

SPORTY'S®

***WHAT YOU SHOULD KNOW®* SERIES**

INSTRUMENT RATING TRAINING COURSE OUTLINE

(FLIGHT TRAINING SYLLABUS)

**Sporty's Academy, Inc.
Clermont County/Sporty's Airport
Batavia, OH 45103**

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sportys.com

STUDENT INFORMATION

Name _____
LAST FIRST MIDDLE
Address _____
City _____ State _____ ZIP _____
Telephone _____
MOBILE HOME WORK
Email _____
Pilot Cert. _____
TYPE CERT # DATE ISSUED
Emergency Contact _____
Phone _____ Relationship _____

ENROLLMENT INFORMATION

Course Title _____
Enrollment Date _____ Approved School Cert # _____
Medical Certificate _____
CLASS DATE ISSUED
Previous School _____ Course Title _____
Training Credit _____
FLIGHT GROUND
Approval of Training Credit _____
CHIEF INSTRUCTOR
Remarks _____

STAGE CHECK / KNOWLEDGE TEST COMPLETION RECORD

Date _____ Stage _____ Ck Pilot _____ Date _____ Stage _____ Ck Pilot _____
Date _____ Stage _____ Ck Pilot _____
Date of Knowledge Test _____ Grade _____

ENDORSEMENT RECORD

Pre-Training U.S. Citizenship Confirmation or TSA Alien Flight Training Requirements
Completed with Records Date _____ Type _____ Inst. Int. _____
Complex / High Performance Airplane
Date _____ A/C Type _____ Inst. Int. _____

COMPLETION INFORMATION

Completion _____ Transfer _____ Terminated _____
DATE DATE DATE
Records Certified Correct _____
CHIEF INSTRUCTOR
Remarks _____

TRAINING COURSE OUTLINE INSTRUMENT RATING - AIRPLANE

COURSE OBJECTIVES

The student will obtain the aeronautical skill and experience necessary to meet the requirements for an Airplane Category Instrument Rating.

COURSE COMPLETION STANDARDS

The student must demonstrate through flight tests and school records that the aeronautical skill and experience requirements necessary to obtain an Airplane Category Instrument Rating have been met.

TRAINING COURSE OUTLINE INSTRUMENT RATING - AIRPLANE

COURSE INTRODUCTION

Sporty's Training Course Outline for the Instrument Rating – Airplane is the syllabus portion of the Sporty's Academy 14 CFR Part 141* Approved Instrument Rating Training Course. This outline provides a logical, structured sequence that maximizes learning and meets 14 CFR Part 141 training time requirements. Training times must be increased slightly to meet 14 CFR Part 61* requirements for students training under those rules. This Training Course Outline also contains ground lessons appropriate to the Instrument Rating.

COURSE CONCEPT

The Instrument Rating course utilizes the building-block theory of learning, which recognizes that each item taught must be presented on the basis of previously learned knowledge and skills.

For optimum effectiveness, the ground lessons and viewing of the associated video segments should be completed prior to the respective flight lessons. If a considerable length of time has elapsed between the ground lesson and the associated flight, the instructor may wish to conduct a short review of essential material.

COURSE ELEMENTS

The course includes the latest FAA pilot certification requirements and a maximum of student-oriented instruction. The syllabus and support materials not only provide necessary information, but also guide the student through the course in a logical manner.

STUDENT VIDEO PREPARATION

The Sporty's Instrument Rating Training Course Outline is based on Sporty's Instrument Rating Course, online and via apps (iOS, Apple TV, Android, Roku). It is important that the student view all seven video volumes in the Instrument course. For each ground and flight lesson, specific video sections are indicated for additional study which should be accomplished as part of a self-study program. Additional topics may also be assigned by the instructor. To maximize the learning benefit of the videos, the student should also review the video sections after completion of the lesson. This is particularly true of any subject areas where the student encountered difficulty.

PREFLIGHT ORIENTATION

Prior to each dual lesson, the instructor must provide the student with a thorough overview of the subject matter to be covered during the lesson. The instructor should select a quiet, private place to brief the student and explain the lesson material. It is important that the instructor define unfamiliar terms and explain the maneuvers and objectives of each lesson.

*14 CFR Part 141 and 14 CFR Part 61 refer to the appropriate parts of Title 14 of the Code of Federal Regulations. Title 14 covers aeronautics and space. The regulations in this title are often referred to as the Federal Aviation Regulations or FARs.

FLIGHT TRAINING DEVICE / AVIATION TRAINING DEVICE

Sporty's Training Course Outline for the Instrument Rating is designed to allow practice of maneuvers and procedures in the airplane only after the student has been introduced to and taught the maneuver or procedure in an approved flight training device (FTD) or approved aviation training device (ATD). FTD / ATD lessons are more effective for initial explanation, discussion, and introduction of new material. The best results are obtained when the student learns a maneuver or procedure prior to flying the airplane. Ideally the airplane should be used to practice what has been learned in the FTD or ATD. Refer to the letter of authorization for the device to determine what may count toward the time required for the Instrument Rating. When procedures and maneuvers are introduced in the airplane the instructor must explain and discuss the new material to ensure that the student thoroughly understands the new material.

AIRPLANE PRACTICE

Airplane practice must be conducted so that the student obtains the maximum benefit from each flight. Each flight, where applicable, should begin with a review of previously practiced maneuvers, as deemed necessary by the instructor, before any new maneuvers are reviewed. If the airplane is not equipped for all of the tasks detailed in a particular lesson, the items that cannot be completed for this reason should be discussed. If there is a possibility that the student will use an airplane that is equipped for these tasks during the practical test, the tasks should be successfully demonstrated by the student at some point in the training.

POSTFLIGHT EVALUATION

The postflight evaluation is equally as important as the preflight orientation. During each postflight session, the student must be thoroughly debriefed. Noticeable advancement should be apparent and recommendations should be made for improvement, where appropriate. This action is a valuable instructional technique because it increases retention. The instructor must also discuss the elements of the next lesson. This prepares the student for the video assignment and will enhance the student's understanding.

LESSON TIMES

Lesson times are specified as a guide to meeting the 14 CFR Part 141 training requirements for the Instrument Rating. Under the building block concept, however, the student must achieve a specific level of proficiency before starting the next lesson. Lessons may be combined or repeated as needed based on the progress made by the student. The Course Time Allocation Table is provided for planning purposes. It is imperative that the instructor and student periodically review the student's overall progress and determine that the training requirements are consistently being met.

OPTIONAL LESSONS

There are 5 lessons that may be found at the end of this TCO which are optional substitutions for lessons 9, 10, 11, 24, & 26. These lessons include NDB / ADF concepts and may be utilized if the training aircraft is ADF equipped or when otherwise desired.

STUDENT STAGE CHECKS

Stage checks measure the student's accomplishments during each stage of training. This procedure provides close supervision of training and another opinion on the student's progress. An examination of the building-block theory of learning will show that it is extremely important for progress and proficiency to be satisfactory before the student enters a new stage of training. Therefore, the next stage should not begin until the student successfully completes the current stage. Failure to follow this progression may defeat the purpose of the stage check and lead to overall course breakdown.

GRADING

Evaluation is an essential part of the teaching process. The student must be apprised of his or her progress. All instructional flights must be graded in accordance with the following criteria.

Each pilot operation will be evaluated at the completion of each flight.

1 = EXCELLENT	The student demonstrates knowledge or skills with no procedural or mechanical errors and the flight instructor does not provide any assistance
2 = ABOVE AVERAGE	The student demonstrates knowledge or skills that exceed standards. Occasional procedural or mechanical errors are quickly recognized and corrected.
3 = AVERAGE	The student consistently demonstrates knowledge and skills that meet standards with timely recognition of procedural or mechanical errors.
4 = BELOW AVERAGE	The student demonstrates knowledge and skills with difficulty, is slow in recognizing and correcting procedural or mechanical errors.
5 = BELOW ACCEPTABLE STANDARDS	The student does not demonstrate adequate knowledge or skills, is unable to recognize and correct procedural or mechanical errors.
I = INCOMPLETE	The student has not completed the pilot operation listed.

Each lesson will be assigned an overall grade based on the following criteria.

S = SATIS- FACTORY	The content of the lesson has been completed to the standards outlined in the individual lesson Completion Standards.
U = UNSATIS- FACTORY	Indicates that all or part of the lesson content was not completed to the standards outlined in the individual lesson Completion Standards. One or more pilot operations graded as a "5" will require an overall grade of unsatisfactory.
I = INCOMPLETE	Indicates the content of the lesson was not completed, but the pilot operations covered were satisfactory. Pilot operations not completed must be indicated with an "I".

GRADING NOTES

1. When a lesson is graded unsatisfactory, only those pilot operations graded as "5" must be repeated to standards during the next lesson.
2. When a lesson is graded incomplete, the pilot operations not performed must be completed prior to attempting the pilot operations for the next lesson.
3. Use the "CRS TOTALS: (F/I/D/FS)" lines within the grading box to total the student's flight, instrument (in the airplane), ground instruction (discussion), and FTD/simulator times in the course after each lesson.

INSTRUMENT FLIGHT PATTERNS

The instrument flight patterns "A" and "B" and associated text on the following pages have been reprinted from AC 61-27C, the Instrument Flying Handbook that preceded FAA-H-8083-15. AC 61-27C is no longer available, but these patterns are still quite useful in developing a pilot's ability to control the aircraft while flying solely by reference to the instruments. Aircraft control is the primary goal of using the flight patterns; the patterns are only a teaching tool for this purpose.

The instrument flight patterns are used in Stage I of this Training Course Outline.

TSA ALIEN FLIGHT STUDENT PROGRAM RECORDS

The TSA mandated Alien Flight Student Program (AFSP) has a number of compliance and record keeping requirements. Refer to the TSA website for details. The inside front cover of this book has a place to record that you have completed the requirements. That line is there to serve as a reminder to complete the TSA mandates but does not meet the documentation requirements.

