
6. System & Equipment Failure
7. Taxiing
8. Forward Slip To A Landing
9. Emergency Equipment and Survival Gear
10. Use of Checklist
11. Go-Around
12. After Landing
13. Radio Communications
14. Slow Flight
15. Parking / Securing
16. Traffic Patterns
17. Steep Turns
18. Airport Signs & Lighting
19. Power-Off Stalls
20. Normal Takeoff
21. Power-On Stalls
22. Normal Landing

c. Completion Standards:

- i. Student will perform steep turns $\pm 100'$, ± 10 knots, $\pm 5^\circ$ bank.
- ii. Student will setup and perform slow flight $\pm 100'$, $+10/-0$ knots
- iii. Student will demonstrate the appropriate procedures for stall setup and recovery with minimal loss of altitude.
- iv. Student will understand and perform the procedures for emergency approaches and landings.
- v. Student will perform landings with minimal instructor assistance, if any.

d. Postflight Discussion / Preview of Next Lesson / Homework Assignment

8. FLIGHT LESSON 6 (1.0 dual)

a. Lesson Objectives:

- i. Student will gain proficiency in takeoffs, landings, slips, go-arounds, and emergency approaches and landings.

b. Content:

i. Preflight Discussion and Ground Review:

1. Weather Information
2. Performance/Limitations
3. Aeromedical Factors

ii. Flight Review:

1. Preflight Inspection
2. Normal Takeoff
3. Emergency App. & Landing
4. Engine Starting
5. Normal Landing
6. System & Equipment Failure
7. Taxiing
8. Crosswind Takeoff
9. After Landing
10. Use of Checklist
11. Crosswind Landing
12. Parking / Securing
13. Radio Communications
14. Forward Slip To A Landing
15. Traffic Patterns
16. Go-Around
17. Airport Signs & Lighting

c. Completion Standards:

- i. Student will perform takeoffs, landings, and go-arounds without instructor assistance.
- ii. Student will fly a stabilized approach at $V_{REF} +15/-10$ knots with no more than 600 FPM descent.
- iii. Student will maintain centerline at all times.
- iv. Student will land on mains first with minimal bounce and no oscillations.
- v. Student will land within 600' of a specified point on the runway.
- vi. Student will use appropriate crosswind correction as necessary.

d. Postflight Discussion / Preview of Next Lesson / Homework Assignment

9. FLIGHT LESSON 7(1.3 dual)

a. Lesson Objectives:

- i. Student will be introduced to soft-field takeoffs and landings.

b. Content:

i. Preflight Discussion and Ground Review:

1. National Airspace System
2. Soft-Field Takeoff And Climb
3. Performance/Limitations
4. Soft-Field Landing

- ii. Flight Review:
 1. Preflight Inspection
 2. Traffic Patterns
 3. Crosswind Takeoff
 4. Engine Starting
 5. Airport Signs & Lighting
 6. Crosswind Landing
 7. Taxiing
 8. Normal Takeoff
 9. After Landing
 10. Use of Checklist
 11. Normal Landing
 12. Parking / Securing
 13. Radio Communications
- iii. Introduce:
 1. Soft-Field Takeoff And Climb
 2. Soft-Field Landing
- c. Completion Standards:
 - i. Student will fly a stabilized approach at $V_{REF} +10/-5$ knots with no more than 600 FPM descent.
 - ii. Student will maintain centerline at all times.
 - iii. Student will land on mains first with minimal bounce and no oscillations.
 - iv. Nose wheel will not touchdown until aircraft runs out of airspeed and elevator control.
 - v. Student will land within 400' of a specified point on the runway.
- d. Postflight Discussion / Preview of Next Lesson / Homework Assignment

10. FLIGHT LESSON 8 (1.3 dual)

- a. Lesson Objectives:
 - i. Student will review ground reference maneuvers, slow flight, stalls, emergency approaches and landings.
- b. Content:
 - i. Preflight Discussion and Ground Review:
 1. National Airspace System
 2. Performance/Limitations
 3. Spin Awareness
 - ii. Flight Review:
 1. Preflight Inspection
 2. Soft-Field Takeoff And Climb
 3. Slow Flight
 4. Engine Starting
 5. Soft-Field Landing
 6. Power-Off Stalls
 7. Taxiing
 8. Forward Slip To A Landing
 9. Power-On Stalls
 10. Use of Checklist
 11. Go-Around
 12. Emergency App. & Landing

13. Radio Communications
 14. Steep Turns
 15. System & Equipment Failure
 16. Traffic Patterns
 17. Rect. Course
 18. After Landing
 19. Airport Signs & Lighting
 20. S-Turns
 21. Parking / Securing
 22. Normal Takeoff
 23. Turns Around A Point
 24. Normal Landing
 25. Crosswind Takeoff
 26. Crosswind Landing
- c. Completion Standards:
- i. Student will perform ground reference maneuvers to $\pm 100'$ and 10 knots.
 - ii. Student will perform steep turns $\pm 100'$, ± 10 knots, $\pm 5^\circ$ bank.
 - iii. Student will setup and perform slow flight $\pm 100'$, $+10/-0$ knots
 - iv. Student will fly a stabilized approach at $V_{REF} +10/-5$ knots with no more than 600 FPM descent.
 - v. Student will land mains first on the centerline with minimal bounce and no oscillations.
 - vi. Nose wheel will not touchdown until aircraft runs out of airspeed and elevator control.
 - vii. Student will land within 400' of a specified point on the runway.
- d. Postflight Discussion / Preview of Next Lesson / Homework Assignment

11. STAGE CHECK, FLIGHT LESSON 9 (1.3 dual)

- a. Lesson Objectives:
- i. Student shall exhibit knowledge of the elements listed in the preflight discussion.
 - ii. Student shall perform all maneuvers or tasks in the flight review to PTS standards.
- b. Content:
- i. Preflight Discussion:
 1. Certificates And Documents
 2. Performance/Limitations
 3. Operations Of Ailerons
 4. Airworthiness Requirements
 5. Operations Of Systems
 6. Operations Of Flaps
 7. Weather Information
 8. Aeromedical Factors
 9. Operations Of Rudder
 10. National Airspace System
 11. Spin Awareness
 - ii. Flight Review:
 1. Preflight Inspection
 2. Crosswind Landing
 3. S-Turns
 4. Engine Starting

5. Forward Slip To A Landing
 6. Turns Around A Point
 7. Taxiing
 8. Go-Around
 9. Slow Flight
 10. Use of Checklist
 11. Straight And Level
 12. Power-Off Stalls
 13. Radio Communications
 14. Constant Airspeed Climbs
 15. Power-On Stalls
 16. Traffic Patterns
 17. Constant Airspeed Descents
 18. Emergency App. & Landing
 19. Normal Takeoff
 20. Turns To Heading
 21. System & Equipment Failure
 22. Normal Landing
 23. Steep Turns
 24. After Landing
 25. Crosswind Takeoff
 26. Rect. Course
 27. Parking / Securing
- c. Completion Standards:
- i. Student will exhibit knowledge of the elements listed in the preflight discussion.
 - ii. Student will perform all maneuvers or tasks in the flight review to PTS standards.
- d. Postflight Discussion / Preview of Next Lesson / Homework Assignment

12. FLIGHT LESSON 10 (0.5 dual, 0.6 solo)

- a. Lesson Objectives:
- i. The instructor will evaluate the student's performance to determine if the student can fly solo given the current conditions.
- b. Content:
- i. Preflight Discussion and Ground Review:
 1. Performance/Limitations
 2. Radio Communications
 3. Traffic Patterns
 4. Normal Takeoff
 5. Normal Landing
 6. After Landing
 7. Parking / Securing
 - ii. Flight Review:
 1. Performance/Limitations
 2. Traffic Patterns
 3. Preflight Inspection
 4. Normal Takeoff
 5. Engine Starting
 6. Normal Landing
 7. Taxiing

8. After Landing
 9. Use of Checklist
 10. Parking / Securing
 11. Radio Communications
- c. Completion Standards:
- i. The student will be allowed to go solo provided:
 - ii. Stage check on lesson nine is complete with no grades missing or less than a “3”
 - iii. The instructor evaluates at least three traffic patterns with no input or assistance necessary
 - iv. The instructor is confident that the student can competently perform takeoffs and landings given the current conditions
 - v. All paperwork is complete
- d. Postflight Discussion / Preview of Next Lesson / Homework Assignment

STAGE TWO – MANEUVERS AND LANDINGS (DUAL 9.4, SOLO 2.4)

1. **STAGE TWO OBJECTIVES:** The objective of stage two of Henderson State University's Private Pilot Certification Course is to:
 - a. Continue practicing ground reference and performance maneuvers
 - b. Train the student to perform short-field and soft-field takeoffs as well as short-field and soft-field landings as listed in the Private Pilot PTS to PTS standards
 - c. Train the student to perform the basic instrument maneuvers listed in the Private Pilot PTS to PTS standards

2. **STAGE TWO COMPLETION STANDARDS:** Stage two of Henderson State University's Private Pilot Certification Course is complete when the student:
 - a. Performs takeoffs and landings, as listed in the Private Pilot PTS to PTS standards
 - b. Performs the basic instrument maneuvers listed in the Private Pilot PTS to PTS standards

3. FLIGHT LESSON 1 (1.0 dual)

- a. Lesson Objectives:
 - i. Review ground reference maneuvers, performance maneuvers, takeoffs, and landings.
- b. Content:
 - i. Preflight Discussion and Ground Review:
 - 1. Certificates And Documents
 - 2. Weather Information
 - 3. Airport Signs & Lighting
 - 4. Airworthiness Requirements
 - 5. Performance/Limitations
 - ii. Flight Review:
 - 1. Preflight Inspection
 - 2. Normal Takeoff
 - 3. Rect. Course
 - 4. Engine Starting
 - 5. Normal Landing
 - 6. S-Turns
 - 7. Taxiing
 - 8. Crosswind Takeoff
 - 9. Turns Around A Point
 - 10. Before Takeoff Check
 - 11. Crosswind Landing
 - 12. After Landing
 - 13. Radio Communications
 - 14. Go-Around
 - 15. Parking / Securing
 - 16. Traffic Patterns
 - 17. Steep Turns
- c. Completion Standards:
 - i. Student will perform ground reference maneuvers to $\pm 100'$ and 10 knots.
 - ii. Student will perform steep turns $\pm 100'$, ± 10 knots, $\pm 5^\circ$ bank.
 - iii. Student will fly a stabilized approach at $V_{REF} + 10/-5$ knots with no more than 600 FPM descent.
 - iv. Student will maintain centerline at all times on mains first with minimal bounce and no oscillations.
 - v. Nose wheel will not touchdown until aircraft runs out of airspeed and elevator control.
 - vi. Student will land within 400' of a specified point on the runway.
- d. Postflight Discussion / Preview of Next Lesson / Homework Assignment

4. FLIGHT LESSON 2 (1.0 dual)

- a. Lesson Objectives:
 - i. Introduce the student to the flight training device (FTD).
 - ii. Introduce the student to VOR facilities and usage.
 - iii. Introduce the student to basic instrument flight.
- b. Content:
 - i. Preflight Discussion and Ground Review:
 - 1. VOR Usage (IR)

2. Constant Airspeed Descents (IR)
 3. Radar Services (IR)
 4. Turns To Heading (IR)
 5. Straight And Level (IR)
 6. Recovery From Unusual Attitudes (IR)
 7. Constant Airspeed Climbs (IR)
- ii. Introduce:
1. VOR Usage (IR)
 2. Constant Airspeed Descents (IR)
 3. Radar Services (IR)
 4. Turns To Heading (IR)
 5. Straight And Level (IR)
 6. Recovery From Unusual Attitudes (IR)
 7. Constant Airspeed Climbs (IR)
- c. Completion Standards:
- i. Student will fly and treat the FTD as though it was an aircraft.
 - ii. Student will exhibit a basic knowledge of VOR facilities and usage.
 - iii. Student will fly instrument maneuvers $\pm 300'$, $\pm 30^\circ$, ± 20 knots.
- d. Postflight Discussion / Preview of Next Lesson / Homework Assignment

