

**LOUISIANA TECH UNIVERSITY
DEPARTMENT OF PROFESSIONAL AVIATION
PART 141 FLIGHT SCHOOL**



**PRIVATE PILOT AIRPLANE SINGLE-ENGINE LAND
CERTIFICATION COURSE
GROUND AND FLIGHT TRAINING MANUAL**

October 15, 2008



LIST OF EFFECTIVE PAGES

October 15, 2008

Introduction	18	10/15/2008	36	10/15/2008	56	10/15/2008	
1	10/15/2008	19	10/15/2008	37	10/15/2008	57	10/15/2008
2	10/15/2008	20	10/15/2008	38	10/15/2008	58	10/15/2008
3	10/15/2008	21	10/15/2008	39	10/15/2008	59	10/15/2008
4	10/15/2008	22	10/15/2008	40	10/15/2008	60	10/15/2008
		23	10/15/2008	41	10/15/2008	61	10/15/2008
Ground Training		24	10/15/2008	42	10/15/2008	62	10/15/2008
5	10/15/2008	25	10/15/2008	43	10/15/2008	63	10/15/2008
6	10/15/2008	26	10/15/2008	44	10/15/2008	64	10/15/2008
7	10/15/2008	27	10/15/2008	45	10/15/2008	65	10/15/2008
8	10/15/2008	28	10/15/2008	46	10/15/2008	66	10/15/2008
9	10/15/2008	29	10/15/2008	47	10/15/2008	67	10/15/2008
10	10/15/2008	30	10/15/2008	48	10/15/2008	68	10/15/2008
11	10/15/2008	31	10/15/2008	49	10/15/2008	69	10/15/2008
12	10/15/2008	32	10/15/2008	50	10/15/2008	70	10/15/2008
13	10/15/2008			51	10/15/2008	71	10/15/2008
14	10/15/2008	Flight Training		52	10/15/2008	72	10/15/2008
15	10/15/2008	33	10/15/2008	53	10/15/2008	73	10/15/2008
16	10/15/2008	34	10/15/2008	54	10/15/2008		
17	10/15/2008	35	10/15/2008	55	10/15/2008		



TRAINING FACILITIES

Training, facilities, locations

1. Description of size: Refer to the drawing page
2. Maximum number of students: Refer to the drawing page
3. Type training aids: Refer to the drawing page
4. Flight Training Device (FTD): FRASCA level 6 located in Davison Hall, room 110 (statement of qualification- renewed annually)
5. Airports at which training flights originate: Ruston Regional Airport
 - a. Description of facilities: Located at Ruston Regional Airport, building contains numerous training rooms.
 - b. Pilot briefing areas: Located in Louisiana Tech Operations building and consist of open bays, private rooms, and large class rooms.
6. Minimum qualifications and ratings fro each instructor assigned:
 - * Instrument Ground Instructor Certificate
7. Airports: Ruston Regional Airport
8. Aircraft: Cessna 172R/172S airplanes will be used for all flight training in this course. These aircraft will meet the requirements of FAR Part 141.39. Radio equipment will consist of at least one 360 channel transceiver and at least on VOR and NDB navigational receiver and a 4096 code transponder with mode C capability. Each airplane is equipped for day and night VFR and IFR flying as specified in FAR Part 91.205.
9. Chief Instructor for 101, 102, 110, and 111: Dr, Charles R. Heck, Jr.

INSTRUCTOR QUALIFICATIONS

QUALIFICATIONS OF INSTRUCTORS, EVALUATORS, AND OTHER PERSONNEL

CHIEF INSTRUCTOR- Minimum Qualifications (PART 141.35)

1. The Chief Instructor will be responsible for all instructor and student training.
2. Will maintain the qualifications identified in Part 141.35 (a) through (e).
3. Will supervise all Assistant Chief Instructors; Check Instructors; Flight Instructors; and, be a member of the MOI Team.
4. Will maintain all the qualifications of Assistant Chief Instructor.

ASSISTANT CHIEF INSTRUCTOR(S) - Minimum Qualifications (Part 141.36)

1. The Assistant Chief Instructors will conduct stage checks for student training.
2. Will maintain the qualifications identified in Part 141.36 as appropriate to the level of qualification identified by the Chief Instructor and Flight Director.
3. Will be Check Instructors and a member of the MOI Team.
4. Will maintain all the qualifications of the Check Instructor.
5. Will perform other duties as directed by the Chief Instructor.

CHECK INSTRUCTORS- Minimum Qualifications (Part 141.37)

1. The Check Instructors will conduct course tests except for the final stage check.
2. Will maintain the qualifications identified in Part 141.37 as appropriate to the level of qualification identified by the Chief Instructor and Flight Director.
3. Will maintain all the qualifications of Flight Instructor.
4. Will perform other duties as directed by the Chief Instructor.

FLIGHT INSTRUCTORS- Minimum Qualifications (Part 141.33)

1. The Flight Instructors will conduct student flight training as authorized.
2. Will maintain the qualifications identified in compliance with Part 61.
3. Will be a current Certified flight Instructor (CFI).
4. Will maintain a current Class II Flight Physical.
5. Will perform other duties as directed by the Chief Instructor.

GROUND INSTRUCTORS- Minimum Qualification (Part 141.33)

1. Will maintain the qualifications identified in Part 141.33 (personnel); 141.81 (ground instructor); and, 141.89 (maintenance of personnel, facilities, and equipment) as appropriate to the level of qualification identified by the Chief Instructor and Flight Director.

**LOUISIANA TECH UNIVERSITY
RUSTON, LOUISIANA, U.S.A.
PRIVATE PILOT AIRPLANE SINGLE-ENGINE LAND
FLIGHT SCHOOL INFORMATION**

TRAINING AIRCRAFT

Cessna 172R
Cessna 172S

FLIGHT TRAINING DEVICE

Frasca Cessna 172S Level 6 FTD

COURSEWARE

Private Pilot Practical Test Standards
AC 00-6 Aviation Weather
AC 00-45 Aviation Weather Services
AC 61-23/FAA-H-8083-25 Pilot's Handbook of Aeronautical Knowledge
AC 61-65 Certification: Pilots and Flight Instructors
AC 61-67 Stall and Spin Awareness Training
AC 61-84 Role of Preflight Preparation
AC 90-48 Pilots' Role in Collision Avoidance
AC 90-66 Recommended Standard Traffic Patterns and Practices for Aeronautical Operations At
Airports Without Operating Control Towers
AC 120-51 Crew Resource Management Training
FAA-H-8083-1 Aircraft Weight and Balance Handbook
FAA-H-8083-3 Airplane Flying Handbook
FAA-H-8083-15 Instrument Flying Handbook
Federal Aviation Regulations
Aeronautical Information Manual
Airport Facility Directory
Notices to Airmen
"Guided Flight Discovery" – Private Pilot. Jeppesen Sanderson, Inc.
Cessna 172S Checklist
Louisiana Tech University Standard Operating Procedures Manual
Cessna 172S Pilot's Operating Handbook
FAA-Approved Airplane Flight Manual
Louisiana Tech University Standardization Procedures
Applicable Navigation Charts

PREFACE

This Training Course Outline (TCO) is published solely for the use of The Department of Professional Aviation, Louisiana Tech University. The Department of Professional Aviation is owned and operated in the name of:

Louisiana Tech University
Department of Professional Aviation
P.O. Box 3181
Ruston, Louisiana 71272

Standardization within the Louisiana Tech Department of Professional Aviation is achieved by the use of Training Course Outlines (TCO). It is mandatory that students enrolled in Louisiana Tech Professional Aviation flight courses, possess a personal copy of the TCO appropriate for the course. Instructors are required to use the TCO as a guide for their ground and flight instruction. This assures that all required items are covered and that the training program has continuity based upon a building block approach. A primary responsibility of the Department Head and the Chief Instructor is to ensure that the TCOs are relevant, current, and comply with the requirements mandated by the Federal Aviation Administration.

TABLE OF CONTENTS

CONTENTS	PAGE
GROUND TRAINING COURSE REQUIREMENTS AND OBJECTIVES	5
PROFESSIONAL AVIATION 101 STAGE ONE GROUND TRAINING	6
PROFESSIONAL AVIATION 102 STAGE TWO GROUND TRAINING	20
FLIGHT TRAINING COURSE REQUIREMENTS AND OBJECTIVES	33
PROFESSIONAL AVIATION 110 STAGE ONE FLIGHT TRAINING	34
PROFESSIONAL AVIATION 111 STAGE TWO FLIGHT TRAINING	52

PRIVATE PILOT COURSE MINIMUM TIME SUMMARY

TRAINING STAGE	DUAL	SOLO/PIC	XC	FTD	ORAL	GROUND
GROUND STAGE ONE						35.0
GROUND STAGE TWO						<u>35.0</u>
FLIGHT STAGE ONE	7.0	1.0		4.0	18.0	
FLIGHT STAGE TWO	<u>13.0</u>	<u>9.0</u>	<u>7.0</u>	<u>1.0</u>	<u>14.0</u>	
TOTAL FOR RATING	20.0	10.0	7.0	5.0	32.0	70.0

****NOTE: Any FTD time may be completed in the aircraft.**

GROUND TRAINING COURSE OUTLINE

COURSE REQUIREMENTS AND OBJECTIVES

ENROLLMENT PREREQUISITES: Students enrolling in the Private Pilot Certification ground classes need only meet the requirements to enroll as a regular student at Louisiana Tech University, and satisfy Part 141; Appendix B criteria.

GROUND TRAINING COURSE OBJECTIVE: The student will develop the knowledge specified by 14 CFR Section 61.105 for a Private Pilot Airplane Single Engine Land certificate.

GROUND TRAINING COURSE COMPLETION STANDARDS: The ground-training course will be completed when the student pilot demonstrates instructional knowledge that meets or exceeds those standards outlined in the Private Pilot Practical Test Standards (FAA-S-8081-14A).

GROUND TRAINING CURRICULUM: Ground school for the Private Pilot student is accomplished by enrollment in the following Professional Aviation (PRAV) courses at Louisiana Tech University. Stage I correlates to PRAV 101 and Stage II correlates to PRAV 102. Both PRAV 101 and PRAV 102 require a minimum of 35 classroom hours. Completion of these courses will result in 70 class hours and 6 college credit hours. An outline for each lesson is provided in the following Ground Training Syllabus. The academic instructor will be responsible for student knowledge of PRAV 101 and PRAV 102 for students who obtained credit by exam or who have not taken these courses.