Per the TSA, an instructor may elect to use an endorsement in the Student's *and* the Instructor's logbooks to document confirmation of a Student's U.S. Citizenship (not allowed for aliens). The Instructor's copy of the record must be kept for at least 5 years. The recommended text of the endorsement is as follows:

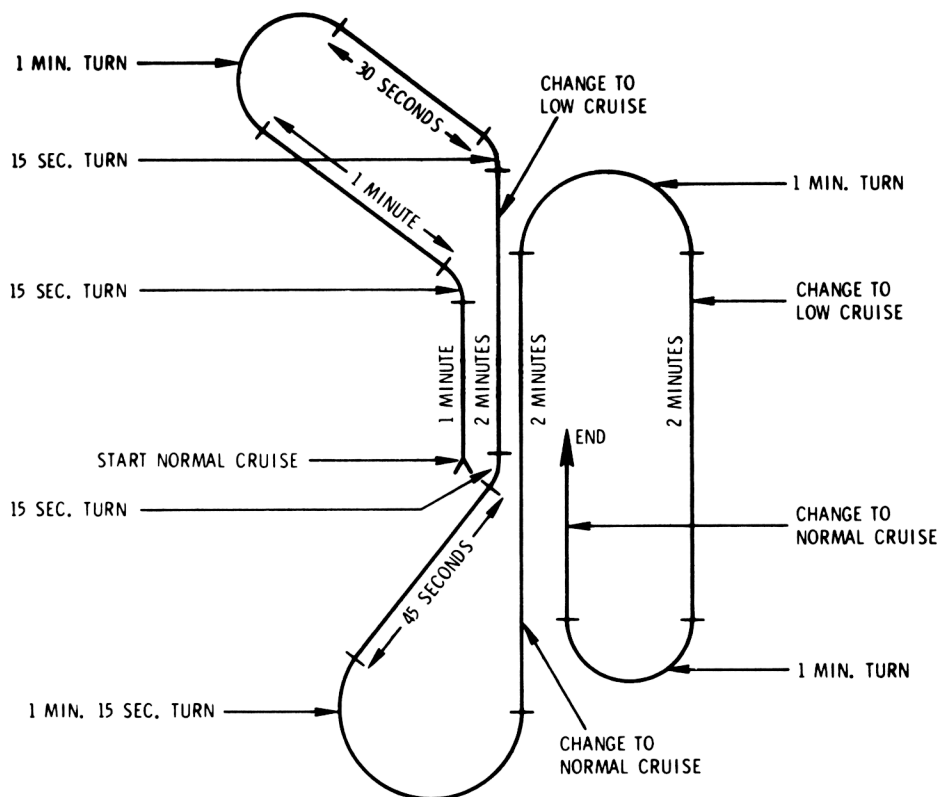
"I certify that [insert student's name] has presented me a [insert type of document presented, such as a U.S. birth certificate or U.S. passport, and the relevant control or sequential number on the document, if any] establishing that [he or she] is a U.S. citizen or national in accordance with 49 CFR 1552.3(h). [Insert date and instructor's signature and CFI number.]"

For details or clarification, refer to the TSA's website.

Pattern "A"

The purpose of both Pattern "A" and Pattern "B" is to further develop the pilot's ability to control the aircraft without deliberate thought. These patterns help prepare the student for the holding patterns and procedure turns he will fly during radio navigation. Initial practice should be on cardinal headings for simplification; however, as proficiency increases the student should be able to accomplish the patterns on any heading. The instructor may make various changes in the patterns, or, the patterns may be flown over a navigational facility, correcting for drift on each leg.

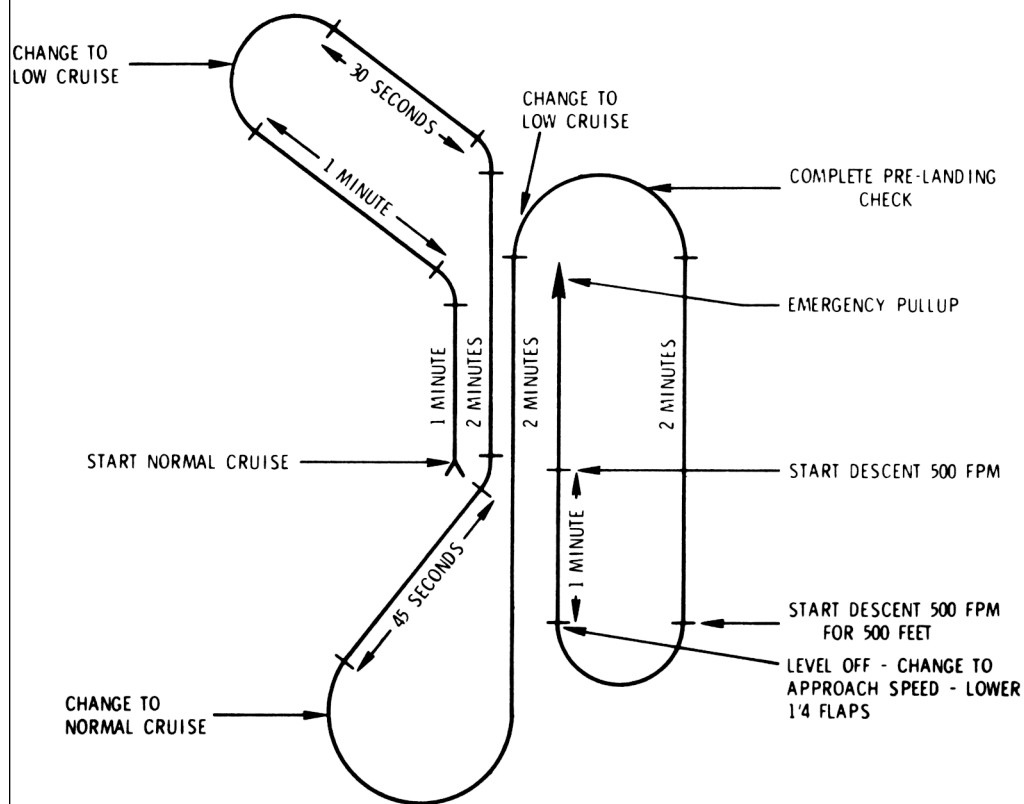
1. *Brief Student Thoroughly Prior to the Flight*
2. *Performance of Maneuver in the Aircraft*
 - a. This maneuver should be performed first with all available instruments, then on partial panel.
 - b. Start Pattern "A" and demonstrate through the first three turns, then have the student continue.
 - c. Timing should start when the clock second hand is on a cardinal point, preferably the 12 o'clock position.
 - d. The timing for this pattern is consecutive in that the time for each leg is started when control pressure is applied to recover from the preceding turn.
 - e. After recovery from turns, allow sufficient time for the compass card to stop oscillating, then note the heading and correct if necessary. An exception is the 30-second leg. If you note an error in heading here, compensate for it by lengthening or shortening the time allotted for the next turn.



- f. The turn coordinator and magnetic compass must be observed closely at all times. To correct a heading, use a timed turn (for small heading changes, use a half-standard rate turn).
- g. An efficient cross-check is required during airspeed changes so that corrections may be applied immediately.

Pattern "B"

1. *Brief Student Thoroughly Prior to the Flight*
2. *Performance of Maneuver in the Aircraft*
 - a. Do not demonstrate unless absolutely necessary.
 - b. All available instruments are used.
 - c. Roll out on headings regardless of time.
 - d. When changing airspeed in turns, *simultaneously* change bank and power, also pitch if applicable.
 - e. The descending final turn is made at an absolute rate.
 - f. The final descent is made to a minimum altitude set by the instructor, or until the time expires, whichever comes first.
 - g. The emergency pull-up is made as a normal go-around procedure, climbing to the original altitude.



INTEGRATION OF REDBIRD'S GIFT FOR INSTRUMENT RATING

Redbird's Guided Independent Flight Training (GIFT) for Instrument Rating is a simulator-based maneuvers training supplement designed to help you achieve your goals faster and for less money. GIFT allows you to learn, practice, and get feedback on every maneuver required for your Instrument Rating, at your own pace, using cutting edge educational techniques that push you to reach your best performance level. Each GIFT lesson focuses on a specific flight maneuver or skill required to earn your Instrument Rating and includes:

- A video and written pre-flight briefing
- A simulator mission with an AI-powered flight instructor that provides real-time coaching and corrections on your performance
- A post-flight debrief with objective scoring based on the FAA Airmen Certification Standards
- In-depth post-flight review and trend tracking by uploading your lesson history to the Redbird Cloud

Sporty's Academy has worked with Redbird to integrate their GIFT Modules into our Instrument Rating TCO. The table below will assist in this integration.