5. FLIGHT LESSON 3 (1.0 dual)

- a. Lesson Objectives:
- i. Student will perform instrument maneuvers in the aircraft.
 - ii. Student will be introduced to short-field takeoffs and climbs.
- b. Content:
- i. Preflight Discussion and Ground Review:
 1. Certificates And Documents
 2. Straight And Level (IR)
 3. Airworthiness Requirements
 4. Constant Airspeed Climbs (IR)
 5. Weather Information
 6. Constant Airspeed Descents (IR)
 7. Performance/Limitations
 8. Turns To Heading (IR)
 9. Aeromedical Factors
 10. Recovery From Unusual Attitudes (IR)
 11. Short-Field Takeoff And Climb
 12. VOR Usage (IR)
 13. Short-Field Landing
 14. Radar Services (IR)
 - ii. Flight Review:
 1. Crosswind Takeoff
 2. Straight And Level (IR)
 3. Crosswind Landing
 4. Constant Airspeed Climbs (IR)
 5. After Landing
 6. Constant Airspeed Descents (IR)
 7. Parking / Securing
 8. Turns To Heading (IR)

- 9. VOR Usage (IR)
 - 10. Recovery From Unusual Attitudes (IR)
 - 11. Radar Services (IR)
 - iii. Introduce:
 - 1. Short-Field Takeoff And Climb
 - 2. Short-Field Landing
 - c. Completion Standards:
 - i. Student will exhibit a working knowledge of VOR facilities and usage.
 - ii. Student will fly instrument maneuvers $\pm 300'$, $\pm 30^\circ$, ± 20 knots.
 - iii. Student will fly a stabilized approach at $V_{REF} + 10/-5$ knots with no more than 600 FPM descent.
 - iv. Student will land mains first on the centerline with minimal bounce and no oscillations.
 - v. Student will land within 300' of a specified point on the runway.
 - d. Postflight Discussion / Preview of Next Lesson / Homework Assignment
6. FLIGHT LESSON 4 (1.0 dual)
- a. Lesson Objectives:
 - i. Student will gain proficiency in flying instrument maneuvers in the aircraft.
 - ii. Student will gain proficiency in short-field takeoffs and climbs.
 - b. Content:
 - i. Preflight Discussion and Ground Review:
 - 1. Certificates And Documents
 - 2. Weather Information
 - 3. Airworthiness Requirements
 - 4. Performance/Limitations
 - ii. Flight Review:
 - 1. Preflight Inspection
 - 2. Straight And Level (IR)
 - 3. Engine Starting
 - 4. Constant Airspeed Climbs (IR)
 - 5. Taxiing
 - 6. Constant Airspeed Descents (IR)
 - 7. Before Takeoff Check
 - 8. Turns To Heading (IR)
 - 9. Radio Communications
 - 10. Recovery From Unusual Attitudes (IR)
 - 11. Traffic Patterns
 - 12. VOR Usage (IR)
 - 13. Crosswind Takeoff
 - 14. Radar Services (IR)
 - 15. Crosswind Landing
 - 16. After Landing
 - 17. Short-Field Takeoff & Climb
 - 18. Parking / Securing
 - 19. Short-Field Landing
 - c. Completion Standards:
 - i. Student will fly instrument maneuvers $\pm 250'$, $\pm 25^\circ$, ± 15 knots

- ii. Student will fly a stabilized approach at $V_{REF} +10/-5$ knots with no more than 600 FPM descent.
- iii. Student will land mains first on the centerline with minimal bounce and no oscillations.
- iv. Student will land within 200' of a specified point on the runway.
- d. Postflight Discussion / Preview of Next Lesson / Homework Assignment

7. FLIGHT LESSON 5 (1.0 dual)

a. Lesson Objectives:

- i. Student will be introduced to the night environment.
- ii. Student will perform at least six takeoffs and landing to a full stop.

b. Content:

i. Preflight Discussion and Ground Review:

1. Certificates And Documents
2. Aeromedical Factors Relating to Night
3. Airworthiness Requirements
4. Preflight Inspection
5. Weather Information
6. Go-Around
7. Performance/Limitations
8. Emergency App. & Landing
9. Lighting Systems
10. Emergency Equipment and Survival Gear

ii. Flight Review:

1. Preflight Inspection
2. Straight And Level
3. Engine Starting
4. Constant Airspeed Climbs
5. Taxiing
6. Constant Airspeed Descents
7. Before Takeoff Check
8. Turns To Heading
9. Radio Communications
10. Navigation & Radar Services
11. Traffic Patterns
12. Emergency App. & Landing
13. Airport Signs & Lighting
14. Emergency Equipment and Survival Gear
15. Normal Takeoff
16. After Landing
17. Normal Landing
18. Parking / Securing
19. Crosswind Takeoff
20. Crosswind Landing

c. Completion Standards:

- i. Student will fly instrument maneuvers $\pm 200'$, $\pm 20^\circ$, ± 10 knots, except turns to headings will be $\pm 200'$, $\pm 10^\circ$, ± 10 knots $^\circ$.
- ii. Student will fly a stabilized approach at $V_{REF} +10/-5$ knots with no more than 600 FPM descent.

- iii. Student will land mains first on the centerline with minimal bounce and no oscillations.
- iv. Student will land within 400' of a specified point on the runway.
- d. Postflight Discussion / Preview of Next Lesson / Homework Assignment

8. FLIGHT LESSON 6 (1.2 solo)

- a. Lesson Objectives:
 - i. The student will practice ground reference maneuvers and landings.
- b. Content:
 - i. Preflight Discussion and Ground Review:
 - 1. Certificates And Documents
 - 2. Weather Information
 - 3. Airworthiness Requirements
 - 4. Performance/Limitations
 - ii. Flight Review:
 - 1. Engine Starting
 - 2. Normal Takeoff
 - 3. S-Turns
 - 4. Taxiing
 - 5. Normal Landing
 - 6. Turns Around A Point
 - 7. Before Takeoff Check
 - 8. Crosswind Takeoff
 - 9. After Landing
 - 10. Radio Communications
 - 11. Crosswind Landing
 - 12. Parking / Securing
 - 13. Traffic Patterns
 - 14. Rect. Course
- c. Completion Standards:
 - i. Student will perform ground reference maneuvers to $\pm 100'$ and 10 knots.
 - ii. Student will fly a stabilized approach at $V_{REF} +10/-5$ knots with no more than 600 FPM descent.
 - iii. Student will land mains first on the centerline with minimal bounce and no oscillations.
 - iv. Nose wheel will not touchdown until aircraft runs out of airspeed and elevator control.
 - v. Student will land within 400' of a specified point on the runway.
- d. Postflight Discussion / Preview of Next Lesson / Homework Assignment

9. FLIGHT LESSON 7 (0.8 DUAL)

- a. Lesson Objectives:
 - i. Student will gain proficiency in instrument maneuvers and VOR tracking.
- b. Content:
 - i. Preflight Discussion and Ground Review:
 - 1. Straight And Level (IR)
 - 2. Constant Airspeed Climbs (IR)
 - 3. Constant Airspeed Descents (IR)
 - 4. Turns To Heading (IR)

5. Recovery From Unusual Attitudes (IR)
6. VOR Usage (IR)
7. Radar Services (IR)
- ii. Flight Review:
 1. Straight And Level (IR)
 2. Constant Airspeed Climbs (IR)
 3. Constant Airspeed Descents (IR)
 4. Turns To Heading (IR)
 5. Recovery From Unusual Attitudes (IR)
 6. VOR Usage (IR)
 7. Radar Services (IR)
- c. Completion Standards:
 - i. Student will fly instrument maneuvers $\pm 250'$, $\pm 25^\circ$, ± 15 knots, except turns to headings will be $250'$, $\pm 15^\circ$, ± 15 knots.
 - ii. Student will tune and identify a VOR station as well as intercept and track a radial $\pm 8^\circ$.
- d. Postflight Discussion / Preview of Next Lesson / Homework Assignment

10. FLIGHT LESSON 8 (0.8 dual)

- a. Lesson Objectives:
 - i. Student will be introduced to ADF usage and homing (with wind).
- b. Content:
 - i. Preflight Discussion and Ground Review:
 1. ADF Tuning / Usage
 2. NDB Homing
 3. Flight Review:
 4. ADF Tuning / Usage
 5. NDB Homing
 6. Straight And Level (IR)
- c. Completion Standards:
 - i. Student will straight and level flight $\pm 150'$, $\pm 15^\circ$, ± 10 knots.
 - ii. Student will tune and identify an NDB station and home to it (with wind).
- d. Postflight Discussion / Preview of Next Lesson / Homework Assignment

11. FLIGHT LESSON 9 (1.2 solo)

- a. Lesson Objectives:
 - i. Student will practice ground reference maneuvers, performance maneuvers, slow flight, stalls, normal takeoff and landings, soft-field takeoff and landings.
- b. Content:
 - i. Preflight Discussion and Ground Review:
 1. Certificates And Documents
 2. Weather Information
 3. Airworthiness Requirements
 4. Performance/Limitations
 - ii. Flight Review:
 1. Preflight Inspection
 2. Normal Takeoff
 3. Rect. Course
 4. Engine Starting

5. Normal Landing
 6. S-Turns
 7. Taxiing
 8. Crosswind Takeoff
 9. Turns Around A Point
 10. Before Takeoff Check
 11. Crosswind Landing
 12. Slow Flight
 13. Radio Communications
 14. Soft-Field Takeoff And Climb
 15. Power-Off Stalls
 16. Airport Signs & Lighting
 17. Soft-Field Landing
 18. Power-On Stalls
 19. Traffic Patterns
 20. Steep Turns
 21. After Landing
 22. Parking / Securing
- c. Completion Standards:
- i. Student will perform ground reference maneuvers to $\pm 100'$ and 10 knots.
 - ii. Student will perform steep turns $\pm 100'$, ± 10 knots, $\pm 5^\circ$ bank.
 - iii. Student will setup and perform slow flight $\pm 100'$, $+10/-0$ knots
 - iv. Student will fly a stabilized approach at $V_{REF} +10/-5$ knots with no more than 600 FPM descent.
 - v. Student will land mains first on the centerline with minimal bounce and no oscillations.
 - vi. Nose wheel will not touchdown until aircraft runs out of airspeed and elevator control.
 - vii. Student will land within 400' of a specified point on the runway.
- d. Postflight Discussion / Preview of Next Lesson / Homework Assignment

12. FLIGHT LESSON 10 (0.8 dual)

- a. Lesson Objectives:
- i. Student will gain proficiency in ADF usage.
 - ii. Student will be introduced to NDB bearing tracking (with wind).
- b. Content:
- i. Preflight Discussion and Ground Review:
 1. ADF Tuning / Usage
 2. Bracketing
 3. Tracking NDB Bearings
 - ii. Flight Review:
 1. ADF Tuning / Usage
 2. Tracking NDB Bearings
 3. Straight And Level (IR)
- c. Completion Standards:
- i. Student will straight and level flight $\pm 150'$, $\pm 15^\circ$, ± 10 knots.
 - ii. Student will tune and identify an NDB station and track a bearing (with wind) by using bracketing.

d. Postflight Discussion / Preview of Next Lesson / Homework Assignment

13. FLIGHT LESSON 11 (0.8 dual)

a. Lesson Objectives:

- i. Student will gain proficiency in VOR and ADF usage.
- ii. Student will be gain proficiency in VOR radial tracking (with wind).
- iii. Student will be gain proficiency in NDB bearing tracking (with wind).

b. Content:

i. Preflight Discussion and Ground Review:

1. Bracketing
2. Tracking NDB Bearings
3. Tracking VOR Radials

ii. Flight Review:

1. Bracketing
2. Tracking NDB Bearings
3. Tracking VOR Radials
4. Straight And Level (IR)

c. Completion Standards:

- i. Student will straight and level flight $\pm 150'$, $\pm 15^\circ$, ± 10 knots.
- ii. Student will tune and identify an NDB station and track a bearing (with wind) by using bracketing.
- iii. Student will tune and identify a VOR station and track a radial (with wind) by using bracketing.

d. Postflight Discussion / Preview of Next Lesson / Homework Assignment

14. STAGE CHECK, FLIGHT LESSON 12 (1.2 dual)

a. Lesson Objectives:

- i. Student shall exhibit knowledge of the elements listed in the preflight discussion.
- ii. Student shall perform all maneuvers or tasks in the flight review to PTS standards.

b. Content:

i. Preflight Discussion and Ground Review:

1. Certificates And Documents
2. Short-Field Takeoff And Climb
3. Airworthiness Requirements
4. Short-Field Landing
5. Weather Information
6. Aeromedical Factors Relating to Night
7. Performance/Limitations
8. Straight And Level (IR)
9. Soft-Field Takeoff And Climb
10. Recovery From Unusual Attitudes (IR)
11. Soft-Field Landing
12. VOR Usage (IR)

ii. Flight Review:

1. Preflight Inspection
2. Short-Field Takeoff And Climb
3. Engine Starting
4. Short-Field Landing
5. Taxiing

6. Straight And Level (IR)
 7. Before Takeoff Check
 8. Constant Airspeed Climbs (IR)
 9. Radio Communications
 10. Constant Airspeed Descents (IR)
 11. Traffic Patterns
 12. Turns To Heading (IR)
 13. Airport Signs & Lighting
 14. Recovery From Unusual Attitudes (IR)
 15. Crosswind Takeoff
 16. VOR Usage (IR)
 17. Crosswind Landing
 18. Radar Services (IR)
 19. Soft-Field Takeoff And Climb
 20. After Landing
 21. Soft-Field Landing
 22. Parking / Securing
- c. Completion Standards:
- i. Student will exhibit knowledge of the elements listed in the preflight discussion.
 - ii. Student will perform all maneuvers or tasks in the flight review to PTS standards
- d. Postflight Discussion / Preview of Next Lesson / Homework Assignment

STAGE THREE – CROSS-COUNTRY (DUAL 12.9, SOLO 2.0)

1. **STAGE THREE OBJECTIVES:** The objective of stage three of Henderson State University's Private Pilot Certification Course is to:
 - a. Train the student to perform the preflight preparation items listed in the Private Pilot PTS but not previously covered in stage one or two to PTS standards, including:
 - i. Cross-country flight planning
 - b. Train the student to perform navigation procedures listed in the Private Pilot PTS to PTS standards
 - c. Train the student to perform the night operations in the Private Pilot PTS to PTS standards

2. **STAGE THREE COMPLETION STANDARDS:** Stage three of Henderson State University's Private Pilot Certification Course is complete when the student:
 - a. Performs the preflight preparation items listed in the Private Pilot PTS but not previously covered in stage one to PTS standards, including cross-country flight planning
 - b. Performs navigation procedures listed in the Private Pilot PTS to PTS standards and performs the solo cross country as prescribed in lesson thirteen
 - c. Performs the night operations in the Private Pilot PTS to PTS standards
 - d. Following stage three are practice and review flights preparing the student for the end-of-course stage check. These review flights shall cover all maneuvers listed in the Private Pilot PTS. During these review flights the flight instructor should ensure that the student meets PTS standards

3. FLIGHT LESSON 1 (1.6 dual)

- a. Lesson Objectives:
 - i. Student will be introduced to cross-country flight planning, pilotage, and dead reckoning.
 - ii. Student will learn how to use the mechanical E-6B for calculations.
- b. Content:
 - i. Preflight Discussion and Ground Review:
 - 1. Certificates And Documents
 - 2. National Airspace System
 - 3. E-6B Usage
 - 4. Airworthiness Requirements
 - 5. Cross-country Planning
 - 6. Weather Information
 - 7. Performance/Limitations
 - ii. Flight Review:
 - 1. Preflight Inspection
 - 2. Traffic Patterns
 - 3. Airport Signs & Lighting
 - 4. Engine Starting
 - 5. Normal Takeoff
 - 6. Emergency Equipment / Survival Gear
 - 7. Taxiing
 - 8. Normal Landing
 - 9. After Landing
 - 10. Before Takeoff Check
 - 11. Crosswind Takeoff
 - 12. Parking / Securing
 - 13. Radio Communications
 - 14. Crosswind Landing
 - iii. Introduce:
 - 1. Pilotage & Dead Reckoning
 - 2. Cockpit Management
 - 3. Flight Following
- c. Completion Standards:
 - i. Student will understand how to use the E-6B to compute TAS and ground speed while en-route.
 - ii. Student will understand how to update the navlog at each checkpoint.
 - iii. Student remains within 5 miles of flight planned route.
- d. Postflight Discussion / Preview of Next Lesson / Homework Assignment

4. FLIGHT LESSON 2 (1.7 dual)

- a. Lesson Objectives:
 - i. Student will be introduced to VOR navigation and the use of flight following
 - ii. Student will gain proficiency in cross-country flight planning, pilotage, and dead reckoning.
 - iii. Student will be introduced to operations at controlled airports.
- b. Content:
 - i. Preflight Discussion and Ground Review:
 - 1. Certificates And Documents

2. Weather Information
3. Cross-country Planning
4. Airworthiness Requirements
5. National Airspace System
- ii. Flight Review:
 1. Preflight Inspection
 2. Performance/Limitations
 3. Cockpit Management
 4. Engine Starting
 5. Normal Takeoff
 6. Emergency Equipment and Survival Gear
 7. Taxiing
 8. Normal Landing
 9. After Landing
 10. Before Takeoff Check
 11. Crosswind Takeoff
 12. Parking / Securing
 13. Radio Communications
 14. Crosswind Landing
 15. Airport Signs & Lighting
 16. Traffic Patterns
 17. Pilotage & Dead Reckoning
 18. Introduce:
 19. Pilotage & Dead Reckoning
 20. Cockpit Management
 21. Lost Procedures
 22. VOR Usage
- c. Completion Standards:
 - i. Student uses E-6B to compute TAS and ground speed while en-route.
 - ii. Student updates navlog at each checkpoint.
 - iii. Student remains within 4 miles of flight planned route.
 - iv. Student arrives at checkpoints within five minutes of ETA.
- d. Postflight Discussion / Preview of Next Lesson / Homework Assignment

5. FLIGHT LESSON 3 (2.0 dual)

- a. Lesson Objectives:
 - i. Student will be introduced to lost procedures and GPS usage.
 - ii. Student will gain proficiency in cross-country flight planning, pilotage, and dead reckoning.
 - iii. Student will gain proficiency in operations at controlled airports.
- b. Content:
 - i. Preflight Discussion and Ground Review:
 1. Certificates And Documents
 2. National Airspace System
 3. Tower Communications
 4. Airworthiness Requirements
 5. Cross-country Planning
 6. Controlled Airport Operations
 7. Weather Information

- ii. Flight Review:
 - 1. Performance/Limitations
 - 2. Traffic Patterns
 - 3. Pilotage & Dead Reckoning
 - 4. Aeromedical Factors
 - 5. Airport Signs & Lighting
 - 6. VOR Usage
 - 7. Preflight Inspection
 - 8. Crosswind Takeoff
 - 9. Lost Procedures
 - 10. Engine Starting
 - 11. Crosswind Landing
 - 12. Emergency Equipment / Survival Gear
 - 13. Taxiing
 - 14. Short-Field Takeoff And Climb
 - 15. After Landing
 - 16. Before Takeoff Check
 - 17. Short-Field Landing
 - 18. Parking / Securing
 - 19. Radio Communications
 - 20. Cockpit Management
- iii. Introduce:
 - 1. Diversion
 - 2. GPS Usage
- c. Completion Standards:
 - i. Student accurately and competently uses E-6B to compute TAS and ground speed while en-route.
 - ii. Student updates navlog at each checkpoint.
 - iii. Student remains within 3 miles of flight planned route.
 - iv. Student arrives at checkpoints within five minutes of ETA.
 - v. Student able to locate aircraft position when lost and then navigate to a suitable airport without the aid of the GPS.
- d. Postflight Discussion / Preview of Next Lesson / Homework Assignment

6. FLIGHT LESSON 4 (1.5 dual)

- a. Lesson Objectives:
 - i. Student will be introduced to diversions.
 - ii. Student will gain proficiency in cross-country flight planning, pilotage, and dead reckoning.
- b. Content:
 - i. Preflight Discussion and Ground Review:
 - 1. Certificates And Documents
 - 2. National Airspace System
 - 3. Airworthiness Requirements
 - 4. Cross-country Planning
 - 5. Weather Information
 - ii. Flight Review:
 - 1. Performance/Limitations
 - 2. Airport Signs & Lighting

3. VOR Usage
 4. Aeromedical Factors
 5. Crosswind Takeoff
 6. GPS Usage
 7. Preflight Inspection
 8. Crosswind Landing
 9. Diversion
 10. Engine Starting
 11. Soft-Field Takeoff And Climb
 12. Lost Procedures
 13. Taxiing
 14. Soft-Field Landing
 15. Emergency Equipment and Survival Gear
 16. Before Takeoff Check
 17. Traffic Patterns
 18. After Landing
 19. Radio Communications
 20. Pilotage & Dead Reckoning
 21. Parking / Securing
 22. Cockpit Management
- c. Completion Standards:
- i. Student accurately and competently uses E-6B to compute TAS and ground speed while en-route.
 - ii. Student updates navlog at each checkpoint.
 - iii. Student remains within 3 miles of flight planned route.
 - iv. Student arrives at checkpoints within five minutes of ETA.
 - v. Student able to locate aircraft position when lost or diverted and then navigate to a suitable airport both with and without the aid of the GPS.
- d. Postflight Discussion / Preview of Next Lesson / Homework Assignment

7. STAGE CHECK, FLIGHT LESSON 5 (1.6 dual)

- a. Lesson Objectives:
 - i. To accurately navigate by using pilotage, dead reckoning, VOR navigation, and GPS navigation.
- b. Content:
 - i. Preflight Discussion and Ground Review:
 1. Certificates And Documents
 2. National Airspace System
 3. Airworthiness Requirements
 4. Cross-country Planning
 5. Weather Information
 - ii. Flight Review:
 1. Performance/Limitations
 2. Airport Signs & Lighting
 3. VOR Usage
 4. Aeromedical Factors
 5. Crosswind Takeoff
 6. GPS Usage
 7. Preflight Inspection

8. Crosswind Landing
 9. Diversion
 10. Engine Starting
 11. Normal Takeoff
 12. Lost Procedures
 13. Taxiing
 14. Normal Landing
 15. Emergency Equipment and Survival Gear
 16. Before Takeoff Check
 17. Traffic Patterns
 18. After Landing
 19. Radio Communications
 20. Pilotage & Dead Reckoning
 21. Parking / Securing
 22. Cockpit Management
- c. Completion Standards:
- i. Student accurately and competently uses E-6B to compute TAS and ground speed while en-route.
 - ii. Student updates navlog at each checkpoint.
 - iii. Student remains within 3 miles of flight planned route.
 - iv. Student arrives at checkpoints within five minutes of ETA.
 - v. Student able to locate aircraft position when lost or diverted and then navigate to a suitable airport both with and without the aid of the GPS.
- d. Postflight Discussion / Preview of Next Lesson / Homework Assignment

8. FLIGHT LESSON 6 (2.0 solo)

- a. Lesson Objectives:
- i. Student will gain solo cross-country experience.
 - ii. Student will perform three takeoffs and landings at a controlled airport.
- b. Content:
- i. Preflight Discussion and Ground Review:
 1. Certificates And Documents
 2. Weather Information
 3. Airworthiness Requirements
 4. National Airspace System
 - ii. Flight Review:
 1. Performance/Limitations
 2. Traffic Patterns
 3. VOR & GPS Navigation
 4. Aeromedical Factors
 5. Airport Signs & Lighting
 6. Diversion
 7. Preflight Inspection
 8. Normal Takeoff
 9. Lost Procedures
 10. Engine Starting
 11. Normal Landing
 12. Emergency Equipment and Survival Gear
 13. Taxiing

14. Crosswind Takeoff
 15. After Landing
 16. Before Takeoff Check
 17. Crosswind Landing
 18. Parking / Securing
 19. Radio Communications
 20. Pilotage & Dead Reckoning
 21. Cockpit Management
- c. Completion Standards:
- i. Student completes solo cross-country as planned without incident.
 - ii. Student completes three takeoffs and landings at a controlled tower.
- d. Postflight Discussion / Preview of Next Lesson / Homework Assignment
9. FLIGHT LESSON 7 (1.5 dual)
- a. Lesson Objectives:
- i. Student will review the listed maneuvers in preparation for the private pilot practical test.
- b. Content:
- i. Preflight Discussion and Ground Review:
 1. Certificates And Documents
 2. Weather Information
 3. Spin Awareness
 4. Airworthiness Requirements
 5. Performance/Limitations
 - ii. Flight Review:
 1. Preflight Inspection
 2. Crosswind Takeoff
 3. Slow Flight
 4. Engine Starting
 5. Crosswind Landing
 6. Power-Off Stalls
 7. Taxiing
 8. Forward Slip To A Landing
 9. Power-On Stalls
 10. Before Takeoff Check
 11. Go-Around
 12. Emergency App. & Landing
 13. Radio Communications
 14. Rect. Course
 15. System & Equipment Failure
 16. Traffic Patterns
 17. S-Turns
 18. After Landing
 19. Normal Takeoff
 20. Turns Around A Point
 21. Parking / Securing
 22. Normal Landing
 23. Steep Turns
- c. Completion Standards:

- i. Student will perform the listed maneuvers to PTS standards.
- d. Postflight Discussion / Preview of Next Lesson / Homework Assignment

10. FLIGHT LESSON 8 (1.5 dual)

- a. Lesson Objectives:
 - i. Student will review the listed maneuvers in preparation for the private pilot practical test.
- b. Content:
 - i. Preflight Discussion and Ground Review:
 - 1. Certificates And Documents
 - 2. Weather Information
 - 3. Airworthiness Requirements
 - 4. Performance/Limitations
 - ii. Flight Review:
 - 1. Preflight Inspection
 - 2. Slow Flight
 - 3. Engine Starting
 - 4. Power-Off Stalls
 - 5. Taxiing
 - 6. Power-On Stalls
 - 7. Before Takeoff Check
 - 8. Spin Awareness
 - 9. Radio Communications
 - 10. Steep Turns
 - 11. Traffic Patterns
 - 12. Straight And Level (IR)
 - 13. Airport Signs & Lighting
 - 14. Constant Airspeed Climbs (IR)
 - 15. Crosswind Takeoff
 - 16. Constant Airspeed Descents (IR)
 - 17. Crosswind Landing
 - 18. Turns To Heading (IR)
 - 19. Soft-Field Takeoff And Climb
 - 20. Recovery From Unusual Attitudes (IR)
 - 21. Soft-Field Landing
 - 22. Navigation & Radar Services (IR)
 - 23. Short-Field Takeoff And Climb
 - 24. After Landing
 - 25. Short-Field Landing
 - 26. Parking / Securing
- c. Completion Standards:
 - i. Student will perform the listed maneuvers to PTS standards.
- d. Postflight Discussion / Preview of Next Lesson / Homework Assignment

11. END-OF-COURSE CHECK, FLIGHT LESSON 9 (1.5 dual)

- a. Lesson Objectives:
 - i. Student shall exhibit knowledge of the elements listed in the preflight discussion.
 - ii. Student shall perform all maneuvers or tasks in the flight review to PTS standards.
- b. Content:

- i. Preflight Discussion and Ground Review:
 1. Certificates And Documents
 2. Weather Information
 3. Operations Of Systems
 4. Airworthiness Requirements
 5. National Airspace System
 6. Night Operations
 7. Performance/Limitations
 8. Cross-country Planning
 9. Spin Awareness
 10. Aeromedical Factors
 11. Emergency Equipment / Survival Gear
- ii. Flight Review:
 1. Preflight Inspection
 2. Soft-Field Takeoff And Climb
 3. Pilotage & Dead Reckoning
 4. Engine Starting
 5. Soft-Field Landing
 6. Navigation Systems & Radar Services
 7. Taxiing
 8. Short-Field Takeoff & Climb
 9. Diversion
 10. Before Takeoff Check
 11. Short-Field Landing
 12. Lost Procedures
 13. Radio Communications
 14. Forward Slip To Landing
 15. Straight And Level (IR)
 16. Traffic Patterns
 17. Go-Around
 18. Constant Airspeed Climbs (IR)
 19. Airport Signs & Lighting
 20. Steep Turns
 21. Constant Airspeed Descents (IR)
 22. Use of Checklists
 23. Rect. Course
 24. Turns To Heading (IR)
 25. Cockpit Management
 26. S-Turns
 27. Unusual Attitude Recovery (IR)
 28. Normal Takeoff
 29. Turns Around A Point
 30. Navigation Systems and Radar Services (IR)
 31. Normal Landing
 32. Slow Flight
 33. Emergency App. & Landing
 34. Crosswind Takeoff
 35. Power-Off Stalls
 36. System & Equipment Failure

- 37. Crosswind Landing
- 38. Power-On Stalls
- 39. After Landing/Parking/Securing
- c. Completion Standards:
 - i. Student will exhibit knowledge of the elements listed in the preflight discussion.
 - ii. Student will perform all maneuvers or tasks in the flight review to PTS standards.
- d. Postflight Discussion / Preview of Next Lesson / Homework Assignment

TRAINING COURSE OUTLINE – TRAINING SYLLABUS
PRIVATE PILOT CERTIFICATION COURSE AIRPLANE SINGLE-ENGINE LAND
GROUND TRAINING: 48 HOURS

1. GROUND TRAINING COURSE OBJECTIVES. The student will obtain the necessary aeronautical knowledge and meet the prerequisites specified in FAR Part 61 for a private pilot written test.

2. GROUND TRAINING COURSE COMPLETION STANDARDS. The student will demonstrate through practical tests, written tests, and records that he/she meets the prerequisites specified in FAR Part 61, and has the knowledge necessary to pass the private pilot written test.

STAGE I
INTRODUCTION, POWER PLANTS, AERODYNAMICS, AERONAUTICAL CHARTS AND
AEROSPACE AND RADIO PROCEDURES

1. **STAGE I OBJECTIVES:** The student will be introduced to pilot training, aviation opportunities, human factors in aviation, and become familiar with airplane systems and aerodynamic principles, as well as the flight environment. The student also will obtain a basic knowledge of safety of flight, airports, aeronautical charts, airspace, radio communications, and air traffic control services, including the use of radar. In addition, the student will learn radio procedures and the common sources of flight information.

2. **STAGE I COMPLETION STANDARDS.** This stage is complete when the student has completed the Stage I written exam with a minimum passing score of 70%, and the instructor has reviewed each incorrect response to ensure complete understanding before the student progresses to Stage II.

3. GROUND LESSON 1 – PILOT TRAINING/AVIATION OPPORTUNITIES

- a. Time: 1 hour.
- b. Reference:
 - i. Jeppesen, Private Pilot Manual “Chapter 1 Section A, Pilot Training, Section B, Aviation Opportunities”
- c. LESSON OBJECTIVES: The student will:
 - i. Become familiar with pilot training and aviation opportunities
 - ii. Gain a basic understanding of the school’s pilot training program
- d. ACADEMIC CONTENT:
 - i. SECTION A – PILOT TRAINING
 - 1. How to Get Started
 - 2. Role of the FAA
 - 3. Fixed-Base Operators (FBOs)
 - 4. Eligibility Requirements
 - 5. Types of Training Available
 - 6. Phases of Training
 - 7. Private Pilot Privileges and Limitations
 - ii. SECTION B – AVIATION OPPORTUNITIES
 - 1. New Experiences
 - 2. Aviation Organizations
 - 3. Category/Class Ratings
 - 4. Additional Pilot Certificates
 - 5. Aviation Careers
- e. COMPLETION STANDARDS: The student will indicate, through oral quizzing, familiarity with pilot training programs, and opportunities in aviation. In addition, the instructor will make sure the student has a basic understanding of policies and procedures applicable to the school’s pilot training program.
- f. STUDY ASSIGNMENT: Private Pilot Manual, “Chapter 1, Section C – Introduction to Human Factors”.

4. GROUND LESSON 2 – INTRODUCTION TO HUMAN FACTORS

- a. Time: 1 hour
- b. Reference:
 - i. Jeppesen, Private Pilot Manual, “Chapter 1, Section C – Introduction to Human Factors”
- c. LESSON OBJECTIVE:
 - i. The student will become familiar with human factors in aviation
- d. ACADEMIC CONTENT:
 - i. SECTION C – INTRODUCTION TO HUMAN FACTORS
 - 1. Aeronautical Decision Making
 - 2. Crew Resource Management Training
 - 3. Pilot-in-Command Responsibility
 - 4. Communication
 - 5. Resource Use
 - 6. Workload Management
 - 7. Situational Awareness
 - 8. Aviation Physiology
 - 9. Alcohol, Drugs, and Performance
 - 10. Fitness for Flight

- e. COMPLETION STANDARDS: The student will indicate, through oral quizzing, familiarity with human factors in aviation. In addition, the instructor will make sure the student has a basic understanding of policies and procedures applicable to the school's pilot training program.
- f. STUDY ASSIGNMENT: Private Pilot Manual, "Chapter 2, Section A, Airplanes"

5. GROUND LESSON 3 – AIRPLANES

- a. Time: 1 hour
- b. References:
 - i. Text Reference: Jeppesen, Private Pilot Manual, "Chapter 2 Section A Airplanes"
 - ii. Video Reference: Jeppesen, Private Video Part 1, "Fundamental of Flight, Airplane Systems-Airplanes"
- c. LESSON OBJECTIVE:
 - i. Gain a basic understanding of the main airplane components and systems
- d. ACADEMIC CONTENT:
 - i. SECTION A – Airplanes
 - 1. Fuselage
 - 2. Wings
 - 3. Empennage
 - 4. Landing Gear
 - 5. Engine/Propeller
 - 6. Pilot's Operating Handbook (POH)
- e. COMPLETION STANDARDS: Demonstrate understanding during oral quizzing by instructor at completion of lesson. Student completes Chapter 2 questions for Section A with a minimum passing score of 70%. Instructor reviews incorrect responses to ensure complete student understanding.
- f. STUDY ASSIGNMENT: Private Pilot Manual, "Chapter 2, Section B, The Power Plant and Related Systems"

6. GROUND LESSON 4 – POWERPLANT AND RELATED SYSTEMS

- a. Time: 1 hour
- b. References:
 - i. Text Reference: Jeppesen, Private Pilot Manual "Chapter 2, Section B, The Powerplant and Related Systems"
 - ii. Video Reference: Jeppesen, Private Pilot Video Part 1, "Fundamental of Flight, Airplane Systems; The Powerplant and Related Systems"
- c. LESSON OBJECTIVE:
 - i. Learn about the powerplant and related systems
- d. ACADEMIC CONTENT:
 - i. SECTION B – THE POWERPLANT AND RELATED SYSTEMS
 - 1. Reciprocating Engine
 - 2. Induction Systems
 - 3. Supercharging and Turbocharging
 - 4. Ignition Systems
 - 5. Fuel Systems
 - 6. Refueling
 - 7. Oil Systems
 - 8. Cooling Systems
 - 9. Exhaust Systems

- e. COMPLETION STANDARDS: Demonstrate understanding during oral quizzing by instructor at completion of lesson. Student completes Chapter 2 Questions for Section B with a minimum passing score of 70%. Instructor reviews incorrect responses to ensure complete student understanding.
- f. STUDY ASSIGNMENT: Private Pilot Manual Chapter 2 Section Flight Instruments

7. GROUND LESSON 5 – FLIGHT INSTRUMENTS

- a. Time: 1 hour
- b. References:
 - i. Text Reference: Jeppesen, Private Pilot Manual, “Chapter 2, Section C, Flight Instruments”
 - ii. Video Reference: Jeppesen, Pilot Video Part 1, “Fundamentals of Flight. Airplane Systems Flight Instruments”
- c. LESSON OBJECTIVE:
 - i. Become familiar with flight instrument functions and operating characteristics, including errors and common malfunctions
- d. ACADEMIC CONTENT:
 - i. SECTION C – FLIGHT INSTRUMENTS
 - 1. Pitot-Static Instruments
 - 2. Airspeed Indicator
 - 3. Altimeter
 - 4. Vertical Speed Indicator
 - 5. Gyroscopic Instruments
 - 6. Magnetic Compass
- e. COMPLETION STANDARDS: Demonstrate understanding during oral quizzing by instructor at completion of lesson. Student completes Chapter 2 questions for Section C with a minimum passing score of 70%. Instructor reviews incorrect responses to ensure complete student understanding prior to progression to Ground Lesson 7.
- f. STUDY ASSIGNMENT: Private Pilot Manual, “Chapter 3, Section A, Four Forces of Flight”

8. GROUND LESSON 6 – FOUR FORCES OF FLIGHT

- a. Time: 1 hour
- b. References:
 - i. Text Reference: Jeppesen, Private Pilot Manual, “Chapter 3, Section A, Four Forces of Flight”
 - ii. Video Reference: Jeppesen, Pilot Video, Part 1, “Fundamentals of Flight, Aerodynamic Principles, Four Forces of Flight”
- c. LESSON OBJECTIVE:
 - i. Become familiar with the four forces of flight
- d. ACADEMIC CONTENT:
 - i. SECTION A – FOUR FORCES OF FLIGHT
 - 1. Lift
 - 2. Airfoils
 - 3. Pilot Control of Lift
 - 4. Weight
 - 5. Thrust
 - 6. Drag
 - 7. Ground Effect