GROUND TRAINING TEXTBOOKS: The ground-training course is structured by the Private Pilot "Guided Flight Discovery". Jeppesen Sanderson, Inc. Ground training lessons generally follow the sequence and content of these textbooks. Other required reference materials are listed in the Introduction section of the Private Pilot Practical Test Standards.

TRAINING RECORDS:

The Department will establish and maintain current and accurate records of the participation of each student enrolled in the University aviation program. These records will include as a minimum the date the student was enrolled, a chronological log of the student's course attendance, the subjects, and flight operations covered in the student's training, and the names and grades of any tests taken by the student. Additionally, a record will be maintained on the date the student graduated, terminated training, or transferred to another school. Whenever a student graduates, terminates training, or transfers to another school, the student's record will be certified to that effect by the chief instructor. The University will retain each student record for at least 1 year from the date that the student either graduates from the course to which the record pertains, terminates enrollment in the course to which the record pertains, or transfers to another school. The University will make a copy of these records available to the student upon request.

PROFESSIONAL AVIATION 101 STAGE ONE GROUND TRAINING

OBJECTIVES: The primary concentration during Stage One is on the fundamentals of flight, flight operations, and aviation weather. Instruction will cover basic aerodynamics, engine operation, and flight instruments. This stage also covers the flight environment to include airport operations, VFR communications, the airspace for VFR pilots, basic aviation meteorology, aviation weather services, and flight publications.

REFERENCES:

1. The Department of Professional Aviation Training Course Outline for the Private Pilot Certification Course.
2. Guided Flight Discovery – Private Pilot. Jeppesen Sanderson, Inc.
3. Aeronautical Decision Making for Private Pilots

COMPLETION STANDARDS: The student should have the basic knowledge required at the Private Pilot level of basic aerodynamics, engine operation, the operation and displays of flight instruments and be able to calculate weight and balance and performance problems using the airplane manuals.

INDEX

LESSON	HOURS	PAGE
DISCOVERING AVIATION	2	7
AIRPLANE SYSTEMS	3	8
AERODYNAMIC PRINCIPLES	3	9
MID-TERM TEST AND EVALUATION	2	10
THE FLIGHT ENVIRONMENT PART 1	3	11
THE FLIGHT ENVIRONMENT PART 2	3	12
COMMUNICATION AND FLIGHT INFORMATION	3	13
METEROLOGY FOR PILOTS PART 1	3	14
METEROLOGY FOR PILOTS PART 2	3	15
INTERPRETING WEATHER DATA PART 1	3	16
INTERPRETING WEATHER DATA PART 2	3	17
STAGE ONE REVIEW	2	18
STAGE ONE FINAL TEST AND EVALUATION	<u>2</u>	19
TOTAL HOURS PRAV 101 - STAGE ONE	35	

LESSON 1: (2 HOURS) DISCOVERING AVIATION

OBJECTIVES: To introduce the student to the aviation industry and to explain the requirements to become a certificated Private Pilot.

CONTENTS:

1. Pilot Training
 - A. What is Flying All About?
 - B. The Training Process
2. Aviation Opportunities
 - A. Refresher Training
 - B. Airplane Transitions
 - C. Additional Pilot Ratings
 - D. Aviation Careers
3. Introduction to Human Factors
 - A. Aeronautical Decision Making
 - B. Aviation Physiology
4. Federal Regulations
 - A. Private Pilot
 - limitations
 - flight operations
5. National Transportation Safety Board (NTSB)

COMPLETION STANDARDS: This lesson will be successfully completed when, by oral or written examination, the student displays a fundamental understanding of the aviation industry, the pilot training process, and the requirements necessary to become a safe and responsible certificated Private Pilot.

LESSON 2: (3 HOURS) AIRPLANE SYSTEMS

OBJECTIVES: The objective is to explain the parts of an airplane and the principles of operation and the components of aircraft engines, propellers, and flight instruments.

CONTENTS:

1. Parts of an Airplane
 - A. The Fuselage
 - B. The Wing
 - C. The Empennage
 - D. Trim Devices
 - E. Landing Gear
 - F. The Powerplant
 - G. Pilot's Operating Handbook
2. The Powerplant and Related Systems
 - A. Engines
 - B. Propellers
 - C. Electrical Systems
3. Flight Instruments
 - A. Pitot-Static Instruments
 - B. Gyroscopic Instruments
 - C. Magnetic Compass

COMPLETION STANDARDS: This lesson will be successfully completed when, by oral or written examination; the student displays a fundamental understanding of the parts of an airplane, the powerplant and related systems, and the flight instruments.

LESSON 3: (3 HOURS) AERODYNAMIC PRINCIPLES

OBJECTIVES: The objective is to familiarize the student with basic aerodynamics.

CONTENTS:

1. Four Forces of Flight
 - A. Lift
 - B. Weight
 - C. Thrust
 - D. Drag
2. Stability
 - A. The Three Axes of Flight
 - B. Longitudinal Stability
 - C. Lateral Stability
 - D. Directional Stability
 - E. Interaction of Lateral and Directional Stability
 - F. Stalls
 - G. Spins (Entry and Recovery)
3. Aerodynamics of Maneuvering Flight
 - A. Climbing Flight
 - B. Left-Turning Tendencies
 - C. Descending Flight
 - D. Turning Flight
 - E. Load Factor

COMPLETION STANDARDS: This lesson will be successfully completed when, by oral or written examination; the student demonstrates a fundamental understanding of basic aerodynamics.

LESSON 4: (2 HOURS) MID-TERM TEST AND EVALUATION

OBJECTIVES: This test complies with the University requirement to provide the students with an evaluation and notification of standing prior to the course drop period. The primary objective is to provide an incentive as well as the opportunity for the student to assimilate the information learned during the first three lessons.

REFERENCE: Guided Flight Discovery – Private Pilot, Chapters 1 through 3.

CONTENT: The examination shall consist of (but not limited to) at least 30 multiple-choice FAA computer knowledge test questions, along with fill-in-the-blanks, true/false, and matching. The period after the examination will include time to review and evaluate the student's performance on this examination.

COMPLETION STANDARDS: Grading is based on the traditional scale where 90% to 100% equals an "A", 80% to 89% equals a "B", 70% to 79% equals a "C", 60% to 69% equals a "D", and below 60% is a failure. Students should successfully complete this stage with a grade of 70% or higher on this examination. Students who do not achieve this score must be scheduled for additional instructions in the area(s) of deficiency identified by the examination.

LESSON 5: (3 HOURS) THE FLIGHT ENVIRONMENT PART 1

OBJECTIVES: The objective is to acquaint the student with different types of airports and airport layouts. The student will also be introduced to safety of flight concepts.

CONTENTS:

1. Safety of Flight
 - A. Collision Avoidance
 - B. Positive Exchange of Flight Controls
2. Airports
 - A. Controlled and Uncontrolled Airports
 - B. Runway Layout
 - C. Traffic Pattern
 - D. Airport Visual Aids
 - E. Runway Incursion Avoidance
 - F. Airport Lighting
 - G. Wake Turbulence

COMPLETION STANDARDS: This lesson will be successfully completed when, by oral or written examination the student demonstrates the knowledge of the different types of airports and airport layouts and the concepts related to safety of flight.

LESSON 6: (3 HOURS) THE FLIGHT ENVIRONMENT PART 2

OBJECTIVES: The objective is to introduce the different types and use of aeronautical charts and acquaint the student with the different types of airspace.

CONTENTS:

1. Aeronautical Charts
 - A. Latitude and Longitude
 - B. Projections
 - C. Sectional Charts
 - D. World Aeronautical Charts
 - E. Chart Symbolology
2. Airspace
 - A. Airspace Classifications
 - B. Uncontrolled Airspace
 - C. Controlled Airspace
 - D. VFR Terminal Area Charts
 - E. Special VFR
 - F. Special Use Airspace
 - G. Other Airspace Areas
 - H. Emergency Air Traffic Rules
 - I. ADIZ

COMPLETION STANDARDS: This lesson will be successfully completed when, by oral or written examination; the student demonstrates the knowledge of aeronautical charts and the types of airspace.

LESSON 7: (3 HOURS) COMMUNICATION AND FLIGHT INFORMATION

OBJECTIVES: The objective is to familiarize the student with radio procedures and the radar and ATC services and sources of flight information available to pilots.

CONTENTS:

1. Radar and ATC Services
 - A. Radar
 - B. FAA Radar Systems
 - C. VFR Radar Services
 - D. Terminal Radar VFR Service
 - E. Automatic Terminal Information Service
 - F. Flight Service Stations
2. Radio Procedures
 - A. VHF Communication Equipment
 - B. Using the Radio
 - C. Lost Communication Procedures
 - D. Emergency Procedures
3. Sources of Flight Information
 - A. Airport Facility Directory
 - B. Federal Aviation Regulations
 - C. Aeronautical Information Manual
 - D. Notices to Airmen
 - E. Advisory Circulars

COMPLETION STANDARDS: This lesson will have been successfully completed when the student, by oral or written examination, shows that he or she demonstrates knowledge of radio procedures and the radar and ATC services and sources of flight information provided to pilots.

LESSON 8: (3 HOURS) METEOROLOGY FOR PILOTS PART 1

OBJECTIVES: The objective is to acquaint the student with the general characteristics of the atmosphere and the specifics of aviation weather relevant to the private pilot.

CONTENTS:

1. Basic Weather Theory
 - A. The Atmosphere
 - B. Atmospheric Circulation
2. Weather Patterns
 - A. Atmospheric Stability
 - B. Moisture
 - C. Clouds
 - D. Precipitation
 - E. Airmasses
 - F. Fronts

COMPLETION STANDARDS: This lesson will be successfully completed when, by oral or written examination; the student demonstrates an appropriate understanding of the atmosphere and basic meteorology.

LESSON 9: (3 HOURS) METEOROLOGY FOR PILOTS PART 2

OBJECTIVES: The objective is to acquaint the student with different weather hazards. The student will be able to evaluate the weather conditions and hazards necessary for planning a safe flight.

CONTENTS:

1. Weather Hazards
 - A. Thunderstorms
 - B. Turbulence
 - C. Wind Shear
 - D. Icing
 - E. Restrictions to Visibility
 - F. Volcanic Ash

COMPLETION STANDARDS: The student will have successfully completed this lesson when, by oral or written examination, he or she demonstrates an appropriate understanding of the weather hazards in flight and their impact on flying decisions.

LESSON 10: (3 HOURS) INTERPRETING WEATHER DATA PART 1

OBJECTIVES: The objective is to familiarize the student with sources and types of aviation weather charts, forecasts, and reports. The student will be able to read, interpret, and evaluate weather data on the ground and in flight and be able to make competent “go/no-go” decisions based on available weather information.