TCO Lesson	GIFT Module(s)
3	N/A
4	Pattern A Steep Turns
5	Pattern A Pattern B
7	Patterns A/B (as needed)
8	Patterns A/B (as needed)
9	Patterns A/B (as needed)
11	Patterns A/B (as needed)
12	Patterns A/B (as needed)
14	N/A
16	Patterns A/B (as needed)
18	Patterns A/B (as needed) Steep Turns
19	Patterns A/B (as needed) Steep Turns
21	Holding Pattern Direct Holding Pattern Teardrop Holding Pattern Parallel
24	Holding Patterns (as needed) VOR Approach RNAV LNAV Approach
26	Holding Patterns (as needed) VOR Approach RNAV LNAV Approach
29	ILS Approach Localizer Approach

TCO Lesson	GIFT Module(s)
30	ILS Approach LPV Approach RNAV LNAV + VNAV Approach
32	LPV Approach (circle to land) VOR Approach (partial panel) ILS Approach (partial panel)
33	VOR Approach (partial panel) RNAV LNAV + VNAV Approach (partial panel) ILS Approach
36	Approach procedures (as needed) Approach procedures (partial panel) as needed Approach procedures (missed approach) as needed
38	Holding procedures (as needed) Approach procedures (as needed)
39	Holding procedures (as needed) Approach procedures (as needed)
42	Approach procedures (applicable to cross-country flight) Holding procedures (applicable to cross-country flight)
43	Approach procedures (applicable to cross-country flight) Holding procedures (applicable to cross-country flight)
44	Approach procedures (applicable to cross-country flight) Holding procedures (applicable to cross-country flight)
45	Approach procedures (applicable to cross-country flight) Holding procedures (applicable to cross-country flight)
47	GIFT modules as needed for end of course review
48	GIFT modules as needed for end of course review

Course Time Allocation Table

STAGE NO.	LESSON	TRAINING TIMES			
		FLT	INSTRUMENT TIME (ACTUAL OR SIMULATED)	FTD / ATD	DISCUSSION
I	1				1.2
I	2				1.2
I	3	1.2	1.0		0.4
I	4	1.2	1.0		0.4
I	5	1.2	1.0		0.4
I	6				1.2
I	7			1.5	0.4
I	8	1.2	1.0		0.4
I	9	1.2	1.0		0.4
I	10				1.2
I	11			1.5	0.4
I	12	1.2	1.0		0.4
I	13				1.2
I	14			1.5	0.4
I	15				1.2
I	16	1.8	1.6		0.4
I	17				1.2
I	18	1.8	1.6		0.4
I - STG CHK	19	1.4	1.2		1.0
STG I TOTALS		12.2	10.4	4.5	13.8
II	20				1.2
II	21			1.5	0.4
II	22				1.2
II	23				1.2
II	24			1.5	0.4
II	25				1.2
II	26	1.8	1.6		0.4
II	27				1.2
II	28				1.2
II	29			1.5	0.4
II	30	2.0	1.8		0.4
II	31				1.2
II	32			1.5	0.4
II	33	2.0	1.8		0.4
II	34				1.2
II	35				1.2
II	36	2.0	1.8		0.4
II	37				1.2
II	38	2.0	1.8		0.4
II - STG CHK	39	2.0	1.8		1.0
STG II TOTALS		11.8	10.6	6.0	16.6
III	40				1.2
III	41				1.2
III	42			2.0	0.4
III	43	3.0	2.8		0.4
III	44			2.0	0.4
III	45	4.0	3.8		0.4
III	46				1.2
III	47	2.0	1.8		0.4
III - STG CHK	48	2.0	1.8		1.0
STG III TOTALS		11.0	10.2	4.0	6.6
COURSE TOTALS		35	31.2	14.5	37.0
COMBINED COURSE TOTALS			45.7		
FAA 141 REQUIREMENTS			35.0 TOTAL		30.0 TOTAL

Note: A cross-country flight of at least 250 Nautical Miles along airways or ATC directed routing with one segment of the flight consisting of at least a straight line distance of 100 Nautical Miles between airports is required for Part 141. The flight must involve an instrument approach at each airport and involve 3 different kinds of approaches with the use of navigation systems. Part 61 requires a similar cross-country flight but does not require the 100 miles distance for one segment of the flight.

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STAGE I

STAGE OBJECTIVE:

During this stage, the student will learn precise airplane attitude control solely by reference to the airplane instruments.

STAGE COMPLETION STANDARDS:

At the completion of this stage the student will demonstrate precise airplane attitude control by instrument reference only. This will include the use of full panel and partial panel instrument reference. Tolerances for all maneuvers will be in accordance with the Instrument Rating Airman Certification Standards.

STAGE I
LESSON 1
DUAL - GROUND
FLIGHT INSTRUMENTS

DATE _____	GRADE (Circle One) S U I
STUDENT NAME _____	STUDENT SIGNATURE _____
INSTRUCTOR # _____	INSTRUCTOR SIGNATURE _____
DISCUSSION: (1.2) _____	
CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____	

LESSON OBJECTIVE:

During this lesson, the instructor will review the pitot-static and gyroscopic instruments with the student.

CONTENT:

Lesson Introduction

_____ Altimeter
 _____ Types of Altitude
 _____ Vertical Speed Indicator
 _____ Airspeed Indicator
 _____ Types of Airspeed
 _____ Pitot-Static Instrument Errors

Lesson Introduction

_____ Attitude Indicator
 _____ Gyro Driven Heading Indicator
 _____ Turn Coordinator / Turn & Bank Indicator
 _____ Slip & Skid Indicator
 _____ Gyroscopic Instrument Errors
 _____ Glass Panel Flight Instrument Displays

COMPLETION STANDARDS:

At the completion of this lesson, the student will have a thorough knowledge of the pitot-static and gyroscopic instruments.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Instrument Flying Handbook - Chapter 5
 Instrument Rating Airman Certification Standards (Refer to Section 1 of the ACS Study Guide, which accompanies Sporty's Instrument Rating Course.)
 Sporty's Instrument Rating Course - Video Vol 1: Segments 1-12

Notes:

**STAGE I
LESSON 2
DUAL - GROUND
BAI**

DATE _____	GRADE (Circle One) S U I
STUDENT NAME _____	STUDENT SIGNATURE _____
INSTRUCTOR # _____	INSTRUCTOR SIGNATURE _____
DISCUSSION: (1.2) _____	
CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____	

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to concepts related to the control of the aircraft using the aircraft instruments.

CONTENT:**Lesson Introduction**

_____ Instrument Scan
_____ Instrument Interpretation
_____ Aircraft Control
_____ Performance Instruments
_____ Control Instruments

Lesson Introduction

_____ Primary Instruments
_____ Supporting Instruments
_____ Direct Indicating Instruments
_____ Indirect Indicating Instruments
_____ Instrument Takeoff

COMPLETION STANDARDS:

At the completion of this lesson, the student will have an understanding of controlling the aircraft by reference to the aircraft instruments.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapters 6 & 7
Instrument Rating Airman Certification Standards
Vol 1: Segments 1-12

Notes:

STAGE I
LESSON 3
DUAL - AIRCRAFT

DATE _____ ACFT/FTD ID _____ GRADE (Circle One) S U I
 STUDENT NAME _____ STUDENT SIGNATURE _____
 INSTRUCTOR # _____ INSTRUCTOR SIGNATURE _____
 FLIGHT TIME: (1.2) _____ DISCUSSION: (0.4) _____
 INSTRUMENT: (1.0) _____ CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to instrument pre-flight procedures, the instrument flight deck check, the instrument scan, and basic attitude instrument (BAI) flying. The instructor will assist the student in filling out the performance desired table with information for the training aircraft.

CONTENT:

Lesson Introduction

_____ Instrument Preflight and Flight Deck Check
 _____ Instrument Scan
 _____ Instrument Takeoff
 _____ Straight-and-Level Flight

Lesson Introduction

_____ Level Standard Rate Turns
 _____ Constant Airspeed Climbs
 _____ Constant Airspeed Descents
 _____ Level-Offs & Trim Use

COMPLETION STANDARDS:

At the completion of this lesson, the student will have a basic knowledge of the instrument preflight procedures, the instrument flight deck check, and the instrument scan.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapters 6 & 7
 Instrument Rating Airman Certification Standards
 Vol 1: Segments 1-4 & 8

Performance Desired	Target IAS or VS	Power Setting	Pitch Attitude (Draw on Horizon Line Below)
Straight-and-Level (Low Cruise)			_____
Straight-and-Level (High Cruise)			_____
Cruise Climb			_____
High Performance Climb (Best Rate - V_y)			_____
Cruise Descent			_____
Low Speed Descent			_____

Notes:

STAGE I
LESSON 4
DUAL - AIRCRAFT

DATE _____ ACFT/FTD ID _____ GRADE (Circle One) S U I
 STUDENT NAME _____ STUDENT SIGNATURE _____
 INSTRUCTOR # _____ INSTRUCTOR SIGNATURE _____
 FLIGHT TIME: (1.2) _____ DISCUSSION: (0.4) _____
 INSTRUMENT: (1.0) _____ CRS TOTALS: (F/I/D/FS) _____ / _____ / _____ / _____

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to constant rate climbs and descents, steep turns, and climbing and descending turns.

CONTENT:

Lesson Introduction

_____ Constant Rate Climbs/Descents
 _____ Climbing/Descending Turns
 _____ Steep Turns

Lesson Review

_____ Instrument Preflight
 _____ Instrument Flight Deck Check
 _____ Straight-and-Level
 _____ Standard Rate Turns
 _____ Constant Airspeed Climbs/Descents
 _____ Level-Offs
 _____ Instrument Takeoff

COMPLETION STANDARDS:

At the completion of this lesson, the student will be able to perform 45° bank steep turns (180° or 360°) by reference to instruments and have a basic knowledge of constant rate climbs/descents, standard rate turns, and climbing and descending turns. The student will maintain or roll out on assigned headings $\pm 15^\circ$, maintain or level off at assigned altitudes $\pm 150'$, maintain airspeeds ± 15 knots, and maintain turning angles of bank $\pm 10^\circ$.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapters 6 & 7
 Instrument Rating Airman Certification Standards
 Vol 1: Segments 3-8

Notes:

STAGE I
LESSON 5
DUAL - AIRCRAFT

DATE _____ ACFT/FTD ID _____ GRADE (Circle One) S U I
 STUDENT NAME _____ STUDENT SIGNATURE _____
 INSTRUCTOR # _____ INSTRUCTOR SIGNATURE _____
 FLIGHT TIME: (1.2) _____ DISCUSSION: (0.4) _____
 INSTRUMENT: (1.0) _____ CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to instrument flight patterns.

Note: Instrument flight patterns are available in the Course Introduction of this book. These patterns are a training tool, not a training goal, as such it is acceptable for the flight instructor to coach the student through the patterns and for the student to have the patterns available for reference during execution.