- e. COMPLETION STANDARDS: Demonstrate understanding during oral quizzing by instructor at completion of lesson. Student completes Chapter 3 questions for Section A, with a minimum passing score of 70%. Instructor reviews incorrect responses to ensure complete student understanding prior to progression to Ground Lesson 7.
- f. STUDY ASSIGNMENTS: Private Pilot Manual, “Chapter 3, Section B, Stability”

9. GROUND LESSON 7 – STABILITY

- a. Time: 1 hour
- b. References:
 - i. Text Reference: Jeppesen, Private Pilot Manual, “Chapter 3, Section B, Stability
 - ii. Video Reference: Jeppesen, Private Pilot Video Part I, “Aerodynamic Principles, Stability”
- c. LESSON OBJECTIVES:
 - i. Become familiar with the aerodynamic principles of stability, maneuvering flight, and load factor
 - ii. Gain a basic understanding of stall/spin characteristics as they relate to training airplanes
 - iii. Learn the importance of prompt recognition of stall indications
- d. ACADEMIC CONTENT:
 - i. SECTION B – STABILITY
 - 1. Three Axes of Flight
 - 2. Longitudinal Stability
 - 3. Center of Gravity Position
 - 4. Lateral Stability
 - 5. Directional Stability
 - 6. Stalls
 - 7. Spins
- e. COMPLETION STANDARDS: Demonstrate understanding during oral quizzing by instructor at completion of lesson. Student completes Chapter 3 questions for Section B with a minimum passing score of 70%. Instructor reviews incorrect responses to ensure complete student understanding prior to progression to Ground Lesson 8.
- f. STUDY ASSIGNMENT: Private Pilot Manual, “Chapter 3, Section C, Aerodynamics of Maneuvering Flight”

10. GROUND LESSON 8 – AERODYNAMICS OF MANEUVERING FLIGHT

- a. Time: 1 hour
- b. References:
 - i. Text Reference: Jeppesen, Private Pilot Manual, “Chapter 3, Section C, Aerodynamics of Maneuvering Flight”
 - ii. Video Reference: Jeppesen, Private Pilot Video, “Aerodynamic Principles, Aerodynamics of Maneuvering Flight”
- c. LESSON OBJECTIVE:
 - i. Become familiar with the Aerodynamics of Maneuvering Flight
- d. ACADEMIC CONTENT:
 - i. SECTION C – AERODYNAMICS OF MANEUVERING FLIGHT
 - 1. Climbing Flight
 - 2. Left-Turning Tendencies
 - 3. Descending Flight
 - 4. Turning Flight

5. Load Factor

- e. COMPLETION STANDARDS: Demonstrate understanding during oral quizzing by instructor at completion of lesson. Student completes Chapter 3 questions for Section C with a minimum passing score of 70%. Instructor reviews incorrect responses to ensure complete student understanding prior to progression to Ground Lesson 9.
- f. STUDY ASSIGNMENT: Private Pilot Manual, “Chapter 4, Section A, Safety of Flight”

11. GROUND LESSON 9 – SAFETY OF FLIGHT

- a. Time: 1 hour
- b. References:
 - i. Text Reference: Jeppesen, Private Pilot Manual, “Chapter 4, Section A, Safety of Flight”
 - ii. Video Reference: Jeppesen, Private Pilot Video, “The Flight Environment, Safety of Flight”
- c. LESSON OBJECTIVES:
 - i. Understand important safety considerations, including collision avoidance precautions, right-of-way rules, and minimum safe altitudes
- d. ACADEMIC CONTENT:
 - i. SECTION A – SAFETY OF FLIGHT
 - 1. Collision Avoidance/Visual Scanning
 - 2. Airport Operations
 - 3. Right-of-Way Rules
 - 4. Minimum Safe Altitudes
 - 5. Taxiing in Wind
 - 6. Positive Exchange of Flight Controls
- e. COMPLETION STANDARDS: Demonstrate understanding during oral quizzing by instructor at completion of lesson. Student completes Chapter 4 questions for Section A with a minimum passing score of 70%. Instructor reviews incorrect responses to ensure complete student understanding prior to progression to Ground Lesson 10.
- f. STUDY ASSIGNMENTS: Private Pilot Manual, “Chapter 4, Section B. Airports”

12. GROUND LESSON 10 – AIRPORTS

- a. Time: 1 hour
- b. References:
 - i. Text Reference: Jeppesen, “Private Pilot Manual, “Chapter 4, Section B, Airports”
 - ii. Video Reference: Jeppesen, Private Pilot Video Part II, “The Flight Environment, Airports”
- c. LESSON OBJECTIVE: Become familiar with airport marking and lighting
- d. ACADEMIC CONTENT:
 - i. SECTION B – AIRPORTS
 - 1. Controlled and Uncontrolled
 - 2. Runway Layout
 - 3. Traffic Pattern
 - 4. Airport Visual Aids
 - 5. Taxiway Markings
 - 6. Ramp Area Hand Signals
 - 7. Runway Incursion Avoidance
 - 8. Land and Hold Short Operations (LAHSO)
 - 9. Airport Lighting

10. Visual Glideslope Indicators

- e. **COMPLETION STANDARDS:** Demonstrate understanding during oral quizzing by instructor at completion of lesson. Student completes Chapter 4 questions for Section B with a minimum passing score of 70%. Instructor reviews incorrect responses to ensure complete student understanding prior to progression to Ground Lesson 11
- f. **STUDY ASSIGNMENTS:** Private Pilot Manual, “Chapter 4, Section C, Aeronautical Charts”

13. GROUND LESSON 11 – AERONAUTICAL CHARTS

- a. Time: 1 hour
- b. References:
 - i. Text Reference: Jeppesen, Private Pilot Manual, “Chapter 4, Section C, Aeronautical Charts”
 - ii. Video Reference: Jeppesen, Private Pilot Video Part II, “The Flight Environment, Aeronautical Charts”
- c. **LESSON OBJECTIVE:**
 - i. Become familiar with aeronautical charts. Learn about collision avoidance procedures and runway incursion avoidance
- d. **ACADEMIC CONTENT:**
 - i. **SECTION C – AERONAUTICAL CHARTS**
 - 1. Latitude and Longitude
 - 2. Projections
 - 3. Sectional Charts
 - 4. World Aeronautical Charts
 - 5. Chart Symbolology
- e. **COMPLETION STANDARDS:** Demonstrate understanding during oral quizzing by instructor at completion of lesson. Student completes Chapter 4 questions for Section C with a minimum passing score of 70%. Instructor reviews incorrect responses to ensure complete student understanding prior to progression to Ground Lesson 11.
- f. **STUDY ASSIGNMENTS:** Private Pilot Manual, “Chapter 4, Section D, Airspace”

14. GROUND LESSON 12 – AIRSPACE

- a. Time: 1 hour
- b. References:
 - i. Text Reference: Jeppesen, Private Pilot Manual, “Chapter 4, Section D, Airspace”
 - ii. Video Reference: Jeppesen, Private Pilot Video Part II, “The Flight Environment, Airspace”
- c. **LESSON OBJECTIVE:**
 - i. Become familiar with types of airspace
- d. **ACADEMIC CONTENT:**
 - i. **SECTION D – AIRSPACE**
 - 1. Classifications
 - 2. Uncontrolled Airspace
 - 3. Controlled Airspace
 - 4. Class E
 - 5. Class D
 - 6. Class C
 - 7. Class B
 - 8. Class A

- 9. Special VFR
- 10. Special Use Airspace
- 11. Other Airspace Areas
- 12. Emergency Air Traffic Rules
- 13. Air Defense Identification Zones
- e. COMPLETION STANDARDS: Demonstrate understanding during oral quizzing by instructor at completion of lesson. Instructor reviews incorrect responses to ensure complete student understanding prior to progression to Ground Lesson 13.
- f. STUDY ASSIGNMENTS: Private Pilot Manual, “Chapter 5, Section A, Radar and ATC Environment”

15. GROUND LESSON 13 – RADAR AND ATC SERVICES

- a. Time: 1 hour
- b. References:
 - i. Text Reference: Jeppesen, Private Pilot Manual, “Chapter 5, Section A, Radar and ATC Services”
 - ii. Video Reference: Jeppesen, Private Pilot Video Part II, “Communications and Flight Information, Radar and ATC Services”
- c. LESSON OBJECTIVE:
 - i. Become familiar with radar, transponder operations, and FAA radar equipment and services for VFR aircraft
- d. ACADEMIC CONTENT:
 - i. SECTION A – RADAR AND ATC SERVICES
 - 1. Radar
 - 2. Transponder Operation
 - 3. FAA Radar Systems
 - 4. VFR Radar Services
 - 5. Automatic Terminal Information Service (ATIS)
 - 6. Flight Service Stations
 - 7. VHF Direction Finder Assistance
- e. COMPLETION STANDARDS: Demonstrate understanding during oral quizzing by instructor at completion of lesson. Student completes Chapter 5 questions for Section A with a minimum passing score of 70%. Instructor reviews incorrect responses to ensure complete student understanding prior to progression to Ground Lesson 14.
- f. STUDY ASSIGNMENT: Private Pilot Manual, “Chapter 5, Section B, Radio Procedures”.

16. GROUND LESSON 14 – RADIO PROCEDURES

- a. Time: 1 hour
- b. References:
 - i. Text Reference: Jeppesen, Private Pilot Manual, “Chapter 5, Section B, Radio Procedures”
- c. LESSON OBJECTIVE:
 - i. Learn how to use the radio for communication
- d. ACADEMIC CONTENT:
 - i. SECTION B – RADIO PROCEDURES
 - 1. VHF Communication Equipment
 - 2. Using the Radio
 - 3. Phonetic Alphabet

4. Coordinated Universal Time
 5. Common Traffic Advisory Frequency (CTAF)
 6. ATC Facilities and Controlled Airports
 7. Lost Communication Procedures
 8. Emergency Procedures
 9. Emergency Locator Transmitters (ELTs)
- e. **COMPLETION STANDARDS:** Demonstrate understanding during oral quizzing by instructor at completion of lesson. Student completes Chapter 5 questions for Section B with a minimum passing score of 70%. Instructor reviews incorrect responses to ensure complete student understanding prior to progression to Ground Lesson 15.
- f. **STUDY ASSIGNMENT:** Private Pilot Manual, “Chapter 5, Section C, Sources of Flight Information”

17. GROUND LESSON 15

- a. Time: 1 hour
- b. References:
 - i. Text Reference: Jeppesen, Private Pilot Manual, “Chapter 5, Section C, Sources of Flight Information”
 - ii. Video Reference: Jeppesen, Private Pilot Video Part II, “Communications and Flight Information, Sources of Flight Information”
- c. **LESSON OBJECTIVE:**
 - i. Gain a basic understanding of the sources of flight information, particularly the Aeronautical Information Manual and FAA advisory circulars
- d. **ACADEMIC CONTENT:**
 - i. **SECTION C – SOURCES OF FLIGHT INFORMATION**
 1. Airport/Facility Directory
 2. Notices to Airmen (NOTAMs)
 3. Advisory Circulars Series 00, 20, 60, 70, 90 and 170 Familiarization
 4. Jeppesen Information Services
- e. **COMPLETION STANDARDS:** Demonstrate understanding during oral quizzing by instructor at completion of lesson. Student completes Chapter 5 questions for Section C with a minimum passing score of 70%. Instructor reviews incorrect responses to ensure complete student understanding prior to progression to Ground Lesson 15. The student will have successfully completed the lesson when, by oral examination and demonstration, the student displays basic knowledge of the appropriate parts of the NOTAM, Airport Facility Directory and the AC system.
- f. **STUDY ASSIGNMENT:** FAR/AIM, “Parts 1 and 61”

18. GROUND LESSON 16 – FAR PARTS 1 AND 61

- a. Time: 1 hour
- b. References:
 - i. Text Reference: FAR, “Parts 1 and 61”
- c. **LESSON OBJECTIVES:**
 - i. Understand the appropriate Federal Aviation Regulations in the Private Pilot Recommended Study List
 - ii. Gain specific knowledge of those FARs which govern student solo flight operations, private pilot privileges and limitations.
- d. **ACADEMIC CONTENT:**
 - i. Airplane Registration and Airworthiness Certificate