CONTENTS:

1. The Forecasting Process
 - A. Forecasting Methods
 - B. Compiling and Processing Weather Data
 - C. Forecasting Accuracy and Limitations
2. Printed Reports and Forecasts
 - A. Printed Weather Reports
 - B. Printed Weather Forecasts
 - C. Severe Weather Reports and Forecasts

COMPLETION STANDARDS: This lesson will have been successfully completed when the student, by oral or written examination, shows that he or she can procure, interpret, and use aviation weather services. The student should have knowledge of elements related to weather information by analyzing weather reports and forecasts. He or she must be able to make competent “go/no-go” decisions based on available weather information.

LESSON 11: (3 HOURS) INTERPRETING WEATHER DATA PART 2

OBJECTIVES: The objective is to further familiarize the student with sources and types of aviation weather charts and reports. The student will be introduced to sources of weather information including how to obtain a preflight and in-flight weather briefing. The student will be able to make competent “go/no-go” decisions based on available weather information.

CONTENTS:

1. Graphic Weather Products
 - A. Graphic Reports
 - B. Graphic Forecasts
2. Sources of Weather Information
 - A. Preflight Weather Sources
 - B. In-flight Weather Sources

COMPLETION STANDARDS: This lesson will have been successfully completed when the student, by oral or written examination, shows that he or she can procure, interpret, and use aviation weather services. The student should have knowledge of elements related to weather information by analyzing weather reports and forecasts. He or she must be able to make competent “go/no-go” decisions based on available weather information.

LESSON 12: (2 HOURS) STAGE ONE REVIEW

OBJECTIVES: This lesson provides the student the opportunity to review all material covered in Stage I and to prepare for the course final examination.

CONTENTS:

1. Review material covered in stage I
2. Methods of review
 - A. Present a brief lecture review of each lesson
 - B. Encourage student participation
 - C. Discuss typical test questions for each lesson
 - D. Discuss test-taking techniques

COMPLETION STANDARDS: The student will successfully complete this lesson when, in the opinion of the instructor, he or she has a reasonable chance of making the required minimum score of 80% on the course final examination.

LESSON 13: (2 HOURS) STAGE ONE FINAL TEST AND EVALUATION

OBJECTIVES: The primary objective is to provide an incentive as well as the opportunity for the student to assimilate the information learned during Stage one.

REFERENCE: Guided Flight Discovery – Private Pilot, Chapters 1 through 7.

CONTENT: This examination will cover stage I material. The examination shall, as a minimum, consist of (but is not limited to) at least 50 FAA computer knowledge examination type multiple-choice questions, along with fill-in-the-blanks, true/false, and matching.

COMPLETION STANDARDS: Grading is based on the traditional scale where 90% to 100% equals an “A”, 80% to 89% equals a “B”, 70% to 79% equals a “C”, 60% to 69% equals a “D”, and below 60% is a failure. Students who do not achieve this score must be scheduled for additional instruction in the area(s) of deficiency identified by the examination or must retake Professional Aviation 101. Failure to achieve a grade of at least 70 percent (“C”) will require that the student retake the course.

PROFESSIONAL AVIATION 102 STAGE TWO GROUND TRAINING

OBJECTIVES: This stage introduces the student to regulations that apply to private and student pilot operations, basic terminology and definitions. The student will be presented the basics of air navigation, and flight planning procedures and techniques. The objective is to introduce students to various techniques, aids, and factors pertaining to the execution of a safe cross-country flight. The student will also be instructed on the primary physiological aspects of flight as a means to recognize, avoid, and/or take appropriate countermeasures. Aviation safety will be emphasized by an acquaintance to some of the typical hazards encountered in VFR flight and how to recognize and avoid emergency situations. The student will be given the basic fundamentals for making quick, decisive, and mature decisions in normal flight as well as in emergency situations.

REFERENCES:

1. The Department of Professional Aviation Training Course Outline for the Private Pilot Certification Course.
2. Guided Flight Discovery – Private Pilot. Jeppesen Sanderson, Inc.
3. The FAR/AIM Manual
4. Aeronautical Decision Making for Private Pilots

COMPLETION STANDARDS: Successful completion of a stage occurs when the student demonstrates knowledge on all of the information required for the Private Pilot computer knowledge exam.

INDEX

LESSON	HOURS	PAGE
AIRPLANE PERFORMANCE PART 1	4	21
AIRPLANE PERFORMANCE PART 2	4	22
AIRPLANE PERFORMANCE PART 3	3	23
NAVIGATION PART 1	4	24
NAVIGATION PART 2	3	25
MID-TERM TEST AND EVALUATION	2	26
APPLYING HUMAN FACTORS PRINCIPLES	4	27
FLYING CROSS COUNTRY	4	28
COMPREHENSIVE PRIVATE PILOT REVIEW	4	29
FINAL PRIVATE PILOT EXAMINATION	<u>3</u>	30
TOTAL HOURS PRAV 102 - STAGE TWO	35	

LESSON 1: (4 HOUR) AIRPLANE PERFORMANCE PART 1

OBJECTIVES: The objective is to teach the student to evaluate aircraft performance by considering the effect of varying atmospheric and runway conditions. The student will be able to use pilot operating handbooks to determine takeoff distances, rates of climb, cruise performance, and landing distances under various runway and atmospheric conditions.

CONTENTS:

1. Predicting Performance
 - A. Aircraft Performance and Design
 - B. Chart Presentations
 - C. Factors Affecting Aircraft Performance
(effects of density/pressure altitude)
 - D. Takeoff and Landing Performance
 - E. Climb Performance
 - F. Cruise Performance

COMPLETION STANDARDS: The student will have successfully completed this lesson when, by oral or written examination, he or she demonstrates the ability to accurately perform all performance calculations.

LESSON 2: (4 HOURS) AIRPLANE PERFORMANCE PART 2

OBJECTIVES: The objective is to teach the student the hazards of improper airplane loading and the requirements for and the advantage of proper loading. The student will be able to use the weight and balance data found in pilot operating handbooks to compute and properly load an airplane within the allowable limits for safe and efficient flight.

CONTENTS:

1. Weight and Balance
 - A. Importance of Weight
 - B. Importance of Balance
 - C. Weight and Balance Terms
 - D. Principles of Weight and Balance
 - E. Determining Total Weight and Center of Gravity
 - F. Effects of Operating at High Total Weights
 - G. Flight at Various CG Positions

COMPLETION STANDARDS: This lesson will be successfully completed when, by oral or written examination the student demonstrates the ability to accurately calculate airplane weight and balance using either the formula, tabular, or graphical method.

LESSON 3: (3 HOURS) AIRPLANE PERFORMANCE PART 3

OBJECTIVES: The objective is to introduce the student to the different types and use of flight computers.

CONTENTS:

1. Flight Computers
 - A. Mechanical Flight Computers
 - B. Electronic Flight Computers

COMPLETION STANDARDS: The student will have successfully completed this lesson when, by oral or written examination, he or she demonstrates and appropriate understanding of the different types and use of flight computers.

LESSON 4: (4 HOURS) NAVIGATION PART 1

OBJECTIVES: The objective is to teach the student the basic principles of navigation the application of pilotage, dead reckoning, and radio navigation. The student will also be introduced to the basic operating principles of the VOR and DME.

CONTENTS:

1. Pilotage and Dead Reckoning
 - A. Pilotage
 - B. Dead Reckoning
 - C. Flight Plan
2. VOR Navigation
 - A. Ground Equipment
 - B. Airborne Equipment
 - C. Navigation Procedures
 - D. Checking VOR Accuracy
 - E. Horizontal Situation Indicator
 - F. Distance Measuring Equipment

COMPLETION STANDARDS: The student will have successfully completed this lesson when by oral or written examination, he or she demonstrates and appropriate understanding of the principles of air navigation and the operating principles of the VOR and DME.

LESSON 5: (3 HOURS) NAVIGATION PART 2

OBJECTIVES: The objective is to introduce the student to the basic operating principles of the ADF and advanced navigation systems.

CONTENT:

1. ADF Navigation
 - A. Ground Equipment
 - B. Airborne Equipment
 - C. Navigation Procedures
 - D. Movable-Card Indicator
 - E. Radio Magnetic Indicator
 - F. ADF Limitations
2. Advanced Navigation
 - A. Types of Equipment
 - B. VORTAC-Based Area Navigation
 - C. Long Range Navigation
 - D. Inertial Navigation
 - E. Global Positioning System

COMPLETION STANDARDS: The student will have successfully completed this lesson when, by oral or written examination, he or she demonstrates an appropriate understanding of the operating principles of the ADF and advanced navigation systems.

LESSON 6: (2 HOURS) MID-TERM TEST AND EVALUATION

OBJECTIVES: This test complies with the University requirement to provide the students with an evaluation and notification of standing prior to the course drop period. The primary objective is to provide an incentive as well as the opportunity for the student to assimilate the information learned during the first five lessons.

REFERENCE: Guided Flight Discovery – Private Pilot. Chapters 8-9.

CONTENT: The examination shall, as a minimum, consist of (but not limited to) at least 30 FAA computer knowledge multiple-choice questions, along with fill-in-the-blanks, true/false, and matching. The period after the exam will include time to review and evaluate the student's performance on this examination.

COMPLETION STANDARDS: Grading is based on the traditional scale where 90% to 100% equals an "A", 80% to 89% equals a "B", 70% to 79% equals a "C", 60% to 69% equals a "D", and below 60% is a failure. Students should successfully complete this stage with a grade of 70% or higher on this examination. Students who do not achieve this score must be scheduled for additional instruction in the area(s) of deficiency identified by the examination.

LESSON 7: (4 HOURS) APPLYING HUMAN FACTORS PRINCIPLES

OBJECTIVES: This lesson introduces the new aviation student to the basic concepts of aviation physiology and aeronautical decision-making.

CONTENTS:

1. Aviation Physiology
 - A. Vision in Flight
 - B. Disorientation
 - C. Respiration
 - D. Hypoxia
 - E. Hyperventilation
2. Aeronautical Decision Making
 - A. Applying the Decision Making Process
 - B. Accidents and Incidents
 - C. Pilot-In-Command Responsibility
 - D. Communication
 - E. Resource Use
 - F. Workload Management
 - G. Situational Awareness
 - H. The Application of Aeronautical Decision Making

COMPLETION STANDARDS: The student will demonstrate an awareness of the basic concepts of aviation physiology and decision-making. The student should be able to demonstrate the ability to recognize stress and have an awareness of some of the basic methods to manage stress and avoid risks.