CONTENT:

Lesson Introduction

_____ Instrument Flight Patterns

COMPLETION STANDARDS:

At the completion of this lesson, the student will have a basic knowledge of instrument flight patterns. The student will maintain or roll out on assigned headings $\pm 15^\circ$, maintain or level off at assigned altitudes $\pm 150'$, maintain airspeeds ± 15 knots, and maintain turning angles of bank $\pm 10^\circ$.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapters 6 & 7
 Instrument Rating Airman Certification Standards
 Vol 1: Segments 3-5 & 8

Notes:

STAGE I
LESSON 6
DUAL - GROUND
MAGNETIC COMPASS

DATE _____	GRADE (Circle One) S U I
STUDENT NAME _____	STUDENT SIGNATURE _____
INSTRUCTOR # _____	INSTRUCTOR SIGNATURE _____
DISCUSSION: (1.2) _____	
CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____	

LESSON OBJECTIVE:

During this lesson, the instructor will review the magnetic compass with the student

CONTENT:

Lesson Introduction

- _____ Magnetic Compass Construction
- _____ Principles of Magnetic Attraction
- _____ Magnetic Dip
- _____ Magnetic Variation
- _____ Magnetic Deviation
- _____ Northerly Turning Error
- _____ Acceleration Error
- _____ Oscillation Error
- _____ Turns to Magnetic Compass Headings

Lesson Introduction

- _____ Emergency Alternatives to Magnetic Compass Turns
- _____ Calibrating Turn Coordinator
- _____ Timed Turns
- _____ Partial Panel Instrument Flight
- _____ Unusual Attitude Recoveries - Full Panel
- _____ Unusual Attitude Recoveries - Partial Panel
- _____ Aeromedical Factors for IFR Flight

COMPLETION STANDARDS:

At the completion of this lesson, the student will have a thorough knowledge of the magnetic compass.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapters 5 & 7
 Instrument Rating Airman Certification Standards
 Vol 1: Segments 3-5, 8, & 11-12

Notes:

STAGE I
LESSON 7
DUAL - FTD / ATD

DATE _____ ACFT/FTD ID _____ GRADE (Circle One) S U I
 STUDENT NAME _____ STUDENT SIGNATURE _____
 INSTRUCTOR # _____ INSTRUCTOR SIGNATURE _____
 FTD/ATD/SIM: (1.5) _____ DISCUSSION: (0.4) _____
 CRS TOTALS: (F/I/D/FS) _____ / _____ / _____ / _____

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to magnetic compass turns, timed turns, partial panel instrument flight, and unusual flight attitude recoveries in an FTD or ATD. Simulation will be used to introduce realistic and unexpected system failures and emergency alternatives to magnetic compass turns.

CONTENT:

Lesson Introduction

_____ Magnetic Compass Turns	_____ Emergency Alternatives to Magnetic
_____ Partial Panel Instrument Flight	_____ Compass Turns
_____ Partial Panel Instrument Flight Scenarios	_____ Unusual Attitude Recoveries - Full Panel
_____ with Realistic Simulated Failures	_____ Unusual Attitude Recoveries - Partial Panel
_____ Timed Turns	

COMPLETION STANDARDS:

At the completion of this lesson, the student will have a basic knowledge of magnetic compass turns, timed turns, partial panel instrument flight, and unusual flight attitude recoveries. The student will maintain or roll out on assigned headings $\pm 15^\circ$, maintain or level off at assigned altitudes $\pm 150'$, maintain airspeeds ± 15 knots, and maintain turning angles of bank $\pm 10^\circ$.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapters 6 & 7
 Instrument Rating Airman Certification Standards
 Vol 1: Segments 2-5, 8, & 11-12
 Vol 7: Segment 10

Notes:

**STAGE I
LESSON 8
DUAL - AIRCRAFT**

DATE _____ ACFT/FTD ID _____ GRADE (Circle One) S U I
STUDENT NAME _____ STUDENT SIGNATURE _____
INSTRUCTOR # _____ INSTRUCTOR SIGNATURE _____
FLIGHT TIME: (1.2) _____ DISCUSSION: (0.4) _____
INSTRUMENT: (1.0) _____ CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to magnetic compass turns, timed turns, and partial panel instrument flight.

CONTENT:**Lesson Introduction**

- _____ Magnetic Compass Turns
- _____ Partial Panel Instrument Flight
- _____ Timed Turns
- _____ Emergency Alternatives to Magnetic Compass Turns

Lesson Review

- _____ Instrument Flight Patterns

COMPLETION STANDARDS:

At the completion of this lesson, the student will have a basic knowledge of magnetic compass turns, timed turns, and partial panel instrument flight. The student will maintain or roll out on assigned headings $\pm 15^\circ$, maintain or level off at assigned altitudes $\pm 150'$, maintain airspeeds ± 15 knots, and maintain turning angles of bank $\pm 10^\circ$.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapters 6 & 7
Instrument Rating Airman Certification Standards
Vol 1: Segments 2-5, 8, & 11-12
Vol 7: Segment 10

Notes:

STAGE I
LESSON 9
DUAL - AIRCRAFT

DATE _____	ACFT/FTD ID _____	GRADE (Circle One) S U I	
STUDENT NAME _____		STUDENT SIGNATURE _____	
INSTRUCTOR # _____		INSTRUCTOR SIGNATURE _____	
FLIGHT TIME: (1.2) _____		DISCUSSION: (0.4) _____	
INSTRUMENT: (1.0) _____		CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____	

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to unusual attitude recoveries.

CONTENT:

Lesson Introduction

_____ Unusual Attitude Recoveries - Full Panel
 _____ Unusual Attitude Recoveries - Partial Panel

Lesson Review

_____ Instrument Flight Patterns
 _____ Partial Panel Instrument Flight

COMPLETION STANDARDS:

At the completion of this lesson, the student will have a basic knowledge of unusual attitude recoveries. During partial panel instrument flight, the student will maintain or roll out on assigned headings $\pm 15^\circ$, maintain or level off at assigned altitudes $\pm 150'$, maintain airspeeds ± 15 knots, and maintain turning angles of bank $\pm 10^\circ$. During full panel instrument flight maneuvers, the student will maintain or roll out on assigned headings $\pm 10^\circ$, maintain or level off at assigned altitudes $\pm 100'$, maintain airspeeds ± 10 knots, and maintain turning angles of bank $\pm 5^\circ$.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapters 6 & 7
 Instrument Rating Airman Certification Standards
 Vol 1: Segments 2-5, 8, & 11-12
 Vol 7: Segment 10

Notes:

STAGE I
LESSON 10
DUAL - GROUND
VOR FUNDAMENTALS

DATE _____	GRADE (Circle One) S U I
STUDENT NAME _____	STUDENT SIGNATURE _____
INSTRUCTOR # _____	INSTRUCTOR SIGNATURE _____
DISCUSSION: (1.2) _____	
CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____	

LESSON OBJECTIVE:

During this lesson, the instructor will discuss VOR fundamentals with the student.

CONTENT:

Lesson Introduction

- _____ VOR Principles of Operation / Transmitter / Receiver / Min Operational Network (MON)
- _____ VOR Receiver Accuracy Check
- _____ VOR Class Designations & Service Volumes
- _____ VOR Errors & Irregularities

Lesson Introduction

- _____ VOR Tuning and Identifying
- _____ VOR Orientation
- _____ VOR Intercepting
- _____ VOR Tracking / Wind Correction Techniques
- _____ VOR Station Passage

COMPLETION STANDARDS:

At the completion of this lesson, the student will have a thorough knowledge of the VOR and its operating principles. The student will also be able to accurately describe the proper techniques for orientation, intercepting, and tracking a VOR radial and also performing a VOR receiver check.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapter 9
 AIM - Chapter 1
 Instrument Rating Airman Certification Standards
 Vol 3: Segments 3, 4, & 8

Notes:

STAGE I
LESSON 11
DUAL - FTD / ATD

DATE _____	ACFT/FTD ID _____	GRADE (Circle One) S U I	
STUDENT NAME _____		STUDENT SIGNATURE _____	
INSTRUCTOR # _____		INSTRUCTOR SIGNATURE _____	
FTD/ATD/SIM: (1.5) _____		DISCUSSION: (0.4) _____	
CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____			

LESSON OBJECTIVE:

During this lesson, the instructor will introduce VOR procedures in an FTD or ATD.

CONTENT:

Lesson Introduction

- _____ VOR Tuning and Identifying
- _____ VOR Orientation, Position, and Station Passage
- _____ VOR Radial Intercepting and Tracking Procedures / Wind Correction Techniques

COMPLETION STANDARDS:

At the completion of this lesson, the student will have a basic knowledge of VOR procedures. The student will maintain or roll out on assigned headings $\pm 10^\circ$, maintain or level off at assigned altitudes $\pm 100'$, maintain airspeeds ± 10 knots, and maintain turning angles of bank $\pm 5^\circ$.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapter 9
 Instrument Rating Airman Certification Standards
 Vol 3: Segments 3, 4, & 8

Notes:

**STAGE I
LESSON 12
DUAL - AIRCRAFT**

DATE _____ ACFT/FTD ID _____ GRADE (Circle One) S U I
STUDENT NAME _____ STUDENT SIGNATURE _____
INSTRUCTOR # _____ INSTRUCTOR SIGNATURE _____
FLIGHT TIME: (1.2) _____ DISCUSSION: (0.4) _____
INSTRUMENT: (1.0) _____ CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to VOR procedures in the training aircraft.

CONTENT:**Lesson Introduction**

- _____ VOR Tuning and Identifying
- _____ VOR Orientation, Position, and Station Passage
- _____ VOR Radial Intercepting and Tracking Procedures / Wind Correction Techniques
- _____ Instrument Flight Patterns while Tracking To or From a VOR on a Specified Radial

COMPLETION STANDARDS:

At the completion of this lesson, the student will have a basic knowledge of VOR procedures. The student will maintain or roll out on assigned headings $\pm 10^\circ$, maintain or level off at assigned altitudes $\pm 100'$, maintain airspeeds ± 10 knots, and maintain turning angles of bank $\pm 5^\circ$. While tracking a specified VOR course, the student will apply proper correction to maintain the course, allowing no more than 3/4 scale deviation on the CDI.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapter 9
Instrument Rating Airman Certification Standards
Vol 1: Review Segments as Needed
Vol 3: Segments 3, 4, & 8

Notes:

STAGE I
LESSON 13
DUAL - GROUND
GPS PRINCIPLES

DATE _____ GRADE (Circle One) S U I
 STUDENT NAME _____ STUDENT SIGNATURE _____
 INSTRUCTOR # _____ INSTRUCTOR SIGNATURE _____
 DISCUSSION: (1.2) _____
 CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____

LESSON OBJECTIVE:

During this lesson, the instructor will discuss the principles of GPS operation.