- ii. FAR Part 1
 - 1. Definitions and Abbreviations appropriate to the private pilot
- iii. FAR Part 61
 - 1. Requirements for certificates and ratings, privileges, and limitations
 - a. Student pilot
 - b. Private pilot
 - 2. Duration of pilot certificates
 - 3. Medical certificate requirements, classes and duration
 - 4. Knowledge tests
 - 5. Practical tests
 - 6. Pilot logbooks and flight records, logging of pilot time
 - 7. Recency of experience requirements including biennial flight review
 - 8. Private pilot privileges and limitations
- e. COMPLETION STANDARDS: The student will have successfully completed the lesson when, by oral examination, the student displays a working knowledge of the appropriate portions of FAR Parts 1 and 61 and demonstrates how to locate and use information in the rule.
- f. STUDY ASSIGNMENT: FAR, “Part 91”

19. GROUND LESSON 17 – FAR, PART 91

- a. Time: 1 hour
- b. References:
 - i. Text Reference: FAR, Part 91
- c. LESSON OBJECTIVES:
 - i. During this lesson, Parts 1 and 61 will be reviewed
 - ii. The student will be instructed in the pertinent regulatory requirements of FAR Part 91
- d. ACADEMIC CONTENT:
 - i. FAR Part 91
 - 1. General operating and flight rules
 - 2. VFR requirements
 - 3. IFR requirements (familiarization)
 - 4. Maintenance, preventative maintenance and alterations, airworthiness and registration certificates
 - 5. Familiarization with Subpart D
- e. COMPLETION STANDARDS: The lesson will be successfully completed when by oral examination, the student can demonstrate how to locate and use information in the appropriate rule as related to private pilot operations.
- f. STUDY ASSIGNMENT: FAR, “Part 91 and NTSB Regulation 830”

20. GROUND LESSON 18 – FAR PARTS 91 AND NTSB REGULATION 830

- a. Time: 1 hour
- b. References:
 - i. Text Reference: FAR “Parts 91 and NTSB Regulation 830”
- c. LESSON OBJECTIVES:
 - i. FAR Parts 1, 61 and 91 will be reviewed
 - ii. The student will be instructed in the pertinent regulatory requirements of FAR Part 91 and the accident report rules of the NTSB as related to private pilot operations
- d. ACADEMIC CONTENT:
 - i. FAR Part 91

1. General operating and flight rules
2. VFR requirements
3. IFR requirements (familiarization)
4. Maintenance, preventative maintenance and alterations, airworthiness and registration certificates
5. Familiarization with Subpart D
- ii. NTSB Procedural Regulations, Part 830
 1. Notification and Reporting of Accidents
- e. COMPLETION STANDARDS: The lesson will be successfully completed when, by oral examination, the student can demonstrate how to locate and use information in the appropriate rule as related to private pilot operations and demonstrates an understanding of NTSB Part 830.
- f. STUDY ASSIGNMENT: AIM

21. GROUND LESSON 19 – AIM FOR VFR OPERATIONS

- a. Time: 1 hour
- b. References:
 - i. Text Reference: AIM
- c. LESSON OBJECTIVE:
 - i. During this lesson, the student will be given instruction in the basic content of the AIM for VFR operations
- d. ACADEMIC CONTENT:
 - i. AIM
 1. Air navigation radio aids
 2. Airport air navigation lighting
 3. Runway and taxiway marking
 4. Airspace
 5. Special use airspace
 6. Air traffic control
 7. Services available to pilots
 8. Airport operations to include high density airport operations
 9. Emergency procedures
 10. Good operating practices to include collision avoidance
- e. COMPLETION STANDARDS: The student will have successfully completed the lesson when, by oral examination and demonstration, the student displays basic knowledge of the appropriate parts of the AIM for VFR operations.
- f. STUDY ASSIGNMENT: Review Private Pilot Manual, “Chapters 2, 3, 4 and 5”. Review FAR “Part 1, 61, 91 and NTSB 830” and the AIM in preparation for the stage I Exam

22. GROUND LESSON 20 – STAGE I EXAM.

- a. Time: 1 hour
- b. References:
 - i. Text Reference: Jeppesen, Private Pilot Manual, “Chapters 1 through 5”, FAR “Parts 1, 61, 91 and NTSB 830” AIM
- c. LESSON OBJECTIVES:
 - i. Demonstrate comprehension of the material presented in:
 1. Jeppesen, Private Pilot Manual, “Chapters 1 through 5”
 2. FAR “Parts 1, 61, 91 and NTSB 830”
 3. AIM

- d. ACADEMIC CONTENT:
 - i. Stage I Exam
 - 1. Airplane Systems
 - 2. Aerodynamic Principles
 - 3. The Flight Environment
 - 4. Communication and Flight Information
 - 5. FAR Parts 1, 61, 91 and NTSB 830
 - 6. AIM
 - e. COMPLETION STANDARDS: This lesson and stage are complete when the student has completed the Stage I exam with a minimum of 70%, and the instructor has reviewed each incorrect response to ensure complete understanding before the student progresses to Stage II.
 - f. STUDY ASSIGNMENT: Private Pilot Manual, “Chapter 6, Meteorology for Pilots”

STAGE II
AVIATION WEATHER

1. **STAGE II OBJECTIVES:** During this stage, the student will become familiar with weather theory, typical weather patterns, and aviation weather hazards. In addition to meteorological theory, the student will learn how to obtain and interpret various weather reports, forecasts, and graphic charts. Finally, the student will become thoroughly familiar with FARs as they apply to private pilot operations.

2. **STAGE II COMPLETION STANDARDS:** This stage is complete when the student has completed the Stage II written exam with a minimum passing score of 70%, and the instructor has reviewed each incorrect response to ensure complete understanding before the student progresses to Stage III.

3. GROUND LESSON I – BASIC WEATHER THEORY

- a. Time: 1 hour
- b. References:
 - i. Text Reference: Jeppesen, Private Pilot Manual, “Chapter 6, Section A, Basic Weather Theory”
 - ii. Video Reference: Jeppesen, Private Pilot Video Part III, “Meteorology for Pilots”
- c. LESSON OBJECTIVE:
 - i. Learn the causes of various weather conditions, frontal systems, and hazardous weather phenomena
- d. ACADEMIC CONTENT:
 - i. SECTION A – BASIC WEATHER THEORY
 - 1. The Atmosphere
 - 2. Atmospheric Circulation
 - 3. Atmospheric Pressure
 - 4. Coriolis Force
 - 5. Global Wind Patterns
 - 6. Local Wind Patterns
- e. COMPLETION STANDARDS: Demonstrate understanding during oral quizzing by instructor at completion of lesson. Student completes Chapter 6 questions for Section A, with a minimum passing score of 70%. Instructor reviews incorrect responses to ensure complete student understanding prior to progression to Ground Lesson 2.
- f. STUDY ASSIGNMENT: Private Pilot Manual, “Chapter 6, Section B, Weather patterns”

4. GROUND LESSON 2 – WEATHER PATTERNS

- a. Time: 1 hour
- b. References:
 - i. Text Reference: Jeppesen, Private Pilot Manual, “Chapter 6, Section B, Weather Patterns”
 - ii. Video Reference: Jeppesen, Private Pilot Video Part III, “Meteorology for Pilots, Weather Patterns”
- c. LESSON OBJECTIVE:
 - i. Learn the causes of various weather conditions, frontal systems, and hazardous weather phenomena
- d. ACADEMIC CONTENT:
 - i. SECTION B – WEATHER PATTERNS
 - 1. Atmospheric Stability
 - 2. Temperature Inversions
 - 3. Moisture
 - 4. Humidity
 - 5. Dew point
 - 6. Clouds and Fog
 - 7. Precipitation
 - 8. Air masses
 - 9. Fronts
- e. COMPLETION STANDARDS: Demonstrate understanding during oral quizzing by instructor at completion of lesson. Student completes Chapter 6 questions for Section B, with a minimum passing score of 70%. Instructor reviews incorrect responses to ensure complete student understanding prior to progression to Ground Lesson 3.

- f. STUDY ASSIGNMENT: Private Pilot Manual, “Chapter 5, Section C, Weather Hazards”

5. GROUND LESSON 3 – WEATHER HAZARDS

- a. Time: 1 hour
- b. References:
 - i. Text Reference: Jeppesen, Private Pilot Manual, “Chapter 6, Section C, Weather Hazards”
- c. LESSON OBJECTIVE:
 - i. Understand how to recognize critical weather situations from the ground and during flight, including hazards associated with thunderstorms. Become familiar with the recognition and avoidance of wind shear and wake turbulence.
- d. ACADEMIC CONTENT:
 - i. SECTION C – WEATHER HAZARDS
 - 1. Thunderstorms
 - 2. Turbulence
 - 3. Wake Turbulence
 - 4. Wind Shear
 - 5. Microburst
 - 6. Icing
 - 7. Restrictions to Visibility
 - 8. Volcanic Ash
- e. COMPLETION STANDARDS: Demonstrate understanding during oral quizzing by instructor at completion of lesson. Student completes Chapter 6 questions for Section C with a minimum passing score of 70%. Instructor reviews incorrect responses to ensure complete student understanding prior to progression to Ground Lesson 4.
- f. STUDY ASSIGNMENTS: Private Pilot Manual, “Chapter 7, Section A, The Forecasting Process”

6. GROUND LESSON 4 – THE FORECASTING PROCESS

- a. Time: 1 hour
- b. References:
 - i. Text Reference: Jeppesen, Private Pilot Manual, “Chapter 7, Section A, The Forecasting Process”
 - ii. Video Reference: Jeppesen, Private Pilot Video, Part III, “Aviation Weather, The Forecasting Process”
- c. LESSON OBJECTIVE:
 - i. Learn how to obtain and interpret weather reports, formats, and graphic charts. Become familiar with the sources of weather information during preflight planning and while in flight
 - ii. Recognize critical weather situations described by weather reports and forecasts
- d. ACADEMIC CONTENT:
 - i. SECTION A – THE FORECASTING PROCESS
 - 1. Forecasting Methods
 - 2. Types of Forecasts
 - 3. Compiling and Processing Weather Data
 - 4. Forecasting Accuracy and Limitations
- e. COMPLETION STANDARDS: Demonstrate understanding during oral quizzing by instructor at completion of lesson. Student completes Chapter 7 questions for Section A with

a minimum passing score of 70%. Instructor reviews incorrect responses to ensure complete student understanding.

- f. STUDY ASSIGNMENT: Private Pilot Manual, “Chapter 7, Section B, Printed Reports and Forecasts”

7. GROUND LESSON 5 – PRINTED REPORTS AND FORECASTS

- a. Time: 1 hour
- b. References:
 - i. Text Reference: Jeppesen, Private Pilot Manual, “Chapter 7, Section B, Printed Reports and Forecasts”
 - ii. Video Reference: Jeppesen, Private Pilot Video Part III, “Aviation Weather, Printed Reports and Forecasts
- c. LESSON OBJECTIVES: Learn how to obtain and interpret weather reports, formats, and graphic charts. Become familiar with the sources of weather information during preflight planning and while in flight. Recognize critical weather situations described by weather reports and forecasts.
- d. ACADEMIC CONTENT:
 - i. SECTION B – PRINTED REPORTS AND FORECASTS
 - 1. Aviation Routine Weather Report (METAR)
 - 2. Radar Weather Reports
 - 3. Pilot Weather Reports
 - 4. Terminal Aerodrome Forecast (TAF)
 - 5. Aviation Area Forecast
 - 6. Winds and Temperatures Aloft Forecast
 - 7. Severe Weather Reports and Forecasts
 - 8. AIRMET / SIGMET / Convective SIGMET
 - e. COMPLETION STANDARDS: Demonstrate understanding during oral quizzing by instructor at completion of lesson. Student completes Chapter 7 questions for Section B with a minimum passing score of 70%. Instructor reviews incorrect responses to ensure complete student understanding.
 - f. STUDY ASSIGNMENT: Private Pilot Manual, “Chapter 7, Section C, Graphic Weather Products”

8. GROUND LESSON 6 – GRAPHIC WEATHER PRODUCTS

- a. Time: 1 hour
- b. References:
 - i. Text Reference: Jeppesen, Private Pilot Manual, “Chapter 7, Section C, Graphic Weather Products”
 - ii. Video Reference: Jeppesen, Private Pilot Video Part III, “Aviation Weather, Graphic Weather Products”
- c. LESSON OBJECTIVES: Learn how to obtain and interpret weather reports, formats, and graphic charts. Become familiar with the sources of weather information during preflight planning and while in flight. Recognize critical weather situations described by weather reports and forecasts.
- d. ACADEMIC CONTENT:
 - i. SECTION C – GRAPHIC WEATHER PRODUCTS
 - 1. Surface Analysis Chart
 - 2. Weather Depiction Chart
 - 3. Radar Summary Chart