LESSON 8: (4 HOURS) FLYING CROSS-COUNTRY

OBJECTIVES: The objective is to show the student how to plan a cross-country flight from start to finish.

CONTENTS:

1. The Flight Planning Process
 - A. Flight Overview
 - B. Developing the Route
 - C. Preflight Weather Briefing
 - D. Completing the Navigation Log
 - E. Flight Plan
 - F. Preflight Inspection
2. The Flight
 - A. APA to PUB
 - B. PUB to LHX
 - C. LHX to APA
 - D. LIC to APA
3. Alternate Planning
 - A. Delays
 - B. Destinations

COMPLETION STANDARDS: The student will have successfully completed this lesson when, by oral or written examination, he or she demonstrates an appropriate understanding of how to plan a cross-country flight from start to finish.

LESSON 9: (4 HOUR) COMPREHENSIVE PRIVATE PILOT REVIEW

OBJECTIVES: The objective of this lesson is to provide the student an opportunity to review all material covered in stage one and two and prepare for the course final examination.

CONTENTS:

1. All material covered in stage one and two
2. Methods of review
 - A. Seek voluntary questions from students on each lesson
 - B. Present a brief lecture review of each lesson
 - C. Offer students practice examinations on each lesson

COMPLETION STANDARDS: The student will successfully complete this lesson when, in the opinion of the instructor, he or she has a reasonable chance of obtaining the required minimum score of 80% on the course final examination.

LESSON 10: (3 HOUR) FINAL PRIVATE PILOT EXAMINATION

FAA COMPUTER KNOWLEDGE EXAMINATION

OBJECTIVES: The examination complies with FAA requirements for completion of the FAA Computer Knowledge Test.

CONTENTS: This examination will cover the Stage I through IV material using the FAA multiple-choice questions. There are at least 60 randomly selected questions covering all phases of the Private Pilot Ground Course Phase I and II.

COMPLETION STANDARDS: The student completes Professional Aviation 102 when he or she passes the FAA Computer Knowledge Test with a minimum score of 70% corrected to 100%. Students who do not achieve this score must be scheduled for additional instruction and re-examination, or be re-enrolled in Professional Aviation 102.

KNOWLEDGE TEST GUIDE: (Reference: FAA-G-8082-17A, Recreational Pilot and Private Pilot Knowledge Test Guide) The Louisiana Tech Department of Professional Aviation is certified by the Federal Aviation Administration (FAA) to conduct computer testing for Private Pilot – Airplane.

ELIGIBILITY REQUIREMENTS: Applicants MUST have either the professor of the ground course or a flight instructor endorse their logbook (or present in some other written form) to certify that the student is competent to take the test.

KNOWLEDGE AREAS ON THE TESTS: The tests are comprehensive, as they must test an applicant's knowledge in many subject areas. All test questions are the objective, multiple-choice type, with three choices of answers; each question can be answered by the selection of a single response. Each test question is independent of other questions, that is, a correct response to one does not depend upon, or influence the correct response to another. The maximum time allowed for taking the Private Pilot knowledge examination is 2.5 hours.

When taking a test, keep the following points in mind:

1. Answer each question in accordance with the latest regulations and procedures.
2. Read each question carefully before looking at the possible answers. You should clearly understand the problem before attempting to solve it.
3. After formulating an answer, determine which choice most nearly corresponds with the answer. The answer chosen should completely resolve the problem.
4. From the answers given, it may appear that there is more than one possible answer. However, there is only one answer that is correct and complete. The other answers are incomplete, erroneous, or represent common misconceptions.

5. If a certain question is difficult for you, it is best to mark it for RECALL and proceed to the next question. After you answer the less difficult questions, return to those, which you marked for recall and answer them. The recall marking procedure will be explained to you prior to starting test. Although the computer should alert you to unanswered questions, make sure every question has an answer recorded. This procedure will enable you to use the available time to maximum advantage.
6. When solving a calculation problem, select the answer nearest your solution. The problem has been checked with various types of calculators; therefore, if you have solved it correctly, your answer will be closer to the correct answer than any of the other choices,

TAKING A KNOWLEDGE TEST: You must have an instructor endorsement before applying for the test. The testing periods will be posted on the Department bulletin board. Obtain a form from the Department office and fill it out completely. **IT IS VERY IMPORTANT THAT YOU WRITE LEGIBLY BECAUSE THE CORRECT INFORMATION MUST BE ENTERED INTO THE COMPUTER WHEN THE TEST IS PREPARED.** When you have completed the application, return it to the Department with a check or cash for the test fee.

REMEMBER: You always have an opportunity to take a sample test before the actual test begins. The Department Computer Laboratory has the Gleim Test Preparation Software and the practice tests can be taken as often as you like free of charge.

ARRIVING FOR THE TEST: When you arrive for the test, you should have a flight computer, a pocket calculator, a plotter, and a **PENCIL (NO PENS PLEASE)**. If you plan to use an electronic flight computer, the test monitor must ask you to remove the batteries to ensure that no information is in memory. You will be given a binder containing a test floppy disk, a scratch sheet, and the test supplemental material. Listen carefully to the instructions that will be given you by the test monitor. When you have completed the test, check to ensure that you have answered **ALL** of the questions. Put the test booklet together and give it to the test monitor for grading. The monitor will score the test and give you a copy of the test results that must have an embossed seal over the monitor's signature. This is an important document. **DO NOT LOSE THE AIRMAN TEST REPORT**, as you will need to present it to the examiner prior to taking the practical test. Loss of this report means that you will have to request a duplicate copy from the FAA in Oklahoma City.

CHEATING OR OTHER UNAUTHORIZED CONDUCT: The University must follow rigid testing procedures established by FAA. This includes test security. When entering the test area, you are permitted to take only scratch paper furnished by the test administrator and an authorized aviation computer, plotter, etc., approved for use in accordance with FAA Order 8080.6C, Conduct of Airmen Knowledge Tests via the Computer Medium, and AC 60-11C, Aids Authorized for Use by Airman Written Test Applicants. The FAA has directed testing centers to stop a test any time a test administrator suspects a cheating incident has occurred. An FAA investigation will then follow. If the investigation determines that cheating or other unauthorized conduct has occurred, any airman certificate that you hold may be revoked, and you may not be allowed to take a retest for 1 year.

RE-TESTING PROCEDURES: If the score on the airman test report is 70 or above, in most cases the report is valid for 24 calendar months. You may elect to retake the test in anticipation of a better score. Prior to retaking the test, you must give your current airman test report to the Department Test Monitor. Remember, the score of the latest test you take will become the official test score.

FLIGHT TRAINING COURSE OUTLINE

REQUIREMENTS AND OBJECTIVES

ENROLLMENT PREREQUISITES: Students enrolling in the Private Pilot Certification flight classes need to have at least a First Class Medical Certificate/student pilot certificate, completion or concurrent enrollment in the Private Pilot ground classes, and meet the requirements to enroll as a regular student at Louisiana Tech University, and satisfy the requirements identified in Part 141; Appendix B.

FLIGHT TRAINING 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 and a single-engine land class.

FLIGHT TRAINING COURSE COMPLETION STANDARDS: The student must demonstrate through written tests, flight tests, and show through appropriate records that he meets the knowledge, skill, and experience requirements necessary to obtain a private pilot certificate with an airplane category and a single-engine land class.

FLIGHT TRAINING CURRICULUM: Flight school for the Private Pilot student is accomplished by enrollment in the following Professional Aviation courses at Louisiana Tech University. Stage I correlates to PA 110 and Stage II correlates to PA 111. Completion of these courses will result in 2 college semester hours of credit.

GRADES: After each lesson, the instructor will assign grades using the following scale. When any grade below an “A” is assigned, the instructor must include amplifying comments on the grade form.

- | | |
|----------------------|---|
| A. Exceeds Standards | The student usually (50 percent of the time) exceeds FAA Practical Test Standards (PTS) |
| B. Meets Standards | The student meets FAA Practical Test Standards (PTS). |
| C. Below Standards | The student usually (50 percent of the time) meets FAA Practical Test Standards (PTS). |
| F. Failure | The safety of the flight is in question, and the instructor must take control of the aircraft. Also, the maneuver is incomplete or not completed correctly. |

Note: Grades of A or B delineate satisfactory performance in accordance with FAA Practical Test Standards. Grades C and F delineate unsatisfactory performance in accordance with FAA Practical Test Standards.

PROFESSIONAL AVIATION 110 FLIGHT TRAINING STAGE ONE SOLO FLIGHT

OBJECTIVES: (Reference: 14 CFR Section 61.87, Solo Requirements for Student Pilots) The primary objective during Stage One is to prepare the student for solo flight. The student will receive instruction on ground operations, basic flight maneuvers, slow flight, stalls, in-flight emergencies, flight using ground references, takeoffs, traffic patterns, and landings. The student must develop the proficiency for solo flight.

REFERENCES:

1. The Department of Professional Aviation Training Course Outline for the Private Pilot Certification Course.
2. The FAR/AIM Manual
3. Aeronautical Decision Making for Private Pilots
4. Private Pilot Practical Test Standards

COMPLETION STANDARDS: Prior to solo flight, the student will be given a comprehensive review, and must pass an oral quiz on all material covered during Stage One. The stage will be completed when the student has satisfactorily completed the supervised solo flight.

FLIGHT TRAINING SUMMARY

LESSON	DUAL	SOLO	FTD	ORAL	PAGE
1. FLIGHT OPERATIONS ORIENTATION				8.0	35
2. BASIC PRIVATE PILOT MANEUVERS	1.0			1.0	36
3. BASIC PRIVATE PILOT MANEUVERS			1.0	0.5	37
4. PRIVATE PILOT MANEUVERS				1.0	38
5. PRIVATE PILOT MANEUVERS	1.0			0.5	39
6. EMERGENCY PROCEDURES				1.0	40
7. EMERGENCY PROCEDURES			1.0	0.5	41
8. EMERGENCY PROCEDURES			1.0	0.5	42
9. GROUND REFERENCE MANEUVERS				1.0	43
10. GROUND REFERENCE MANEUVERS	1.0			0.5	44
11. ARPT OPS, TAKEOFFS, AND LANDINGS				1.0	45
12. ARPT OPS, TAKEOFFS, AND LANDINGS			1.0	0.5	46
13. ARPT OPS, TAKEOFFS, AND LANDINGS	1.0			0.5	47
14. PRE-SOLO STAGE CHECK REVIEW	1.0			0.5	48
15. PRE-SOLO STAGE CHECK	1.0			1.0	49
16. SUPERVISED SOLO	0.5	0.5			50
17. SUPERVISED SOLO	<u>0.5</u>	<u>0.5</u>			
18. TOTAL PA 110 - STAGE ONE	7.0	1.0	4.0	18.0	

LESSON 1: (8.0 HOUR ORAL) FLIGHT OPERATIONS ORIENTATION

OBJECTIVES: This is an orientation of the flight school and flight line operations. This lesson provides an opportunity for the instructor and student to become acquainted. The instructor should resolve questions on the flight-training program.