CONTENT:

Lesson Introduction

_____ GPS Principles of Operation
 _____ Receiver Autonomous Integrity Monitoring (RAIM)
 _____ GPS Errors & Irregularities
 _____ Wide Area Augmentation System (WAAS)
 _____ GPS Modes of Operation
 _____ GPS Use Under IFR
 _____ GPS CDI Scaling (En Route, Terminal, & Approach)
 _____ GPS Waypoints
 _____ GPS Direct-To Operations
 _____ GPS Flight Plan Operations

Lesson Introduction

_____ GPS Nearest Functions
 _____ Substitution of GPS for Other Navigation Radios Under IFR
 _____ Orientation, Position, and Waypoint Passage / Sequencing
 _____ GPS Course Intercepting and Tracking Procedures / Wind Correction Techniques
 _____ Computer Based GPS Procedures
 _____ Simulator (from Appropriate GPS Manufacturer)
 _____ Installed GPS Specific Procedures

COMPLETION STANDARDS:

At the completion of this lesson, the student will have knowledge of GPS operation.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapter 9
 AIM - Chapter 1
 Appropriate Manuals for the Installed GPS
 Instrument Rating Airman Certification Standards
 Vol 2: Segment 14

Notes:

STAGE I
LESSON 14
DUAL - FTD / ATD

DATE _____	ACFT/FTD ID _____	GRADE (Circle One) S U I	
STUDENT NAME _____		STUDENT SIGNATURE _____	
INSTRUCTOR # _____		INSTRUCTOR SIGNATURE _____	
FTD/ATD/SIM: (1.5) _____		DISCUSSION: (0.4) _____	
CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____			

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to GPS procedures in an FTD or ATD. VOR procedures will be reviewed as needed.

CONTENT:

Lesson Introduction

- _____ GPS Direct-To Operations
- _____ GPS Flight Plan Operations
- _____ GPS Nearest Functions
- _____ GPS Orientation, Position, and Waypoint Passage / Sequencing
- _____ GPS Course Intercepting and Tracking Procedures / Wind Correction Techniques
- _____ Installed GPS Specific Procedures

Lesson Review

- _____ VOR Procedures

COMPLETION STANDARDS:

At the completion of this lesson, the student will have a working knowledge of GPS and VOR procedures. The student will maintain headings $\pm 10^\circ$, maintain altitudes $\pm 100'$, maintain airspeeds ± 10 knots, and maintain turning angles of bank $\pm 5^\circ$. While tracking a specified course, the student will apply proper correction to maintain the course, allowing no more than 3/4 scale deviation on the CDI.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapter 9
 Instrument Rating Airman Certification Standards
 Vol 2: Segment 14

Notes:

STAGE I
LESSON 15
DUAL - GROUND
AUTOPILOT PRINCIPLES

DATE _____	GRADE (Circle One) S U I
STUDENT NAME _____	STUDENT SIGNATURE _____
INSTRUCTOR # _____	INSTRUCTOR SIGNATURE _____
DISCUSSION: (1.2) _____	
CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____	

LESSON OBJECTIVE:

During this lesson, the instructor will discuss the principles of autopilot operation.

CONTENT:

Lesson Introduction

- _____ Autopilot Principles of Operation
- _____ Autopilot Errors & Irregularities
- _____ Autopilot Disconnect Options

Lesson Introduction

- _____ Autopilot Limitations
- _____ Installed Autopilot Specific Procedures

COMPLETION STANDARDS:

At the completion of this lesson, the student will have knowledge of autopilot operation.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapters 5 & 7
 Appropriate Manuals for the Installed Autopilot
 Instrument Rating Airman Certification Standards
 Vol 6: Segment 4

Notes:

STAGE I
LESSON 16
DUAL - AIRCRAFT

DATE _____	ACFT/FTD ID _____	GRADE (Circle One) S U I	
STUDENT NAME _____		STUDENT SIGNATURE _____	
INSTRUCTOR # _____		INSTRUCTOR SIGNATURE _____	
FLIGHT TIME: (1.8) _____		DISCUSSION: (0.4) _____	
INSTRUMENT: (1.6) _____		CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____	

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to GPS and autopilot procedures and review VOR procedures with the student in the training aircraft.

CONTENT:
Lesson Introduction

- _____ GPS Direct-To Operations
- _____ GPS Flight Plan Operations
- _____ GPS Orientation, Position, and Waypoint Passage / Sequencing
- _____ GPS Course Intercepting and Tracking Procedures / Wind Correction Techniques
- _____ Autopilot Before Takeoff Checks
- _____ Autopilot Wing Leveler, Heading, & Navigation Modes (as appropriate)
- _____ Autopilot Climb, Descent, & Altitude Hold Modes (as appropriate)
- _____ Autopilot Mode Transitions
- _____ Autopilot Disconnect Options
- _____ Instrument Flight Patterns with the Autopilot

Lesson Review

- _____ VOR Procedures
- _____ Partial Panel Instrument Flight

COMPLETION STANDARDS:

At the completion of this lesson, the student will have a working knowledge of VOR procedures, and have a basic knowledge of GPS and autopilot procedures. The student will maintain headings $\pm 10^\circ$, maintain altitudes $\pm 100'$, maintain airspeeds ± 10 knots, and maintain turning angles of bank $\pm 5^\circ$. While tracking a specified course, the student will apply proper correction to maintain the course, allowing no more than 3/4 scale deviation on the CDI.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapters 5, 7, & 9
 Instrument Rating Airman Certification Standards
 Vol 2: Segment 14
 Vol 6: Segments 1-4

Notes:

STAGE I
LESSON 17
DUAL - GROUND
FAR/AIM

DATE _____	GRADE (Circle One) S U I
STUDENT NAME _____	STUDENT SIGNATURE _____
INSTRUCTOR # _____	INSTRUCTOR SIGNATURE _____
DISCUSSION: (1.2) _____	
CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____	

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to the Federal Aviation Regulations (FARs) contained in 14 CFR and the sections of the Aeronautical Information Manual (AIM) that pertain to instrument flight.

CONTENT:

Lesson Introduction

_____ 14 CFR Regulations - Applicable to IFR
 _____ Flight
 _____ Part 1
 _____ Part 43
 _____ Part 61
 _____ Part 91
 _____ Part 97
 _____ NTSB 830

Lesson Introduction

_____ AIM - Chapters Applicable to IFR Flight
 _____ Chapter 1
 _____ Chapter 2
 _____ Chapter 3
 _____ Chapter 4
 _____ Chapter 5
 _____ Chapter 6
 _____ Chapter 7

COMPLETION STANDARDS:

At the completion of this lesson, the student will have a basic knowledge of the regulations and the sections of the AIM applicable to instrument flight.

ADDITIONAL STUDY:

FAR - 14 CFR Aviation Regulations
 AIM - Chapters 1-7
 Instrument Rating Airman Certification Standards
 Vol 1: Segment 2
 Vol 7: Segments 1-13

Notes:

STAGE I
LESSON 18
DUAL - AIRCRAFT

DATE _____ ACFT/FTD ID _____ GRADE (Circle One) S U I
 STUDENT NAME _____ STUDENT SIGNATURE _____
 INSTRUCTOR # _____ INSTRUCTOR SIGNATURE _____
 FLIGHT TIME: (1.8) _____ DISCUSSION: (0.4) _____
 INSTRUMENT: (1.6) _____ CRS TOTALS: (F/I/D/FS) _____ / _____ / _____ / _____

LESSON OBJECTIVE:

During this lesson, the instructor will review VOR, GPS, and autopilot procedures, steep turns by reference to instruments, instrument flight patterns, and partial panel instrument flight with the student in the training aircraft.

CONTENT:

Lesson Review

_____ Steep Turns
 _____ VOR Procedures
 _____ GPS Procedures
 _____ Autopilot Procedures

Lesson Review

_____ Partial Panel Instrument Flight
 _____ Instrument Flight Patterns with Autopilot
 _____ Instrument Flight Patterns while Tracking
 VOR Radial (without Autopilot)

COMPLETION STANDARDS:

At the completion of this lesson, the student will be able to perform 45° bank steep turns (180° or 360°) by reference to instruments and have a working knowledge of VOR, GPS, and autopilot procedures. The student will maintain headings $\pm 10^\circ$, maintain altitudes $\pm 100'$, maintain airspeeds ± 10 knots, and maintain turning angles of bank $\pm 5^\circ$. While tracking a specified course, the student will apply proper correction to maintain the course, allowing no more than 3/4 scale deviation on the CDI.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapters 5, 7, & 9
 Instrument Rating Airman Certification Standards
 Vol 1: Review Segments as Needed
 Vol 6: Segment 13

Notes:

PRE-STAGE CHECK – TIME SUMMARY

This page is intended to be used by the student's flight instructor to summarize the times accumulated through this course of instruction and determine that the times are sufficient for the stage requirements. The check instructor should verify that these times are acceptable for completion of the stage.

Part 141 Note: The instrument time in an approved FTD or AATD used to meet the minimum requirements of Part 141 may not exceed 40% of the total flight training hours required for the course of instruction. Training time in an approved BATD cannot exceed 25% of the total flight training hours required for the course of instruction. The limit is raised to 50% for an approved full flight simulator or a combination of a simulator, an FTD, an AATD, and a BATD (FTD, AATD & BATD time limits still apply).

DATE _____ STUDENT NAME _____ STUDENT SIGNATURE _____

INSTRUCTOR # _____ INSTRUCTOR SIGNATURE _____

STAGE TOTALS

FLIGHT TIME: _____ (In stage only.)

GROUND/DISCUSSION: _____ (Be sure to include the Ground Lesson times.)

FTD/ATD/SIM: _____ (In stage only.)

INSTRUMENT: _____ (In flight only.)