4. Satellite Weather Pictures
5. Low-Level Significant Weather Prog
6. Severe Weather Outlook Chart
7. Forecast Winds and Temperatures Aloft Chart
8. Volcanic Ash Forecast and Dispersion Chart
- e. COMPLETION STANDARDS: Demonstrate understanding during oral quizzing by instructor at completion of lesson. Student completes Chapter 7 questions for Sections A, B, C, and D with a minimum passing score of 70%. Instructor reviews incorrect responses to ensure complete student understanding prior to progressing to the Stage II Exam.
- f. STUDY ASSIGNMENT: Private Pilot Manual Chapter 7, Section D, “Sources of Weather Information”

9. GROUND LESSON 7

- a. Time: 1 hour
- b. References:
 - i. Text Reference: Jeppesen, Private Pilot Manual, “Chapter 7, Section D, Sources of Weather Information”
 - ii. Video Reference: Jeppesen, Private Pilot Video Part III, “Aviation Weather, Sources of Weather Information”
- c. LESSON OBJECTIVES: Learn how to obtain and interpret weather reports, formats, and graphic charts. Become familiar with the sources of weather information during preflight planning and while in flight. Recognize critical weather situations described by weather reports and forecasts.
- d. ACADEMIC CONTENT:
 - i. SECTION D – SOURCES OF WEATHER INFORMATION
 1. Preflight Weather Sources
 2. In-Flight Weather Sources
 3. Enroute Flight Advisory Service
 4. Weather Radar Services
 5. Automated Weather Reporting Systems
- e. COMPLETION STANDARDS: Demonstrate understanding during oral quizzing by instructor at completion of lesson. Student completes Chapter 7 questions for Section D with a minimum passing score of 70%. Instructor reviews incorrect responses to ensure complete student understanding prior to progressing to the Stage II Exam.
- f. STUDY ASSIGNMENT: Private Pilot Manual, “Chapter 6, Meteorology for Pilots and Chapter 7, Interpreting Weather Data”, in Preparation for The Stage II Exam

10. GROUND LESSON 8 – STAGE II EXAM

- a. Time: 1 hour
- b. References:
 - i. Text Reference: Jeppesen, Private Pilot Manual, “Chapter 6 and 7”
- c. LESSON OBJECTIVE:
 - i. Demonstrate comprehension of the material presented in Chapters 6 and 7 of the Private Pilot Manual
- d. ACADEMIC CONTENT:
 - i. STAGE II EXAM
 1. Meteorology for Pilots
 2. Interpreting Weather Data

- e. **COMPLETION STANDARDS:** This lesson and stage are complete when the student has completed the Stage II exam with a minimum passing score of 70%, and the instructor has reviewed each incorrect response to ensure complete understanding before the student progresses to State III.
- f. **STUDY ASSIGNMENT:** Private Pilot Manual, “Chapter 8, Airplane Performance”

STAGE III
PERFORMANCE, NAVIGATION AND INTEGRATING PILOT KNOWLEDGE AND SKILLS

1. **STAGE III OBJECTIVES:** During this stage, the student will learn how to predict performance and control the weight and balance condition of the airplane. In addition, the student will be introduced to pilotage, dead reckoning, and navigation equipment. This includes understanding the basic concepts of how to use aeronautical charts, plotters, flight computers, and flight publications to plan cross-country flight. The student also will learn how to use VOR, ADF, and advanced navigation systems. In addition, the student will obtain an understanding of the physiological factors, which can affect both pilot and passengers during flight. Finally, the student will learn how to conduct comprehensive preflight planning for cross-country flights and gain insight into factors affecting aeronautical decision-making.
2. **STAGE III COMPLETION STANDARDS:** This stage is complete when the student has completed the Stage III written exam with a minimum passing score of 70%, and the instructor has reviewed each incorrect response to ensure complete understanding.
3. **GROUND LESSON 1 – PREDICTING PERFORMANCE**
 - a. Time: 1 hour
 - b. References:
 - i. Text Reference: Jeppesen, Private Pilot Manual, “Chapter 8, Section A, Predicting Performance”
 - ii. Video Reference: Jeppesen, Private Pilot Video Part IV, “Performance and Navigation, Predicting Performance”
 - c. **COMPLETION STANDARDS:** Demonstrate understanding during oral quizzing by instructor at completion of lesson. Student completes Chapter 8 questions for Section A with a minimum passing score of 70%. Instructor reviews incorrect responses to ensure complete student understanding prior to progressing to Ground Lesson 2.
 - d. **STUDY ASSIGNMENT:** Private Pilot Manual, “Chapter 8, Section A, Predicting Performance”
4. **GROUND LESSON 2 – PREDICTING PERFORMANCE**
 - a. Time: 1 hour
 - b. References:
 - i. Text Reference: Jeppesen, Private Pilot, “Chapter 8, Section A, Predicting Performance”
 - c. **LESSON OBJECTIVES**
 - i. Learn how to use data supplied by the manufacturer to predict airplane performance, including takeoff and landing distances and fuel requirements
 - d. **ACADEMIC CONTENT:**
 - i. **SECTION A – PREDICTING PERFORMANCE**
 1. Aircraft Performance and Design
 2. Chart Presentations
 3. Factors Affecting Performance
 4. Takeoff and Landing Performance
 5. Climb Performance
 6. Cruise Performance
 7. Using Performance Charts

- e. COMPLETION STANDARDS: Demonstrate understanding during oral quizzing by instructor at completion of lesson. Instructor reviews material to ensure complete student understanding prior to progressing to Ground Lesson 3.
- f. STUDY ASSIGNMENT: Private Pilot Manual, “Chapter 8, Section B, Weight and Balance”

5. GROUND LESSON 3 – WEIGHT AND BALANCE

- a. Time: 1 hour
- b. References:
 - i. Text Reference: Jeppesen, Private Pilot Manual, “Chapter 8, Section B, Weight and Balance
 - ii. Video Reference: Jeppesen, Private Pilot Video Part IV, “Performance and Navigation, Weight and Balance”
- c. LESSON OBJECTIVES
 - i. Learn to compute and control the weight and balance condition of a typical training airplane
- d. ACADEMIC CONTENT:
 - i. SECTION B – WEIGHT AND BALANCE
 - 1. Importance of Weight
 - 2. Importance of Balance
 - 3. Terminology
 - 4. Principles of Weight and Balance
 - a. Computation Method
 - b. Table Method
 - c. Graph Method
 - 5. Weight-Shift Formula
 - 6. Effects of Operating at High Total Weights
 - 7. Flight at Various CG Positions
- e. COMPLETION STANDARDS: Demonstrate understanding during oral quizzing by instructor at completion of lesson. Instructor reviews material to ensure complete student understanding prior to progressing to Ground Lesson 5
- f. STUDY ASSIGNMENT: Private Pilot Manual Chapter 8, Section C, Flight Computers

6. GROUND LESSON 4

- a. Time: 1 hour
- b. References:
 - i. Text Reference: Jeppesen, Private Pilot Manual, “Chapter 8, Section B, Weight and Balance
- c. LESSON OBJECTIVE:
 - i. Learn to compute and control the weight and balance condition of a typical training airplane
- d. ACADEMIC CONTENT:
 - i. SECTION B – WEIGHT AND BALANCE
 - 1. Importance of Weight
 - 2. Importance of Balance
 - 3. Terminology
 - 4. Principles of Weight and Balance
 - 5. Computation Method
 - 6. Table Method
 - 7. Graph Method

- 8. Weight-Shift Formula
- 9. Effects of Operating at High Total Weights
- 10. Flight at Various CG Positions
- e. COMPLETION STANDARDS: Demonstrate understanding during oral quizzing by instructor at completion of lesson. Instructor reviews material to ensure complete student understanding prior to progressing to Ground Lesson 5.
- f. STUDY ASSIGNMENT: Private Pilot Manual, “Chapter 8, Section C, Flight Computers”

7. GROUND LESSON 5 – FLIGHT COMPUTERS

- a. Time: 1 hour
- b. References:
 - i. Text Reference: Jeppesen, Private Pilot Manual, “Chapter 8, Section C, Flight Computers”
 - ii. Video Reference: Jeppesen, Private Pilot Video Part IV, “Performance and Navigation, Flight Computers”
- c. LESSON OBJECTIVES: Become familiar with basic functions of aviation computers. Understand the effects of density altitude on takeoff and climb performance.
- d. ACADEMIC CONTENT:
 - i. SECTION C – FLIGHT COMPUTERS
 - 1. Mechanical Flight computers
 - a. Time, Speed, and Distance
 - b. Airspeed and Density Altitude Computations
 - c. Wind Problems
 - d. Conversions
 - e. Multi-Part Problems
 - 2. Electronic Flight Computers
 - a. Modes and Basic Operations
 - b. Weight-Shift Formula
 - 3. Effects of Operating at High Total Weights
 - 4. Flight at Various CG Positions
 - e. COMPLETION STANDARDS: Demonstrate understanding during oral quizzing by instructor at completion of lesson. Student completes Chapter 8 questions for Section C with a minimum passing score of 70%. Instructor reviews incorrect responses to ensure complete student understanding prior to progressing to Ground Lesson 6.
 - f. STUDY ASSIGNMENT: Private Pilot Manual, “Chapter 9, Section A, Pilotage and Dead Reckoning”

8. GROUND LESSON 6 - NAVIGATION

- a. Time: 1 hour
- b. References:
 - i. Text Reference: Jeppesen, Private Pilot Manual, “Chapter 9, Section A, Pilotage and Dead Reckoning”
 - ii. Video Reference: Jeppesen, Private Pilot Video Part IV, “Navigation, Pilotage and Dead Reckoning”
- c. LESSON OBJECTIVES: Learn the basic concepts for VFR navigation using pilotage and dead reckoning
- d. ACADEMIC CONTENT:
 - i. SECTION A – PILOTAGE AND DEAD RECKONING

1. Pilotage
 2. Dead Reckoning
 3. Flight Planning
 4. VFR Cruising Altitudes
 5. Flight Plan
 6. Lost Procedures
- e. **COMPLETION STANDARDS:** Demonstrate understanding during oral quizzing by instructor at completion of lesson. Student completes Chapter 9 questions for Section A with a minimum passing score of 70%. Instructor reviews incorrect responses to ensure complete student understanding prior to progressing to Ground Lesson 7.
- f. **STUDY ASSIGNMENT:** Private Pilot Manual, "Chapter 9, Section B, VOR Navigation"

9. GROUND LESSON 7 – VOR NAVIGATION

- a. Time: 1 hour
- b. References:
 - i. Text Reference: Jeppesen, Private Pilot, "Chapter 9, Section B, VOR Navigation"
 - ii. Video Reference: Jeppesen, Private Pilot Video Part IV, "Navigation, VOR Navigation"
- c. **LESSON OBJECTIVES:**
 - i. Learn the basic concepts navigation using VOR and aircraft navigation systems
 - ii. Become familiar with the guideline and recommended procedures related to flight planning use of an FAA Flight Plan
 - iii. VFR cruising altitudes, and lost procedures
 - iv. Gain a basic understanding of VOR navigation and navigation systems
- d. **ACADEMIC CONTENT:**
 - i. **SECTION B – VOR NAVIGATION**
 1. VOR Operations
 2. Ground and Airborne Equipment
 3. Basic Procedures
 4. VOR Orientation and Navigation
- e. **COMPLETION STANDARDS:** Demonstrate understanding during oral quizzing by instructor at completion of lesson. Student completes Chapter 9 questions for Section B with a minimum passing score of 70%. Instructor reviews incorrect responses to ensure complete student understanding prior to progressing to Ground Lesson 8.
- f. **STUDY ASSIGNMENT:** Private Pilot Manual, "Chapter 9, Section C, ADF Navigation"

10. GROUND LESSON 8 – ADF NAVIGATION

- a. Time: 1 hour
- b. References:
 - i. Text Reference: Jeppesen, Private Pilot Manual, "Chapter 9, Section C, ADF Navigation"
 - ii. Video Reference: Jeppesen, Private Pilot Video Part IV, "Navigation, ADF Navigation"
- c. **LESSON OBJECTIVES:**
 - i. Learn the basic concepts for ADF navigation and aircraft navigation systems
 - ii. Become familiar with guidelines and recommended procedures related to flight planning, use of an FAA Flight Plan, VFR cruising altitudes, and lost procedures
 - iii. Gain a basic understanding of ADF navigation and navigation systems