CONTENTS:

1. Orientation of the aviation program and flight operations including aircraft and dispatch procedure.
2. Create student records
3. Completion of Flight Release Form
4. Procedures Training
 - A. Practice Checklist Usage (“chairfly”) for normal and emergency operations using aircraft ramp.
5. Airworthiness
 - A. Airworthiness, Registration, Type Certificate, and Operational Limitations
 - B. Maintenance inspections
 - a. 100 hour inspections
 - b. Annual inspections
 - c. Airworthiness Directives
 - C. Equipment inspections
 - a. Emergency Locator Transmitter
 - b. Transponder
 - c. Pitot-static inspection
 - D. Weight and balance: Equipment List
6. Emergency Equipment (ELT, Fire Extinguisher)

COMPLETION STANDARDS: The student should be familiar with flight operations policies and procedures, have a flight record created, and be familiar with course completion requirements.

LESSON 2: (1.0 HOUR DUAL) BASIC PRIVATE PILOT MANEUVERS
PRE/POSTFLIGHT BRIEFING: (1.0 HOURS)

OBJECTIVES: This is the initial orientation flight. Familiarization with the airplane, preflight procedures, use of checklists, and safety of flight will be conducted. The student will be introduced to the four fundamentals using visual and instrument references. The student will be introduced to the training scenarios contained in the Entire Flight, Flight Planning, Preflight, Taxi, Takeoff, En route, Descent, and Landing for all the Phases of flight.

CONTENTS:

1. Weight and balance
2. Use of checklist
3. Thorough preflight inspection
4. Use of shoulder harness
5. Taxiing
6. Normal takeoff and climb
7. Straight and level flight
8. Attitude flying
9. Climbs, Turns, Descents
10. Use of trim control
11. Radio communications
12. Orientation to the local area
13. Positive exchange of flight controls
14. Collision avoidance
15. Shutdown and securing the aircraft

COMPLETION STANDARDS: The student should complete this lesson with a basic understanding of operational procedures. The student should be able to maintain altitude in straight and level flight and in turns within ± 200 feet and control heading within ± 20 degrees.

LESSON 3: (1.0 HOUR FTD) BASIC PRIVATE PILOT MANEUVERS
PRE/POSTFLIGHT BRIEFING: (0.5 HOURS)

OBJECTIVES: This lesson will be conducted in a flight-training device. The student will be introduced to the four fundamentals using visual and instrument references. The student will participate in a review and discussion of the training scenarios and situational awareness lessons.

CONTENTS:

1. Trainer familiarization
2. Use of checklist
3. Straight and level flight
4. Constant airspeed climbs
5. Constant airspeed descents
6. Turns to headings
7. Turns using the magnetic compass
8. Electrical system failure

COMPLETION STANDARDS: This lesson will be completed when the student, under the direction of his/her instructor, is able to perform the four basic maneuvers. The student should be able to maintain altitude in straight and level flight and in turns within +/- 200 feet, control heading within +/- 20 degrees and airspeed within +/- 10kts.

LESSON 4: (1.0 HOUR ORAL) PRIVATE PILOT MANEUVERS

OBJECTIVES: This lesson is on private pilot maneuvers using the human factors training.

CONTENTS:

1. Related aircraft handbook information for operating the aircraft and airspeed markings
2. Situational Awareness – situations
3. Steep turns
4. Slow flight
5. Stalls and stall recovery
6. Spins and spin recovery
7. Procedures for engine failure
8. Airfield and runway markings

COMPLETION STANDARDS: This lesson will be completed when the student displays an understanding of the maneuvers covered.

LESSON 5: (1.0 HOUR DUAL) PRIVATE PILOT MANEUVERS
PRE/POSTFLIGHT BRIEFING: (0.5 HOURS)

OBJECTIVES: This is an introduction to slow flight, steep turns, and stalls.

CONTENTS:

1. Steep turns
2. Slow flight
3. Stalls and stall recovery
4. Procedures for resolving navigation/communications failures

COMPLETION STANDARDS: This lesson will be complete when the student can demonstrate the basic maneuvers controlling altitude within 200 feet, heading within 10 degrees, and airspeed within 10 knots.

LESSON 6: (1.0 HOUR ORAL) EMERGENCY PROCEDURES

OBJECTIVES: In this lesson, the student will review the procedures for slow flight, stalls, and steep turns. The student will be introduced to emergency procedures.

CONTENTS:

1. Stall recognition and recovery
2. Simulated loss of engine power immediately after takeoff
3. Simulated power loss at altitude
4. Transition from cruise to slow flight
5. Steep turns

COMPLETION STANDARDS: This lesson will be completed when the student has a basic understanding of the procedures for emergency operations. The student will also have a basic understanding of the aerodynamics related to slow flight, stalls, and steep turns.

LESSON 7: (1.0 HOUR FTD) EMERGENCY PROCEDURES
PRE/POSTFLIGHT BRIEFING: (0.5 HOURS)

OBJECTIVES: In this lesson, the student will configure the aircraft for slow flight, stalls, and follow the checklist for emergency situations. During this lesson the student will apply applicable situational awareness and training scenario concepts.

CONTENTS:

1. Use of checklist for start, taxi, takeoff, climb-out, cruise, descent, before landing, and after landing
2. Clearing turns
3. Cloud clearance
4. Over water operations
5. Practice level off and cruise flight
6. Practice slow flight
7. Low speed turns
8. Use of trim control
9. Stalls at low altitude
10. Practice stall recognition and recovery
11. Simulated loss of engine power immediately after takeoff
12. Simulated power loss at altitude
13. Transition from cruise to slow flight with trim
14. Staying position oriented

COMPLETION STANDARDS: This lesson will be completed when the student understands the effects of reduced airspeed on the aircraft and the effect of flaps at reduced airspeeds. The student should have an understanding for the use of instrument crosschecks.

LESSON 8: (1.0 HOUR FTD) EMERGENCY PROCEDURES
PRE/POSTFLIGHT BRIEFING: (0.5 HOURS)

OBJECTIVES: In this lesson, the student will configure the aircraft for slow flight, stalls, and follow the checklist for emergency situations. During this lesson the student will apply applicable situational awareness and training scenario concepts.

CONTENTS:

1. Use of checklist for start, taxi, takeoff, climb-out, cruise, descent, before landing, and after landing
2. Clearing turns
3. Cloud clearance
4. Over water operations
5. Practice level off and cruise flight
6. Practice slow flight
7. Low speed turns
8. Use of trim control
9. Stalls at low altitude
10. Practice stall recognition and recovery
11. Simulated loss of engine power immediately after takeoff
12. Simulated power loss at altitude
13. Transition from cruise to slow flight with trim
14. Staying position oriented

COMPLETION STANDARDS: This lesson will be completed when the student understands the effects of reduced airspeed on the aircraft and the effect of flaps at reduced airspeeds. The student should have an understanding for the use of instrument crosschecks.

LESSON 9: (1.0 HOUR ORAL) GROUND REFERENCE MANEUVERS

OBJECTIVES: The instructor will brief the student on ground reference maneuvers. During this lesson the student will be prepared for situational awareness and training scenario concepts to be applied at the next flight.

CONTENTS:

1. Ground Reference Maneuvers
 - A. Rectangular Course
 - B. S-Turns
 - C. Turns around a Point
2. Pilotage
3. Aircraft Control in Gusty Wind Conditions
4. Traffic recognition and Avoidance
5. VFR Cloud Clearance
6. Taxi with Correct Control Position for Wind

COMPLETION STANDARDS: This lesson will be complete when the student understands the situational awareness and scenarios procedures for the ground reference maneuvers listed above.

LESSON 10: (1.0 HOUR DUAL) GROUND REFERENCE MANEUVERS
PRE/POSTFLIGHT BRIEFING: (0.5 HOURS)

OBJECTIVES: The objective of this lesson is to demonstrate the effects of winds on the ground track of the airplane. The instructor will select a field for the student to apply wind drift corrections for ground tracking. The instructor will discuss terminology associated with traffic pattern operations. Situational Awareness and Scenarios concepts will be applied.

CONTENTS:

1. Flight over a congested area
2. Pilotage
3. Traffic avoidance
4. Rectangular course
5. Turns around a point
6. S-turns across a road
7. Collision avoidance
8. Communications versus maintaining VFR
9. Emergency Procedures

COMPLETION STANDARDS: This lesson will be completed when the student understands the effects of wind on the ground track of an aircraft in flight. The student will be expected to maintain the desired ground track and maintain altitude within +/-200 feet of pattern altitude and airspeed within 10 knots. The student will be expected to demonstrate basic traffic pattern procedures.

LESSON 11: (1.0 HOUR ORAL) AIRPORT OPERATIONS, TAKEOFFS, AND LANDINGS

OBJECTIVES: This briefing lesson is an orientation of the traffic pattern, takeoffs, and landings procedures.

CONTENTS:

1. Traffic pattern
2. Takeoffs
 - A. Normal takeoff
 - B. Crosswind takeoff
3. Landings
 - A. Normal landing
 - B. Crosswind landing
 - C. Slip to landing
 - D. Go around
4. Three stages to safe approaches and landings
 - A. Stabilized approach
 - B. Transition from approach to landing attitude
 - C. Landing attitude
5. Wake turbulence
6. Wind shear avoidance
7. Collision avoidance procedures

COMPLETION STANDARDS: The student will demonstrate understanding of the takeoff and landing procedures discussed in this lesson.

LESSON 12: (1.0 HOUR FTD) AIRPORT OPERATIONS, TAKEOFFS, AND LANDINGS
PRE/POSTFLIGHT BRIEFING: (0.5 HOURS)

OBJECTIVES: During this lesson, the student will practice traffic patterns, landings, and takeoffs. He/she will have been demonstrated the elements of normal and crosswind takeoffs and landings, go-around procedures, and corrections for improper approaches and faulty landings. The student will learn the proper spacing in the traffic pattern, and apply the appropriate regulations and emergency procedures.