STAGE I
LESSON 19
STAGE I CHECK

DATE _____	ACFT/FTD ID _____	GRADE (Circle One) S U I	
STUDENT NAME _____		STUDENT SIGNATURE _____	
INSTRUCTOR # _____		INSTRUCTOR SIGNATURE _____	
FLIGHT TIME: (1.4) _____		DISCUSSION: (1.0) _____	
INSTRUMENT: (1.2) _____		CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____	

LESSON OBJECTIVE:

This stage check will determine that the student has accomplished the objectives of Stage I.

CONTENT:**Lesson Review****ORAL**

- _____ Instrument Flight Deck Check
- _____ Aircraft Systems
- _____ Aircraft Flight Instruments
- _____ IFR Required Equipment
- _____ Inspection Requirements for IFR Flight
- _____ Control & Performance Instruments
- _____ Primary & Supporting Instruments
- _____ Magnetic Compass Errors

Lesson Review**FLIGHT**

- _____ Instrument Takeoff
- _____ Steep Turns
- _____ Recovery from Unusual Flight Attitudes
- _____ VOR Procedures
- _____ GPS Procedures
- _____ Autopilot Procedures
- _____ Partial Panel Instrument Flight

COMPLETION STANDARDS:

At the completion of this lesson, the student will have proficiency in basic attitude instrument flight as well as VOR, GPS, and autopilot procedures. The student will maintain headings $\pm 10^\circ$, maintain altitudes $\pm 100'$, maintain airspeeds ± 10 knots, and maintain turning angles of bank $\pm 5^\circ$. While tracking a specified course, the student will apply proper correction to maintain the course, allowing no more than 3/4 scale deviation on the CDI.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapters 5, 7, & 9
 Instrument Rating Airman Certification Standards
 Vol 1: Review Segments as Needed
 Vol 6: Review Segments as Needed

Notes:

STAGE II

STAGE OBJECTIVE:

During this stage, the student will learn and refine basic radio navigation procedures, including the intercepting and tracking of courses through the use of VORs, Localizers, and other navigation systems. The student will also learn to perform instrument approaches.

STAGE COMPLETION STANDARDS:

The student will demonstrate positional awareness and the ability to accurately navigate the aircraft by reference to navigation systems. At the completion of this stage the student will be able to perform local instrument flight operations to the current Instrument Rating Airman Certification Standards.

STAGE II
LESSON 20
DUAL - GROUND
HOLDING & IFR
CLEARANCES

DATE _____	GRADE (Circle One) S U I
STUDENT NAME _____	STUDENT SIGNATURE _____
INSTRUCTOR # _____	INSTRUCTOR SIGNATURE _____
DISCUSSION: (1.2) _____	
CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____	

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to holding and the associated procedures along with IFR clearances.

CONTENT:

Lesson Introduction

- _____ Holding
- _____ Purpose of Holding
- _____ Holding Airspace
- _____ Legs of a Holding Pattern
- _____ Standard vs. Nonstandard Holding Patterns
- _____ Maximum Holding Speeds
- _____ Holding Entry Procedures
- _____ Holding Wind Correction Techniques
- _____ Holding Clearances
- _____ Fix Crossing Check (5T's)
- _____ Timing
- _____ Use of DME while Holding

Lesson Introduction

- _____ Use of GPS while Holding
- _____ Intersection Holding
- _____ Communication Requirements
- _____ Pilot Responsibilities
- _____ ATC Responsibilities
- _____ Elements of an IFR Clearance
- _____ Practical Methods for Copying an IFR Clearance
- _____ Datalink IFR Clearances
- _____ IFR Clearance Compliance, Limits, and Void Times

COMPLETION STANDARDS:

At the completion of this lesson, the student will have an understanding of holding procedures and IFR clearances.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapter 10
 FAA-H-8083-16-IPH - Instrument Procedures Handbook - Chapter 2
 AIM - Chapters 1, 4, & 5
 Instrument Rating Airman Certification Standards
 Vol 2: Segments 1-4, 7-10, & 12
 Vol 3: Segment 10
 Vol 7: Segment 11

Notes:

STAGE II
LESSON 21
DUAL - FTD / ATD

DATE _____	ACFT/FTD ID _____	GRADE (Circle One) S U I	
STUDENT NAME _____		STUDENT SIGNATURE _____	
INSTRUCTOR # _____		INSTRUCTOR SIGNATURE _____	
FTD/ATD/SIM: (1.5) _____		DISCUSSION: (0.4) _____	
CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____			

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to holding procedures, and IFR clearances.

CONTENT:

Lesson Introduction

- _____ Copying / Understanding IFR Clearances
- _____ ATC Communications
- _____ Holding Pattern Entries
- _____ Holding Patterns (VOR/GPS)

Lesson Introduction

- _____ Fix Crossing Check (5T's)
- _____ Timing
- _____ Use of DME while Holding
- _____ Intersection Holding

COMPLETION STANDARDS:

At the completion of this lesson, the student will have a basic understanding of holding procedures and IFR clearances. The student will maintain headings $\pm 10^\circ$, maintain altitudes $\pm 100'$, maintain airspeeds ± 10 knots, and maintain turning angles of bank $\pm 5^\circ$. While tracking a specified course, the student will apply proper correction to maintain the course, allowing no more than 3/4 scale deviation on the CDI.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapter 10
 FAA-H-8083-16-IPH - Chapter 2
 AIM - Chapters 4 & 5
 Instrument Rating Airman Certification Standards
 Vol 3: Segment 10
 Vol 7: Segment 11

Notes:

STAGE II
LESSON 22
DUAL - GROUND
TERMINAL
PROCEDURES

DATE _____	GRADE (Circle One) S U I
STUDENT NAME _____	STUDENT SIGNATURE _____
INSTRUCTOR # _____	INSTRUCTOR SIGNATURE _____
DISCUSSION: (1.2) _____	
CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____	

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to Terminal Procedures Publications.

CONTENT:

Lesson Introduction

- _____ Terminal Procedures Publication
- _____ Aircraft Approach Categories
- _____ Inoperative Components or Visual Aids Table
- _____ Airport Surface Hot Spots
- _____ IFR Take-Off Minimums
- _____ Declared Distance Information
- _____ Published Departure Procedures
- _____ Climb Via SID Clearance
- _____ ATC Communication and Compliance with Departure Instructions
- _____ Situational Awareness during Departure
- _____ Climb & Descent Tables
- _____ IFR Alternate Minimums

Lesson Introduction

- _____ Radar Instrument Approach Minimums
- _____ Pilot Briefing Information Section
- _____ Plan View
- _____ Profile View
- _____ Minimums Section
- _____ Airport Sketch & Airport Diagram
- _____ Missed Approach Section
- _____ Minimum Safe Altitude
- _____ Standard vs Expanded Circling Radii
- _____ Cold Temperature Restricted Airports / Altitude Corrections
- _____ Descent Planning
- _____ Standard Terminal Arrival Procedures
- _____ Descend Via STAR Clearance

COMPLETION STANDARDS:

At the completion of this lesson, the student will have an understanding of terminal procedures.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapters 1, 9, & 10
 FAA-H-8083-16-IPH - Chapters 1-4
 AIM - Chapters 4 & 5
 Instrument Rating Airman Certification Standards
 Vol 2: Segments 5-6
 Vol 3: Segments 1-2

Notes:

STAGE II
LESSON 23
DUAL - GROUND
INSTRUMENT
APPROACHES

DATE _____	GRADE (Circle One) S U I
STUDENT NAME _____	STUDENT SIGNATURE _____
INSTRUCTOR # _____	INSTRUCTOR SIGNATURE _____
DISCUSSION: (1.2) _____	
CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____	

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to various types of instrument approaches without a glideslope.

CONTENT:

Lesson Introduction

- _____ Nonprecision Instrument Approaches
- _____ Approach Briefing
- _____ Missed Approach Procedures
- _____ Visibility Minimums
- _____ Timed Approaches
- _____ Radar Approaches
- _____ Visual Approaches

Lesson Introduction

- _____ Contact Approaches
- _____ Charted Visual Flight Procedures
- _____ Visual Descent Point
- _____ Circling Approaches
- _____ Vectored Approaches
- _____ Terminal Arrival Area (TAA) Approaches
- _____ Lighting Systems

COMPLETION STANDARDS:

At the completion of this lesson, the student will have an understanding of nonprecision approaches.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapters 1, 9, & 10
 FAA-H-8083-16-IPH - Chapter 4
 AIM - Chapter 5
 Vol 3: Segments 8-14

Notes:

STAGE II
LESSON 24
DUAL - FTD / ATD

DATE _____	ACFT/FTD ID _____	GRADE (Circle One) S U I	
STUDENT NAME _____		STUDENT SIGNATURE _____	
INSTRUCTOR # _____		INSTRUCTOR SIGNATURE _____	
FTD/ATD/SIM: (1.5) _____		DISCUSSION: (0.4) _____	
CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____			

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to nonprecision approaches and missed approach procedures. Holding procedures will be reviewed.

CONTENT:

Lesson Introduction

- _____ Departure Vectors to Filed Route
- _____ Climb Via SID Operations
- _____ IFR Navigation
- _____ Approach Setup and Briefing
- _____ Descend Via STAR Operations
- _____ VOR Approach
- _____ GPS Approach (LNAV)
- _____ Missed Approach Procedures
- _____ Landing from an Approach

Lesson Review

- _____ Copying / Understanding IFR Clearances
- _____ ATC Communications
- _____ Holding Pattern Entries
- _____ Holding Patterns (VOR/GPS)

COMPLETION STANDARDS:

At the completion of this lesson, the student will have a basic understanding of holding procedures, nonprecision approach procedures, and missed approach procedures. The student will maintain headings $\pm 10^\circ$, maintain altitudes, other than flight at MDA, $\pm 100'$, maintain airspeeds ± 10 knots, and maintain turning angles of bank $\pm 5^\circ$. During nonprecision approaches the student will maintain the MDA, when reached, +200/-0 feet to the MAP and allow no more than a three-quarter-scale deflection of the CDI while on the final approach segment.