- d. ACADEMIC CONTENT:
 - i. SECTION C – ADF NAVIGATION
 - 1. ADF Equipment
 - 2. Orientation
 - 3. Homing
 - 4. ADF Intercepts and Tracking
 - 5. Movable-Card Indicators
 - 6. Radio Magnetic Indicator
 - 7. ADF Precautions
 - e. COMPLETION STANDARDS: Demonstrate understanding during oral quizzing by instructor at completion of lesson. Student completes Chapter 9 questions for Section C with a minimum passing score of 70%. Instructor reviews incorrect responses to ensure complete student understanding prior to progressing to Ground Lesson 9.
 - f. STUDY ASSIGNMENT: Private Pilot Manual, “Chapter 9, Section D, Advanced Navigation”

11. GROUND LESSON 9 – ADVANCED NAVIGATION

- a. Time: 1 hour
 - i. Text Reference: Jeppesen, Private Pilot Manual, “Chapter 9, Section D, Advanced Navigation”
- b. LESSON OBJECTIVES:
 - i. Learn the basic concepts for advanced navigation and aircraft navigation systems
 - ii. Become familiar with guidelines and recommended procedures related to flight planning, use of an FAA Flight Plan, VFR cruising altitudes, and lost procedures
 - iii. Gain a basic understanding of advanced navigation
- c. ACADEMIC CONTENT:
 - i. SECTION D – ADVANCED NAVIGATION
 - 1. VORTAC-Based Area Navigation
 - 2. Long Range Navigation (LORAN)
 - 3. Inertial Navigation System
 - 4. Global Positioning System
 - d. COMPLETION STANDARDS: Demonstrate understanding during oral quizzing by instructor at completion of lesson. Student completes Chapter 9 questions for Section D with a minimum passing score of 70%. Instructor reviews incorrect responses to ensure complete student understanding prior to progressing to Ground Lesson 10.
 - e. STUDY ASSIGNMENT: Private Pilot Manual, “Chapter 10, Section A, Aviation Physiology”

12. GROUND LESSON 10 – AVIATION PHYSIOLOGY

- a. Time: 1 hour
- b. References:
 - i. Text Reference: Jeppesen, Private Pilot Manual, “Chapter 10, Section A, Aviation Physiology”
- c. LESSON OBJECTIVES:
 - i. Gain an insight into important aviation physiological factors as they relate to private pilot operations
 - ii. Become familiar with the accepted procedures and concepts pertaining to aeronautical decision making and judgment, including cockpit resource management and human factors training

- d. ACADEMIC CONTENT:
 - i. SECTION A – AVIATION PHYSIOLOGY
 - 1. Vision in Flight
 - 2. Night Vision
 - 3. Visual Illusions
 - 4. Disorientation
 - 5. Hypoxia
 - 6. Hyperventilation
 - e. COMPLETION STANDARDS: Demonstrate understanding during oral quizzing by instructor at completion of lesson. Student completes Chapter 10 questions for Section A with a minimum passing score of 70%. Instructor reviews incorrect responses to ensure complete student understanding prior to progressing to Ground Lesson 11.
 - f. STUDY ASSIGNMENT: Private Pilot Manual, “Chapter 10, Section B, Aeronautical Decision Making”

13. GROUND LESSON 11 – AERONAUTICAL DECISION MAKING

- a. Time: 1 hour
- b. References:
 - i. Text Reference: Jeppesen, Private Pilot Manual, “Chapter 10, Section B, Aeronautical Decision Making”
 - ii. Video Reference: Jeppesen, Private Pilot Video Part V, “Applying Human Factors, Aeronautical Decision Making”
- c. LESSON OBJECTIVES:
 - i. Gain an insight into important aviation physiological factors as they relate to private pilot operations
 - ii. Become familiar with the accepted procedures and concepts pertaining to aeronautical decision making and judgment, including cockpit resource management and human factors training
 - iii. Gain a basic understanding of aeronautical decision making and judgment
- d. ACADEMIC CONTENT:
 - i. SECTION B – AERONAUTICAL DECISION MAKING
 - 1. Applying the decision making process
 - 2. Pilot-in-Command responsibility
 - 3. Communication
 - 4. Workload management
 - 5. Situational awareness
 - 6. Resource use
 - 7. Applying human factors training
 - e. COMPLETION STANDARDS: Demonstrate understanding during oral quizzing by instructor at completion of lesson. Student completes Chapter 10 questions for Section B with a minimum passing score of 70%. Instructor reviews incorrect responses to ensure complete student understanding prior to progressing to Ground Lesson 12.
 - f. STUDY ASSIGNMENT: Private Pilot Manual, “Chapter 11, Flying Cross-Country”

14. GROUND LESSON 12 – THE FLIGHT PLANNING PROCESS

- a. Time: 1 hour
- b. References:
 - i. Text Reference: Jeppesen, Private Pilot Manual, “Chapter 11, Section A, The Flight Planning Process”

- c. LESSON OBJECTIVES:
 - i. Develop a sound understanding of the planning process for a cross-country flight.
 - ii. Become familiar with the details of flying a typical cross-country flight, including evaluation of in-flight weather and decisions for alternative actions, such as a diversion
 - iii. Understand how to plan for alternatives
- d. ACADEMIC CONTENT:
 - i. SECTION A – THE FLIGHT PLANNING PROCESS
 - 1. Developing the Route
 - 2. Preflight Weather Briefing
 - 3. Completing the Navigation Log
 - 4. Flight Plan
 - 5. Preflight Inspection
- e. COMPLETION STANDARDS: Demonstrate understanding during oral quizzing by instructor at completion of lesson. Student completes Chapter 11 questions for Section A with a minimum passing score of 70%. Instructor reviews incorrect responses to ensure complete student understanding prior to progressing to Ground Lesson 13.
- f. STUDY ASSIGNMENT: Private Pilot Manual, “Chapter 11, Section A, The Flight Planning Process”

15. GROUND LESSON 13 – THE FLIGHT PLANNING PROCESS

- a. Time: 1 hour
- b. References:
 - i. Text Reference: Jeppesen, Private Pilot Manual, “Chapter 11, Section A, The Flight Planning Process”
- c. A. LESSON OBJECTIVES:
 - i. Develop a sound understanding of the planning process for a cross-country flight.
 - ii. Become familiar with the details of flying a typical cross-country flight, including evaluation of in-flight weather and decisions for alternative actions, such as a diversion
 - iii. Understand how to plan for alternatives
- d. ACADEMIC CONTENT:
 - i. SECTION A – THE FLIGHT PLANNING PROCESS
 - 1. Developing the Route
 - 2. Preflight Weather Briefing
 - 3. Completing the Navigation Log
 - 4. Flight Plan
 - 5. Preflight Inspection
- e. COMPLETION STANDARDS: Demonstrate understanding during oral quizzing by instructor at completion of lesson. Student completes Chapter 11 questions for Section A with a minimum passing score of 70%. Instructor reviews incorrect responses to ensure complete student understanding prior to progressing to Ground Lesson 14.
- f. STUDY ASSIGNMENT: Private Pilot Manual, “Chapter 11, Section B, The Flight”

16. GROUND LESSON 14 – THE FLIGHT

- a. Time: 1 hour
- b. References:
 - i. Text Reference: Jeppesen, Private Pilot Manual, “Chapter 11, Section B, The Flight”
- c. LESSON OBJECTIVES:

- i. Develop a sound understanding of the planning process for a cross-country flight
 - ii. Become familiar with the details of flying a typical cross-country flight, including evaluation of in-flight weather and decisions for alternative actions, such as a diversion
 - iii. Understand how to plan for alternatives
 - d. ACADEMIC CONTENT:
 - i. SECTION B – THE FLIGHT
 - 1. Departure
 - 2. Centennial Airport to Pueblo memorial Airport
 - 3. Pueblo Memorial Airport to La Junta Municipal Airport
 - 4. La Junta Municipal Airport to Centennial Airport
 - 5. Diversion to Limon Municipal Airport
 - 6. Return to Centennial Airport
 - e. COMPLETION STANDARDS: Demonstrate understanding during oral quizzing by instructor at completion of lesson. Student completes Chapter 11 questions for Section B with a minimum passing score of 70%. Instructor reviews incorrect responses to ensure complete student understanding prior to progressing to Ground Lesson 15.
 - f. STUDY ASSIGNMENT: Private Pilot Manual, “Chapter 11, Section B, The Flight”

17. GROUND LESSON 15 – THE FLIGHT

- a. Time: 1 hour
- b. References:
 - i. Text Reference: Jeppesen, Private Pilot Manual, “Chapter 11, Section B, The Flight”
- c. LESSON OBJECTIVES:
 - i. Develop a sound understanding of the planning process for a cross-country flight
 - ii. Become familiar with the details of flying a typical cross-country flight, including evaluation of in-flight weather and decisions for alternative actions, such as a diversion
 - iii. Understand how to plan for alternatives
- d. ACADEMIC CONTENT:
 - i. SECTION 3 – THE FLIGHT
 - 1. Departure
 - 2. Centennial Airport to Pueblo Memorial Airport
 - 3. Pueblo Memorial Airport to La Junta Municipal Airport
 - 4. La Junta Municipal Airport to Centennial Airport
 - 5. Diversion to Limon Municipal Airport
 - 6. Return to Centennial Airport
 - e. COMPLETION STANDARDS: Demonstrate understanding during oral quizzing by instructor at completion of lesson. Instructor reviews student understanding prior to progressing to Ground Lesson 16.
 - f. STUDY ASSIGNMENT: Private Pilot Manual, “Chapter 11, Section B, The Flight”

18. GROUND LESSON 16 – THE FLIGHT

- a. Time: 1 hour
- b. References:
 - i. Text Reference: Jeppesen, Private Pilot Manual, “Chapter 11, Section B, The Flight”
- c. LESSON OBJECTIVES:
 - i. Develop a sound understanding of the planning process for a cross-country flight

- ii. Become familiar with the details of flying a typical cross-country flight, including evaluation of in-flight weather and decisions for alternative actions, such as a diversion
- iii. Understand how to plan for alternative
- d. ACADEMIC CONTENT:
 - i. SECTION B – THE FLIGHT
 - 1. Departure
 - 2. Centennial Airport to Pueblo Memorial Airport
 - 3. Pueblo Memorial Airport to La Junta Municipal Airport
 - 4. La Junta Municipal Airport to Centennial Airport
 - 5. Diversion to Limon Municipal Airport
 - 6. Return to Centennial Airport
 - e. COMPLETION STANDARDS: Demonstrate understanding during oral quizzing by instructor at completion of lesson. Instructor reviews navigation and the flight planning process to ensure complete understanding prior to progressing to the Stage III Exam.
 - f. STUDY ASSIGNMENT: Private Pilot Manual, “Chapters 8 through 11”

19. GROUND LESSON 17 – STAGE III EXAM

- a. Time: 1 hour
- b. References:
 - i. Text Reference: Jeppesen, Private Pilot Manual, “Chapters 8, 9 and 10”
- c. LESSON OBJECTIVES:
 - i. Demonstrate comprehension of the material presented in “Chapters 8 through 11” of the Private Pilot Manual
- d. ACADEMIC CONTENT:
 - i. STAGE III EXAM
 - 1. Airplane Performance
 - 2. Navigation
 - 3. Human Factors Principles
 - 4. Aeronautical Decision Making
 - 5. Flying Cross-Country
 - e. COMPLETION STANDARDS: This lesson and stage are complete when the student has completed the Stage III Exam with a minimum score of 70%, and the instructor has reviewed each incorrect response to ensure complete understanding before the student progresses to the course final examinations.
 - f. STUDY ASSIGNMENT: Review the entire manual, in preparation for the Pilot Final Exam

20. GROUND LESSON 18 – PRIVATE PILOT FINAL EXAM

- a. Time: 1 hour
- b. References:
 - i. Text Reference: Jeppesen, Private Pilot Manual
- c. LESSON OBJECTIVES:
 - i. Demonstrate comprehension of the material presented in this course in preparation for the FAA Private Pilot Airmen Knowledge Test
- d. ACADEMIC CONTENT: Private Pilot Final Exam
- e. COMPLETION STANDARDS: Each student must complete the Private Pilot Final Exam with a minimum passing score of 70%
- f. STUDY ASSIGNMENT: N/A