CONTENTS:

1. Traffic pattern
2. Traffic pattern entry
3. Extraneous conversation while in the airport traffic area
4. Objects on instrument panel glare shield
5. Aircraft separation
6. Approach and landing in gusty, windy conditions
7. Intersection takeoffs
8. Takeoffs
 - A. Normal takeoff
 - B. Crosswind takeoff
9. Landings
 - A. Normal landing
 - B. Crosswind landing
 - C. Traffic pattern entry, landing at a towered field (simulated)
 - D. Crosswind landing at busy airport (simulated)
 - E. Slip to landing
 - F. Go Around
 - G. High approach
10. Emergency Procedures

COMPLETION STANDARDS: This lesson will be completed when the student can demonstrate a reasonable knowledge of traffic pattern operations and the applicable regulations. He/she should be able to solve the routine problems normally encountered in the traffic pattern. The student will also be expected to demonstrate knowledge of wake turbulence avoidance procedures and be able to maintain pattern altitude within 200 feet, headings within 10 degrees, and airspeed within 10 knots.

LESSON 13: (1.0 HOUR DUAL) AIRPORT OPERATIONS, TAKEOFFS, AND LANDINGS
PRE/POSTFLIGHT BRIEFING: (0.5 HOURS)

OBJECTIVES: During this lesson, the student will practice traffic patterns, landings, and takeoffs. The student will be responsible for all radio communications, collision avoidance, and wake turbulence avoidance.

CONTENTS:

1. Use of outdated charts
2. First post-refueling check
3. Second post-refueling check
4. Takeoffs
 - A. Normal takeoff
 - B. Crosswind takeoff
5. Landings
 - A. Normal landing
 - B. Crosswind landing
 - C. Slip to landing
 - D. Go around
6. Emergency Procedures

COMPLETION STANDARDS: This lesson will be completed when the student can demonstrate safe landings and takeoffs without assistance or direction. He/she should be capable of solving the routine problems encountered while in the traffic pattern and use correct radio communication procedures. He/she will be expected to maintain altitude within 100 feet, headings within 10 degrees, and airspeed within +/- 10 knots.

LESSON 14: (1.0 HOUR DUAL) PRE-SOLO STAGE CHECK REVIEW
PRE/POSTFLIGHT BRIEFING: (0.5 HOURS)

OBJECTIVES: This lesson provides the opportunity for the designated flight instructor to determine by discussion and questions that the student is prepared for the pre-solo check.

CONTENTS:

1. Pre-flight procedures
2. Slow flight (with and without flaps)
3. Stall series
4. Ground reference maneuvers
5. Emergency procedures
6. Normal takeoff and landing
7. No-flap landing (slip to landing)
8. Cross-wind procedures
9. Go-around
10. Traffic pattern procedures
11. Radio communication procedures
12. Collision avoidance techniques

COMPLETION STANDARDS: This lesson will be completed when the student demonstrates to the satisfaction of the instructor, the knowledge level required for solo operations.

LESSON 15: (1.0 HOUR ORAL/1.0 HOUR DUAL) PRE-SOLO STAGE CHECK

OBJECTIVES: During this lesson, a check flight instructor will determine that the student is capable of conducting solo flights safely and that he/she is qualified for solo operations.

CONTENTS:

1. Prior to beginning this stage check, the student must have passed the pre-solo written examination. The stage check instructor will discuss the results of this examination
2. The stage check instructor will discuss with the student all material covered in this stage including the following:
 - A. Knowledge of the aircraft and aircraft procedures
 - B. Operating in the local area
 - C. Airport operating procedures and communications
 - D. Emergencies
 - E. Student pilot limitations
 - F. Stall awareness, spin recovery
 - G. Coping with distractions
3. Pre-flight inspection
4. Check of required documentation
5. Starting and warm-up
6. Taxiing/parking
7. Pre-takeoff check
8. Four fundamentals
9. Slow flight
10. Stall recognition and recovery
11. Emergency approach and landing
12. Steep turns
13. Normal and crosswind takeoff and climb
14. Normal and crosswind approach and landing
15. Traffic pattern procedures
16. Go-around (Full Flaps)
17. No-flap landing (Forward slip to land)
18. Radio communication procedures
19. Collision avoidance awareness
20. Shutdown and securing aircraft
21. Use of checklists
22. Dealing with distractions
23. Aeromedical factors
24. Ground reference maneuvers

COMPLETION STANDARDS: This lesson will be completed when the student demonstrates a reasonable knowledge of all the material covered in this stage. The student will be expected to perform all ground, pre-flight, and flight operations in a manner that shows the check pilot that he/she is prepared for solo flight. The student should be able to maintain altitude within 200 feet, heading within 10 degrees, and the airspeed within 10 knots.

LESSON 16: (0.5 HOUR DUAL, 0.5 HOUR SOLO) SUPERVISED SOLO

OBJECTIVES: During this lesson the student will complete the first solo flight under the supervision of the instructor.

CONTENTS:

1. The designated instructor must review:
 - A. Any areas shown to be weak on the pre-solo stage check
 - B. Taxi procedures with wind
 - C. Takeoffs
 - D. Landings
 - E. Go-around
 - F. Collision avoidance techniques
2. A minimum of three supervised takeoffs and landings
3. Three solo takeoffs and landings to a full stop

COMPLETION STANDARDS: The student will be required to pilot, as the sole occupant, the aircraft in the traffic pattern. The student must accomplish at least three landings and takeoffs safely to a full stop.

LESSON 17: (0.5 HOUR DUAL, 0.5 HOUR SOLO) SUPERVISED SOLO

OBJECTIVES: During this lesson the student will complete the second supervised solo flight.

CONTENTS:

1. The designated instructor must review:
 - A. Any areas shown to be weak on the pre-solo stage check
 - B. Taxi procedures with wind
 - C. Takeoffs
 - D. Landings
 - E. Go-around
 - F. Collision avoidance techniques
2. Three solo takeoffs and landings to a full stop

COMPLETION STANDARDS: The student will be required to pilot, as the sole occupant, the aircraft in the traffic pattern. The student will accomplish at least three landings and takeoffs safely to a full stop.

PROFESSIONAL AVIATION 111

FLIGHT TRAINING STAGE TWO

PRIVATE PILOT OPERATIONS

OBJECTIVES: During this stage, the student will be instructed in all operations and procedures required at the Private Pilot level. This includes local and cross-country flights, operations into unfamiliar airports, soft and short-field take off and landing procedures, and night operations.

REFERENCES:

1. The Department of Professional Aviation TCO for the Private Pilot Certification Course.
2. The FAR/AIM Manual
3. Aeronautical Decision Making for Private Pilots
4. Private Pilot Practical Test Standards

COMPLETION STANDARDS: This stage will be completed when the student has demonstrated through dual and solo flight and a stage check that he/she demonstrates knowledge and proficiency in all of the private pilot maneuvers.

LESSON	INDEX				PAGE
	DUAL	SOLO	FTD	ORAL	
1. AREA CHECKOUT				1.0	53
2. AREA CHECKOUT	1.0			1.0	54
3. AREA SOLO		1.0			55
4. SHORT AND SOFT FIELD PROCEDURES				1.0	56
5. SHORT AND SOFT FIELD PROCEDURES	1.0			0.5	57
6. NIGHT OPERATIONS				1.0	59
7. NIGHT OPERATIONS	1.0			0.5	60
8. DIVERSIONS AND BASIC NAVIGATION	1.0			0.5	61
9. CROSS-COUNTRY OPERATIONS				2.0	62
10. CROSS-COUNTRY OPERATIONS	2.0			0.5	63
11. NIGHT CROSS-COUNTRY OPERATIONS	2.0			0.5	64
12. CROSS-COUNTRY STAGE CHECK REVIEW			1.0	1.0	65
13. CROSS-COUNTRY STAGE CHECK	1.0			1.0	66
14. SOLO CROSS-COUNTRY		2.0			66
15. SOLO CROSS-COUNTRY		2.5			67
16. SOLO CROSS-COUNTRY		2.5			68
17. PRIVATE PILOT REVIEW				1.0	69
18. PRIVATE PILOT REVIEW	1.0			0.5	70
19. PROFICIENCY PRACTICE FLIGHT		1.0			71
20. FINAL PRIVATE PILOT REVIEW	1.5			1.0	72
21. PRIVATE PILOT FINAL STAGE CHECK	<u>1.5</u>			<u>1.0</u>	73
TOTAL STAGE TWO	13.0	9.0	1.0	14.0	

LESSON 1: (1.0 HOUR ORAL) AREA CHECKOUT

OBJECTIVE: In this lesson, the instructor will discuss the magnetic compass, compass errors, and how to compensate for the errors. The instructor will also explain briefly the principles behind the navigation instruments in the airplane and how to use them. Unusual flight attitudes will be introduced to the student with the focus on recovery procedures.

CONTENTS:

1. Magnetic compass turns
2. VOR, ADF, and GPS orientation
3. Unusual flight attitudes
4. Emergency and critical situations
 - A. Lost Procedures
 - B. Deteriorating weather situations
 - C. Eminent engine failure
 - D. Operation to surrounding airports
 - E. Loss of gyro instruments
5. Sectional Aeronautical Chart
 - A. Orientation of practice areas and their boundaries
 - B. Information on surrounding airports
 - C. Prominent landmarks and hazards in area

COMPLETION STANDARDS: This lesson will be completed when the student shows a basic knowledge, through oral questioning from the instructor, of the magnetic compass, navigation systems, and unusual flight attitude recoveries.

LESSON 2: (1.0 HOUR DUAL) AREA CHECKOUT
PRE/POSTFLIGHT BRIEFING: (0.5 HOURS)

OBJECTIVE: In this lesson, the student will navigate by reference to the VOR, ADF, and GPS, perform recoveries from unusual flight attitudes, and perform turns using the magnetic compass with little or no assistance from the instructor.

CONTENTS:

1. Magnetic compass turns
2. VOR, ADF, and GPS orientation
3. Unusual flight attitudes

COMPLETION STANDARDS: This lesson will be completed when the student can navigate by reference to the navigation instruments in this lesson, recover from unusual attitudes, and perform magnetic compass turns with little or no assistance from the instructor.

LESSON 3: (1.0 HOUR SOLO) AREA SOLO

OBJECTIVE: During this lesson the student will fly into the instructor directed designated practice areas. The student will practice slow flight, VOR orientation, and takeoffs and landings. He/she will practice maintaining orientation using airplane navigational and ground reference points. Prior to this flight, the instructor will review the procedures to follow should he/she become lost or encounter deteriorating weather.