ADDITIONAL STUDY:

- FAA-H-8083-15-IFH - Chapters 9 & 10
- FAA-H-8083-16-IPH - Chapters 1-4
- AIM - Chapters 4 & 5
- Vol 2: Segments 5 & 6
- Vol 3: Segments 8-14
- Vol 4: Segments 8-11

Notes:

STAGE II
LESSON 25
DUAL - GROUND
ATC SYSTEM

DATE _____ GRADE (Circle One) S U I
 STUDENT NAME _____ STUDENT SIGNATURE _____
 INSTRUCTOR # _____ INSTRUCTOR SIGNATURE _____
 DISCUSSION: (1.2) _____
 CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to the structure of the Air Traffic Control (ATC) system and its applicability to IFR flight.

CONTENT:

Lesson Introduction

_____ Clearance Delivery
 _____ Ground Control
 _____ Tower Control (Local Control)
 _____ Terminal Approach Control Facilities
 _____ Approach Control
 _____ Departure Control
 _____ Final Controller

Lesson Introduction

_____ Air Route Traffic Control Centers (ARTCC)
 _____ Tower En Route Control (TEC)
 _____ Federal Airways
 _____ Uncontrolled Airspace
 _____ IFR Flight Planning and Filing Procedures
 _____ Closing an IFR Flight Plan

COMPLETION STANDARDS:

At the completion of this lesson, the student will have an understanding of the ATC structure and how it is structured to provide safe and efficient flow of IFR traffic.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapters 2 & 10
 FAA-H-8083-16-IPH - Chapters 1-4
 AIM - Chapters 4 & 5
 Instrument Rating Airman Certification Standards
 Vol 2: Segments 1-12
 Vol 7: Segment 11

Notes:

STAGE II
LESSON 26
DUAL - AIRCRAFT

DATE _____	ACFT/FTD ID _____	GRADE (Circle One) S U I	
STUDENT NAME _____		STUDENT SIGNATURE _____	
INSTRUCTOR # _____		INSTRUCTOR SIGNATURE _____	
FLIGHT TIME: (1.8) _____		DISCUSSION: (0.4) _____	
INSTRUMENT: (1.6) _____		CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____	

LESSON OBJECTIVE:

During this lesson, the instructor will review IFR navigation, ATC communication procedures, obtaining IFR clearances, performing an approach brief, and executing nonprecision instrument approaches with the student in the training aircraft.

CONTENT:**Lesson Introduction**

- _____ Filing an IFR Flight Plan
- _____ Copying / Understanding IFR Clearances
- _____ ATC Communications
- _____ Departure Vectors to Filed Route or Pilot
- _____ Nav to Filed Route
- _____ Climb Via SID Operations
- _____ IFR Navigation

Lesson Introduction

- _____ Holding Procedures
- _____ Descend Via STAR Operations
- _____ Approach Setup and Briefing
- _____ VOR Approach
- _____ GPS Approach (LNAV)
- _____ Missed Approach Procedures

COMPLETION STANDARDS:

At the completion of this lesson, the student will be able to navigate, hold en route, and perform VOR and GPS approaches with minimal instructor assistance. The student should also be able to perform ATC communications with minimal instructor assistance. The student will maintain headings $\pm 10^\circ$, maintain altitudes, other than flight at MDA or during the final approach segment of a precision approach, $\pm 100'$, maintain airspeeds ± 10 knots, and maintain turning angles of bank $\pm 5^\circ$. During nonprecision approaches the student will maintain the MDA, when reached, +200/-0 feet to the MAP and allow no more than a three-quarter-scale deflection of the CDI while on the final approach segment.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapters 2, 9, & 10
 FAA-H-8083-16-IPH - Chapters 1-4
 AIM - Chapters 4 & 5
 Vol 2: Segments 5 & 6
 Vol 3: Segments 8-14

Notes:

STAGE II
LESSON 27
DUAL - GROUND
PILOT / CONTROLLER
RESPONSIBILITIES

DATE _____	GRADE (Circle One) S U I
STUDENT NAME _____	STUDENT SIGNATURE _____
INSTRUCTOR # _____	INSTRUCTOR SIGNATURE _____
DISCUSSION: (1.2) _____	
CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____	

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to the responsibilities of the Pilot and the Air Traffic Controller.

CONTENT:

Lesson Introduction

_____ Air Traffic Clearance
 _____ Contact Approach
 _____ Visual Approach
 _____ Instrument Approach
 _____ Missed Approach
 _____ Radar Vectors
 _____ Safety Alerts
 _____ Speed Adjustments
 _____ Visual Separation
 _____ Instrument Departures

Lesson Introduction

_____ Wake Turbulence Separations
 _____ Compulsory Reporting Points
 _____ Loss of Communications
 _____ Land and Hold Short Operations
 _____ Practice Instrument Approaches
 _____ IFR Separation Standards
 _____ See and Avoid
 _____ Traffic Advisories
 _____ VFR-On-Top
 _____ Minimum Fuel Advisory

COMPLETION STANDARDS:

At the completion of this lesson, the student will have an understanding of pilot and controller responsibilities.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapters 2 & 10
 FAA-H-8083-16-IPH - Chapters 1-4
 AIM - Chapters 4 & 5
 Vol 2: Segments 1-12
 Vol 3: Segments 7 & 9

Notes:

STAGE II
LESSON 28
DUAL - GROUND
INSTRUMENT
LANDING SYSTEM

DATE _____	GRADE (Circle One) S U I
STUDENT NAME _____	STUDENT SIGNATURE _____
INSTRUCTOR # _____	INSTRUCTOR SIGNATURE _____
DISCUSSION: (1.2) _____	
CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____	

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the instrument landing system and associated approaches to the student. WAAS approaches will also be covered.

CONTENT:

Lesson Introduction

- _____ Localizer Principles of Operation
- _____ Glideslope Principles of Operation
- _____ Marker Beacons
- _____ ILS Receiving Equipment
- _____ ILS Categories
- _____ ILS Errors & Irregularities

Lesson Introduction

- _____ Localizer and Glideslope Critical Areas
- _____ Simplified Directional Facility
- _____ Localizer-Type Directional Aid
- _____ Precision Instrument Approaches
- _____ Back Course Approaches
- _____ APV Instrument Approaches

COMPLETION STANDARDS:

At the completion of this lesson, the student will have a thorough knowledge of the ILS, LDA, SDF, and WAAS systems and their operating principles.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapter 9
 FAA-H-8083-16-IPH - Chapter 4
 AIM - Chapter 5
 Vol 3: Segments 1-5
 Vol 4: Segments 8-9

Notes:

STAGE II
LESSON 29
DUAL - FTD / ATD

DATE _____	ACFT/FTD ID _____	GRADE (Circle One) S U I	
STUDENT NAME _____		STUDENT SIGNATURE _____	
INSTRUCTOR # _____		INSTRUCTOR SIGNATURE _____	
FTD/ATD/SIM: (1.5) _____		DISCUSSION: (0.4) _____	
CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____			

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to ILS and back course approach procedures.

CONTENT:

Lesson Introduction

- _____ ILS Approach (Full & Vectored)
- _____ Landing from an ILS Approach
- _____ Back Course Approach

Lesson Review

- _____ Missed Approach Procedures

COMPLETION STANDARDS:

At the completion of this lesson, the student will have a basic understanding of ILS and back course approach procedures. The student will maintain headings $\pm 10^\circ$, maintain altitudes, other than during the final approach segment, $\pm 100'$, maintain airspeeds ± 10 knots, and maintain turning angles of bank $\pm 5^\circ$. During precision approaches the student will avoid descents below the DA/DH before initiating a missed approach procedure or transitioning to a normal landing approach and allow no more than a three-quarter-scale deflection of the localizer or glideslope while on the final approach segment.

ADDITIONAL STUDY:

- FAA-H-8083-15-IFH - Chapter 9
- FAA-H-8083-16-IPH - Chapter 4
- AIM - Chapter 5
- Vol 3: Segments 1-5
- Vol 4: Segments 8-9

Notes:

STAGE II
LESSON 30
DUAL - AIRCRAFT

DATE _____	ACFT/FTD ID _____	GRADE (Circle One) S U I	
STUDENT NAME _____		STUDENT SIGNATURE _____	
INSTRUCTOR # _____		INSTRUCTOR SIGNATURE _____	
FLIGHT TIME: (2.0) _____		DISCUSSION: (0.4) _____	
INSTRUMENT: (1.8) _____		CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____	

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to ILS, back course, and APV approach procedures in the training aircraft. Holding, VOR and GPS approaches, and missed approach procedures will be reviewed.

CONTENT:

Lesson Introduction

- _____ ILS Approach
- _____ Back Course Approach
- _____ APV Approach (LPV or LNAV/VNAV)

Lesson Review

- _____ Filing an IFR Flight Plan
- _____ Copying / Understanding IFR Clearances
- _____ ATC Communications
- _____ IFR Navigation
- _____ Holding Procedures
- _____ Approach Setup and Brief
- _____ VOR Approach
- _____ GPS Approach (LNAV)
- _____ Missed Approach Procedures

COMPLETION STANDARDS:

At the completion of this lesson, the student will be able to navigate, hold en route, and perform ILS, VOR, and GPS approaches with minimal instructor assistance. The student should also be able to perform ATC communications with minimal instructor assistance. The student will maintain headings $\pm 10^\circ$, maintain altitudes, other than flight at MDA or during the final approach segment of a precision approach, $\pm 100'$, maintain airspeeds ± 10 knots, and maintain turning angles of bank $\pm 5^\circ$. During nonprecision approaches the student will maintain the MDA, when reached, $+200/-0$ feet to the MAP and allow no more than a three-quarter-scale deflection of the CDI while on the final approach segment. During precision and APV approaches the student will avoid descents below the DA/DH before initiating a missed approach procedure or transitioning to a normal landing approach and allow no more than a three-quarter-scale deflection of the CDI or glideslope while on the final approach segment.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapters 2, 9, & 10
 FAA-H-8083-16-IPH - Chapter 4
 AIM - Chapter 5

Vol 3: Segments 3-14
 Vol 4: Segments 8-9

Notes:

STAGE II
LESSON 31
DUAL - GROUND
AUTOPILOT
APPROACHES & DME

LESSON OBJECTIVE:

DATE _____	GRADE (Circle One) S U I
STUDENT NAME _____	STUDENT SIGNATURE _____
INSTRUCTOR # _____	INSTRUCTOR SIGNATURE _____
DISCUSSION: (1.2) _____	
CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____	

During this lesson, the instructor will introduce the student to distance measuring equipment, the use of the autopilot for approaches, and instrument approaches with loss of primary flight instrument indicators (partial panel).