CONTENTS:

Prior to departure the student will discuss the flight with his/her instructor and obtain approval for the flight. After the flight, the instructor will review the flight with the student.

1. Four fundamentals of flight
2. Climbing and descending turns
3. Clearing turns
4. Slow flight
5. VOR orientation and homing
6. Landings (full stop) and takeoffs

COMPLETION STANDARDS: This lesson will be completed when the student has completed the solo review and practiced the maneuvers assigned by the flight instructor.

LESSON 4: (1.0 HOUR ORAL) SHORT AND SOFT-FIELD PROCEDURES

OBJECTIVES: This lesson is an instructor briefing on procedures and techniques for operating into and out of short and soft fields. The instructor will also introduce ATC light gun signals and review basic flight maneuvers.

CONTENTS:

The instructor will discuss the following with the student:

1. Short-Field Operations
2. Soft-Field Operations
3. Aircraft Handbook
 - A. Speeds, flap settings, procedures
 - B. Performance data for short and soft-field operations
4. Review of Basic Maneuvers
 - A. Stalls
 - B. Slow flight
 - C. Steep turns
 - D. Ground reference Maneuvers
 - E. Use of the magnetic compass
5. ATC light gun signals

COMPLETION STANDARDS: At the completion of this lesson, the student should be knowledgeable on the procedures and techniques for short and soft-field takeoffs and landings. He/she will be expected to explain the basic flight maneuvers and ATC light gun signals.

LESSON 5: (1.0 HOUR DUAL) SHORT AND SOFT-FIELD PROCEDURES
PRE/POSTFLIGHT BRIEFING: (0.5 HOURS)

OBJECTIVES: During this lesson, the student will practice the advanced private pilot maneuvers. Primary emphasis is on soft and short-field takeoffs and landings. Previous maneuvers to include stalls, steep turns, and spins will be reviewed and practiced at the direction of the flight instructor.

CONTENTS:

1. Power off Stall
2. Power on Stall
3. Steep turns
4. Short-field takeoff
5. Soft-field takeoff
6. Short-field landing
7. Soft-field landing
8. Traffic awareness

COMPLETION STANDARDS: This lesson will be completed when the student can demonstrate knowledge of the principles of short and soft-field takeoffs and landings and perform them with reasonable proficiency. He/she will be expected to perform the basic flight maneuvers including spin recovery with reasonable proficiency.

LESSON 6: (1.0 HOUR ORAL) NIGHT OPERATIONS

OBJECTIVES: During this lesson, the student will be briefed on night flight operations and potential emergency situations that may occur at night. The briefing will also include physiological factors associated with night flight, aircraft lighting, navigation, and night techniques for coping with distractions that are typically encountered during night ground and flight operations.

CONTENTS:

The instructor will discuss the following with the student:

1. Night flight considerations
 - A. Vision
 - B. Judgement
 - C. Orientation
 - D. Recognition of other aircraft and their relative position by lights
 - E. Weather (cloud height, temperature/dew point spread, winds)
2. Appropriate FARs
 - A. Equipment required
 - B. Recency of experience
3. Night navigation
 - A. Airport lighting
 - B. Orientation to the night flight practice areas
 - C. Navigation techniques and considerations
 - D. Use of magnetic compass
4. Night piloting techniques
 - A. Taxiing
 - B. Safe speeds
 - C. Runway alignment for takeoff
 - D. Approaches and landings
 - E. Maintaining a safe climb and approach path
5. Basic Instrument Maneuvers
6. Night emergencies
 - A. Engine failure
 - B. Weather problems
 - C. Failure of cockpit and landing lights
 - D. Complete electrical failure
 - E. Lost procedures
7. Distractions during night operations

COMPLETION STANDARDS: This lesson will be completed when the student displays the knowledge required to commence the night flight phase of training. He/she should respond correctly to questions on night flight procedures, emergency procedures, how to maintain orientation in the local practice area, and in the night traffic pattern. He/she must understand the use of ground lighting and visual aids.

LESSON 7: (1.0 HOUR DUAL) NIGHT OPERATIONS
PRE/POSTFLIGHT BRIEFING: (0.5 HOURS)

OBJECTIVES: This is a night orientation flight. The student will be instructed on all phases of local night flight operations to include takeoffs, landings, local area navigation, lost procedures, night weather considerations, and suitable alternate airports where a landing could be made. The instructor will review night physiological factors, orientation, aircraft lighting, navigation, night emergencies, and dealing with distractions that are typically encountered during night ground and flight operations.

CONTENTS:

1. Weather briefing
2. Pre-flight inspection
3. Taxiing
4. Takeoff and departure
5. Basic instrument maneuvers
6. Local area orientation
7. Interpretation of aircraft and airport lighting
8. Instrument flight (loss of visual reference and use of the magnetic compass)
9. Traffic pattern (10 landings)
10. Approaches
11. Landings
12. Simulated electrical system failure
13. Landing with no lights

COMPLETION STANDARDS: This lesson will be completed when the student displays the ability to maintain orientation in the local practice area and traffic pattern and makes a minimum of five takeoffs and landings as sole manipulator of the controls. He/she should be able to accurately interpret aircraft and runway lights, fly the traffic pattern, and perform takeoffs and landings without the instructor's assistance. The student will be expected to demonstrate knowledge of night operations including night emergency situations, stall awareness, and spin recovery. All flight tasks will be evaluated against the tolerances prescribed in the Private Pilot Practical Test Standards.

LESSON 8: (1.0 HOUR DUAL) DIVERSIONS AND BASIC NAVIGATION
PRE/POSTFLIGHT BRIEFING: (1.0 HOURS)

OBJECTIVES: The instructor will brief the student on the diversion procedures and basic navigations and review the navigation systems, radar service, diversion procedures, and lost procedures.

CONTENTS:

1. Alternate airport selection
2. Determine distance, time, fuel, and ETA
3. Pilotage and dead reckoning
4. Radio aids navigation
5. Select appropriate frequencies from the AFD
6. Radar services, requesting assistance
7. Lost procedures
8. VOR/ADF/GPS operations

COMPLETION STANDARDS: This lesson will be completed when the student shows the proper diversion procedures, lost procedures, and navigation usage for his/her flight. All flight tasks will be evaluated against the tolerances prescribed in the Private Pilot Practical Test Standards.

LESSON 9: (2.0 HOUR ORAL) CROSS-COUNTRY OPERATIONS

OBJECTIVES: The instructor will brief the student on the operational data required for VFR cross-country flight planning and review the elements of navigation using pilotage, dead reckoning, and radio navigation. The instructor will review the procedures for procuring weather and NOTAM information.

CONTENTS:

1. Operational data
 - A. Weight and balance
 - B. Airplane performance to include all handbooks, charts, graphs, and tables
 - C. Aircraft endurance
2. Airplane documents
3. Airworthiness inspection records
 - A. Maintenance records
 - B. Required equipment and instruments
4. Types of navigation
 - A. Pilotage
 - B. Dead reckoning
 - C. Radio navigation
 - D. Use of magnetic compass
5. Flight planning
 - A. Plotting courses and checkpoints
 - B. Preparing a flight log and filing, opening, and closing a flight plan
6. Airport information
 - A. Use of the Airport Facility Directory
 - B. Airport procedures at towered and non-towered airports, airports with FSS's, and use of approach control for traffic and airport information.
7. Airspace rules including
 - A. Non-towered, towered, and special use airspace
 - B. Flying on victor airways
 - C. Communications within class B airspace
8. Analyzing weather
9. Cross-country emergencies
 - A. Deteriorating and weather not forecasted, unexpected winds, and inadvertent entry into instrument conditions
 - B. Deviation to alternate procedures
 - C. Low fuel and forced landing procedures
10. Lost procedures, DF steer procedures, and radar vectors

COMPLETION STANDARDS: This lesson will be completed when the student, to the satisfaction of the instructor, understands the elements of cross-country flight using pilotage, dead reckoning, and radio navigation.

LESSON 10: (2.0 HOUR DUAL) CROSS-COUNTRY OPERATIONS
PRE/POSTFLIGHT BRIEFING: (0.5 HOURS)

OBJECTIVES: This lesson gives the student an opportunity to plan a cross-country flight and fly the flight as he/she planned it. The student will plan different portions of the route using pilotage, dead reckoning, and radio navigation. The instructor will review all of the elements involved in preparing and executing a VFR cross-country flight. The student will practice simulated emergency procedures typically encountered during a cross-country flight. During the flight, the student will be faced with certain distractions that typically occur during cross-country flights.

CONTENTS:

1. The navigation flight log
2. VFR clearance procedures
3. Basic instrument flight
4. VOR orientation, homing, and tracking
5. VFR cross-country communications procedures
6. Radar vectors
7. FAA Private Pilot Practical Test Standards
8. VFR altitudes

COMPLETION STANDARDS: This lesson will be completed when the student has accomplished a cross-country flight log, procured the weather and NOTAM's for the flight, and flown the route as planned. He/she should be able to apply pilotage, dead reckoning. He/she must be able to calculate airplane weight and balance and performance. The student will be required to plan for diversion to an alternate destination and demonstrate basic instrument procedures.

**LESSON 11: (2.0 HOUR DUAL) NIGHT CROSS-COUNTRY OPERATIONS
PRE/POSTFLIGHT BRIEFING: (0.5 HOURS)**

OBJECTIVES: This lesson is intended to further enforce the items learned in lesson eight and nine by flying a night cross-country flight of more than 100 nautical miles total distance, which he/she has planned. The student will practice portions of the route using pilotage, dead reckoning, and radio navigation. The instructor will review all of the elements involved in planning and executing a VFR cross-country flight. The student will be presented with distractions that typically occur during cross-country flights.

CONTENTS:

1. The navigation flight log
2. VFR clearance procedures
3. Basic instrument procedures
4. VOR orientation, homing, and tracking
5. Using the magnetic compass
6. VFR cross-country communications procedures
7. ADF orientation, homing, and tracking
8. Radar vectors

COMPLETION STANDARDS: This lesson will be completed when the student has demonstrated the ability to accomplish a cross-country flight log, procure and analyze the weather for the flight, and fly the route as planned. He/she should be able to apply pilotage, dead reckoning and radio navigation procedures to the flight plan and demonstrate knowledge of the information available in the appropriate publications. He/she must be able to calculate airplane weight and balance and performance. The student will be expected to maintain altitude within 200 feet and fly the planned course while maintaining the planned power settings. The student must be able to correctly identify the airplane's position and determine estimated time of arrival over planned checkpoints and destination within 5 minutes. The student will be required to plan for diversion to an alternate destination and navigate using the magnetic compass.

LESSON 12: (1.0 HOUR ORAL/1.0 HOUR FTD) CROSS-COUNTRY STAGE CHECK REVIEW

PRE/POSTFLIGHT BRIEFING: (1.0 HOURS)

OBJECTIVES: This lesson provides the opportunity for the designated flight instructor to determine by discussion and questions that the student is prepared for the final stage check.

CONTENTS:

1. Pre-flight procedures
2. Cross-country flying
3. VOR, ADF, and GPS navigation
4. Basic instrument maneuvers
5. Emergency procedures
6. Normal takeoff and landing
7. Short-field takeoff and landing
8. Soft-field takeoff and landing
9. No-flap landing (slip to landing)
10. Cross-wind procedures
11. Go-around
12. Traffic pattern procedures
13. Radio communication procedures
14. Collision avoidance techniques

COMPLETION STANDARDS: This lesson will be completed when the student demonstrates to the satisfaction of the instructor, the knowledge level required for solo cross-country operations.

LESSON 13: (1.0 HOUR ORAL/ 1.0 HOUR DUAL) CROSS-COUNTRY STAGE CHECK

OBJECTIVES: In this flight the student must demonstrate to the designated instructor that he/she can accurately and safely accomplish a solo cross-country flight. The student must be able to divert to an alternate airport and be able to troubleshoot any emergency situation that the instructor selects. The designated flight instructor will also evaluate the student on selected maneuvers from previous lessons.

CONTENTS:

The student will, at a minimum, demonstrate knowledge and skill of:

1. Cross country planning and the navigation log
2. Weather procurement and analysis
3. En-route procedures
4. Pilotage, dead reckoning, and radio navigation
5. Emergency procedures
6. Diversion to an alternate
7. VOR, ADF, GPS orientation
8. Radio communications
9. Basic instrument maneuvers
10. Radar vectors
11. Normal/cross-wind takeoffs and landings
12. No flap/slip to landing
13. Short/soft-field takeoffs and landings
14. Magnetic compass turns
15. Collision avoidance procedures
16. Use of checklists
17. Dealing with distractions

COMPLETION STANDARDS: This lesson will be completed when the student has demonstrated to the stage check instructor that he/she can accurately and safely accomplish a solo cross-country flight. The student must perform the selected maneuvers within the Private Pilot Practical Test Standards.

LESSON 14: (2.0 HOUR SOLO) SOLO CROSS-COUNTRY

OBJECTIVES: This lesson requires that the student accomplish a solo cross-country flight of at least 100 nautical miles total distance, with one landing at a towered airport. The flight must be planned in compliance with all university operating procedures. Prior to departure, the student will discuss the flight with his/her instructor and obtain approval for the flight. After the flight, the instructor will review the flight with the student.

CONTENTS:

The instructor should review

1. Cross-country planning and the flight log
2. Weather procurement and analysis
3. En-route procedures
4. Pilotage, dead reckoning, and radio navigation
5. Emergency procedures
6. Diversion to an alternate

COMPLETION STANDARDS: This lesson will be completed when the student makes the cross-country flight to the satisfaction of his/her instructor. He/she will be expected to complete the flight safely and to react appropriately to any critical situation encountered. He/she will also be expected to comply with all regulations and school operating procedures for solo flight and solo cross-country flight with a landing at an airport with an operating control tower.

LESSON 15: (2.5 HOUR SOLO) SOLO CROSS-COUNTRY

OBJECTIVES: This lesson requires that the student accomplish a solo cross-country flight of at least 150 nautical miles total distance with full stop landings at a minimum of three airports, one of which is at least 50 nautical miles from the point of departure. This flight requires a landing at a Class C airport. The flight must be planned in compliance with all university operating procedures. Prior to departure, the student will discuss the flight with his/her instructor and obtain approval for the flight. After the flight, the instructor will review the flight with the student.

CONTENTS:

The instructor should review

1. Cross-country planning and the flight log
2. Weather procurement and analysis
3. En-route procedures
4. Pilotage, dead reckoning, and radio navigation
5. Emergency procedures
6. Diversion to an alternate
7. Class C airport requirements

COMPLETION STANDARDS: This lesson will be completed when the student makes the cross-country flight to the satisfaction of his/her instructor. He/she will be expected to complete the flight safely and to react appropriately to any critical situation encountered. He/she will also be expected to comply with all regulations and school operating procedures for solo flight and solo cross-country flight with a landing at an airport with an operating control tower.

LESSON 16: (2.5 HOUR SOLO) SOLO CROSS-COUNTRY

OBJECTIVES: This lesson requires that the student accomplish a solo cross-country flight of at least 100 nautical miles total distance with one landing at a towered airport. The flight must be planned in compliance with all university operating procedures. Prior to departure, the student will discuss the flight with his/her instructor and obtain approval for the flight. After the flight, the instructor will review the flight with the student.

CONTENTS:

The instructor should review

1. Cross-country planning and the flight log
2. Weather procurement and analysis
3. En-route procedures
4. Pilotage, dead reckoning, and radio navigation
5. Emergency procedures
6. Diversion to an alternate
7. Class C airport requirements

COMPLETION STANDARDS: This lesson will be completed when the student makes the cross-country flight to the satisfaction of his/her instructor. He/she will be expected to complete the flight safely and to react appropriately to any critical situation encountered. He/she will also be expected to comply with all regulations and school operating procedures for solo flight and solo cross-country flight with a landing at an airport with an operating control tower.

LESSON 17: (1.0 HOUR ORAL) PRIVATE PILOT REVIEW

OBJECTIVES: This lesson provides the designated instructor an opportunity to review all of the procedures and maneuvers previously learned and to brief the student on any new requirements prior to the final flight check. Emphasis will be placed on a thorough review of the student's performance to date and identification of any areas where the student has performed below standards or where the student appears unsure of the correct procedures.

CONTENTS:

1. The instructor as a minimum will review
 - A. Student performance to date
 - B. Final practical exam requirements
 - C. Private pilot final flight check requirements
 - D. Private Pilot Practical Test Standards
2. Basic private pilot maneuvers
3. Instrument flight
4. Navigation
5. Cross-country procedures
6. Emergency procedures

COMPLETION STANDARDS: This lesson is complete when the student and the instructor have identified areas for special emphasis for practice on the remaining private pilot review lessons.

LESSON 18: (1.0 HOUR DUAL) PRIVATE PILOT REVIEW
PRE/POSTFLIGHT BRIEFING: (0.5 HOURS)

OBJECTIVES: During this lesson, the student will practice those flight maneuvers identified by the instructor that require additional practice and review. The instructor will critically evaluate the student's performance on each maneuver based upon practical test standards. The primary objective is to continue fine-tuning the student's proficiency in preparation for the final stage check.

CONTENTS:

1. Short field takeoff and landing
2. Normal takeoffs and landings
3. No-flap landing
4. Slip to landing
5. Soft-field takeoffs and landings
7. Cross-wind procedures
8. Go-around
9. Traffic pattern procedures
10. Slow flight (with and without flaps)
11. Stall series
12. Steep turns
13. Ground reference maneuvers
14. VOR, ADF, and GPS navigation

COMPLETION STANDARDS: The instructor will critique the student's performance on each maneuver based upon the Private Pilot Practical Test Standards. The instructor will make recommendations on those areas where improved proficiency is required.

LESSON 19: (1.0 HOUR SOLO) PROFICIENCY PRACTICE FLIGHT

OBJECTIVES: During this lesson the student will practice those flight maneuvers that require additional practice and review. The student will critically evaluate his/her performance on each maneuver based upon the practical test standards. The primary objective is to continue fine-tuning the student's proficiency in preparation for the final stage check.

CONTENTS:

1. Slow flight (with and without flaps)
2. Stall series
3. Steep turns
4. Ground reference maneuvers
5. Normal takeoffs and landings
6. Short-field takeoffs and landings
7. Soft-field takeoffs and landings
8. Cross-wind procedures
9. No-flap landing (and slip to landing)
10. Go-around

COMPLETION STANDARDS: This lesson will be completed when the student has demonstrated to the flight instructor that he/she can perform the maneuvers listed above within the Private Pilot Practical Test Standards.

LESSON 20: (1.5 HOUR DUAL) FINAL PRIVATE PILOT STAGE CHECK REVIEW
PRE/POSTFLIGHT BRIEFING: (1.0 HOURS)

OBJECTIVES: This lesson provides the opportunity for the designated flight instructor to determine by discussion and questions that the student is prepared for the final stage check.

CONTENTS:

1. Pre-flight procedures
2. Cross-country flying
3. VOR, ADF, and GPS navigation
4. Instrument flight
5. Slow flight (with and without flaps)
6. Stall series
7. Ground reference maneuvers
8. Emergency procedures
9. Normal takeoff and landing
10. Short-field takeoff and landing
11. Soft-field takeoff and landing
12. No-flap landing (slip to landing)
13. Cross-wind procedures
14. Go-around
15. Traffic pattern procedures
16. Radio communication procedures
17. Collision avoidance techniques

COMPLETION STANDARDS: This lesson will be completed when the student demonstrates to the satisfaction of the instructor, the knowledge level required of the private pilot.

LESSON 21: (1.0 HOUR ORAL/1.5 HOUR DUAL) PRIVATE PILOT FINAL STAGE CHECK

OBJECTIVES: During this lesson a designated flight instructor will determine that the student has the knowledge and skill of a safe and accurate private pilot as prescribed by the Private Pilot Practical Test Standards.

CONTENTS:

1. Review and demonstrate as a minimum
 - a. Preflight preparation
 - b. Preflight procedures
 - c. Airport operations
 - d. Takeoffs, landings, and go-arounds
 - e. Performance maneuvers
 - f. Ground reference maneuvers
 - g. Navigation
 - h. Slow flight and stalls
 - i. Basic instrument maneuvers
 - j. Emergency maneuvers
 - k. Night operations
 - l. Postflight procedures
2. Critique stage check
3. Complete required documentation
4. Prepare graduation certificate

COMPLETION STANDARDS: This lesson will be completed when the student demonstrates to the satisfaction of the flight instructor, the knowledge level and pilot proficiency required of the private pilot. Performance will be evaluated against the Private Pilot Practical Test Standards. Consideration will be given to the student's judgement, alertness, coordination, and smoothness. Unsatisfactory performance of any required knowledge area or maneuver constitutes failure of the stage check. Upon successful completion of this stage check, the student will be graduated from the Private Pilot Course.