CONTENT:

Lesson Introduction

- _____ Autopilot Approach Operations & Limitations
- _____ Nonprecision Approaches with an Autopilot
- _____ APV Approaches with an Autopilot
- _____ Precision Approaches with an Autopilot
- _____ Back Course Approaches with an Autopilot
- _____ Missed Approach Procedures with an Autopilot
- _____ Holding Procedures with an Autopilot

Lesson Introduction

- _____ DME Principles of Operation
- _____ DME Errors & Irregularities
- _____ DME Arc Interception
- _____ DME Arc Tracking
- _____ Use of GPS as Substitute for DME
- _____ Instrument Approaches with Loss of Primary Flight Instrument Indicators (Partial Panel)

COMPLETION STANDARDS:

At the completion of this lesson, the student will have an understanding of distance measuring equipment, the use of the autopilot for approaches, and partial panel approaches.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapters 5 & 9
 FAA-H-8083-16-IPH - Chapter 4
 AIM - Chapters 1 & 5
 Vol 3: Segments 10-14
 Vol 6: Segments 2-4

Notes:

STAGE II
LESSON 32
DUAL - FTD / ATD

DATE _____	ACFT/FTD ID _____	GRADE (Circle One) S U I	
STUDENT NAME _____		STUDENT SIGNATURE _____	
INSTRUCTOR # _____		INSTRUCTOR SIGNATURE _____	
FTD/ATD/SIM: (1.5) _____		DISCUSSION: (0.4) _____	
CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____			

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to partial panel approaches, DME arcs, and circle to land procedures.

CONTENT:

Lesson Introduction

- _____ Nonprecision Approach with Loss of Primary Flight Instrument Indicators (Partial Panel)
- _____ Precision Approach with Loss of Primary Flight Instrument Indicators (Partial Panel)

Lesson Introduction

- _____ DME Arc
- _____ Circle to Land Procedures

COMPLETION STANDARDS:

At the completion of this lesson, the student will be able to perform partial panel VOR approaches, and DME arcs. The student will maintain headings $\pm 10^\circ$, maintain altitudes, other than flight at MDA, $\pm 100'$, maintain airspeeds ± 10 knots, and maintain turning angles of bank $\pm 5^\circ$. During nonprecision approaches the student will maintain the MDA, when reached, +200/-0 feet to the MAP and allow no more than a three-quarter-scale deflection of the CDI while on the final approach segment.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapter 9
 FAA-H-8083-16-IPH - Chapter 4
 AIM - Chapter 5
 Vol 3: Review Segments as Needed

Notes:

STAGE II
LESSON 33
DUAL - AIRCRAFT

DATE _____ ACFT/FTD ID _____ GRADE (Circle One) S U I
 STUDENT NAME _____ STUDENT SIGNATURE _____
 INSTRUCTOR # _____ INSTRUCTOR SIGNATURE _____
 FLIGHT TIME: (2.0) _____ DISCUSSION: (0.4) _____
 INSTRUMENT: (1.8) _____ CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____

LESSON OBJECTIVE:

During this lesson, the instructor will review partial panel approaches, DME arcs, nonprecision approaches, precision approaches, and circle to land procedures with the student.

CONTENT:

Lesson Introduction

_____ Nonprecision Approach with Loss of
 Primary Flight Instrument Indicators (Partial
 Panel)
 _____ APV Approach with Loss of Primary Flight
 Instrument Indicators (Partial Panel)
 _____ Precision Approach with Loss of Primary
 Flight Instrument Indicators (Partial Panel)
 _____ DME Arcs
 _____ Circle to Land Procedures

Lesson Review

_____ Nonprecision Approaches - Full & Vectored
 (Full Panel)
 _____ APV Approaches - Full & Vectored (Full
 Panel)
 _____ Precision Approaches - Full & Vectored
 (Full Panel)

COMPLETION STANDARDS:

At the completion of this lesson, the student will be able to perform nonprecision approaches, precision approaches, circling procedures, and DME arcs with minimal instructor assistance. The student will maintain headings $\pm 10^\circ$, maintain altitudes, other than flight at MDA or during the final approach segment of a precision approach, $\pm 100'$, maintain airspeeds ± 10 knots, and maintain turning angles of bank $\pm 5^\circ$. During nonprecision approaches the student will maintain the MDA, when reached, $+100/-0$ feet to the MAP and allow no more than a three-quarter-scale deflection of the CDI while on the final approach segment. During precision and APV approaches the student will avoid descents below the DA/DH before initiating a missed approach procedure or transitioning to a normal landing approach and allow no more than a three-quarter-scale deflection of the CDI or glideslope while on the final approach segment.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapter 9
 FAA-H-8083-16-IPH - Chapter 4
 AIM - Chapter 5
 Vol 3: Review Segments as Needed

Notes:

STAGE II
LESSON 34
DUAL - GROUND
ICING

DATE _____	GRADE (Circle One) S U I
STUDENT NAME _____	STUDENT SIGNATURE _____
INSTRUCTOR # _____	INSTRUCTOR SIGNATURE _____
DISCUSSION: (1.2) _____	
CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____	

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to weather conditions associated with icing.

CONTENT:

Lesson Introduction

- _____ Required Conditions for Ice Formation
- _____ Formation of Frost
- _____ Formation of Clear Ice
- _____ Formation of Rime Ice
- _____ Formation of Mixed Ice
- _____ Icing Intensities
- _____ PIREPs Specific to Icing

Lesson Introduction

- _____ AIRMETs Specific to Icing
- _____ SIGMETs Specific to Icing
- _____ Winds / Temps Aloft Forecast
- _____ Deicing and Anti-Icing Equipment
- _____ Icing Avoidance Strategies
- _____ Inadvertent Icing Encounter Strategies
- _____ Flight in Known Icing Conditions

COMPLETION STANDARDS:

At the completion of this lesson, the student will have an understanding of icing associated with IFR flight.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapters 4 & 11
 FAA-H-8083-25-PHAK - Pilot's Handbook of Aeronautical Knowledge - Chapters 7, 12, & 13
 AIM - Chapter 7
 AC 00-6-AvWx - Aviation Weather - Chapter 18
 AC 00-45-AvWxSvc - Aviation Weather Services - Chapters 3 & 5
 Vol 5: Segments 1-4

Notes:

STAGE II
LESSON 35
DUAL - GROUND
THUNDERSTORMS

DATE _____	GRADE (Circle One) S U I
STUDENT NAME _____	STUDENT SIGNATURE _____
INSTRUCTOR # _____	INSTRUCTOR SIGNATURE _____
DISCUSSION: (1.2) _____	
CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____	

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to thunderstorms and their associated phenomena.

CONTENT:

Lesson Introduction

- _____ Conditions Required for Thunderstorms
- _____ Thunderstorm Lifecycle
- _____ Air Mass Thunderstorms
- _____ Steady State Thunderstorms
- _____ Squall Line Thunderstorms
- _____ Embedded Thunderstorms
- _____ Frontal Thunderstorms

Lesson Introduction

- _____ Hazards Associated with Thunderstorms
- _____ Forecasts Associated with Thunderstorms
- _____ Radar Summary Chart
- _____ Convective SIGMETs
- _____ Thunderstorm Avoidance Strategies
- _____ Inadvertent Thunderstorm Encounter Strategies

COMPLETION STANDARDS:

At the completion of this lesson, the student will have an understanding of thunderstorms and their associated phenomena.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapters 10 & 11
 FAA-H-8083-25-PHAK - Chapters 12 & 13
 AIM - Chapter 7
 AC 00-6-AvWx - Chapter 19
 AC 00-45-AvWxSvc - Chapters 3 & 5
 Vol 5: Segments 5-13

Notes:

STAGE II
LESSON 36
DUAL - AIRCRAFT

DATE _____	ACFT/FTD ID _____	GRADE (Circle One) S U I	
STUDENT NAME _____		STUDENT SIGNATURE _____	
INSTRUCTOR # _____		INSTRUCTOR SIGNATURE _____	
FLIGHT TIME: (2.0) _____		DISCUSSION: (0.4) _____	
INSTRUMENT: (1.8) _____		CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____	

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to approaches using the autopilot and review nonprecision, APV, and precision approaches, holding, and missed approach procedures with the student.

CONTENT:**Lesson Introduction**

- _____ Nonprecision Approach with an Autopilot
- _____ APV Approach with an Autopilot
- _____ Precision Approach with an Autopilot
- _____ Back Course Approach with an Autopilot
- _____ Missed Approach Procedures with an Autopilot

Lesson Review

- _____ Nonprecision Approach - Full & Vectored (Full & Partial Panel)
- _____ APV Approach - Full & Vectored (Full & Partial Panel)
- _____ Precision Approach - Full & Vectored (Full & Partial Panel)
- _____ Back Course Approach
- _____ Holding Procedures
- _____ ATC Procedures
- _____ Missed Approach Procedures
- _____ Circle To Land Procedures

COMPLETION STANDARDS:

At the completion of this lesson, the student will be able to perform instrument approaches with minimal instructor assistance. The student will maintain headings $\pm 10^\circ$, maintain altitudes, other than flight at MDA or during the final approach segment of a precision approach, $\pm 100'$, maintain airspeeds ± 10 knots, and maintain turning angles of bank $\pm 5^\circ$. During nonprecision approaches the student will maintain the MDA, when reached, $+100/-0$ feet to the MAP and allow no more than a three-quarter-scale deflection of the CDI while on the final approach segment. During precision and APV approaches the student will avoid descents below the DA/DH before initiating a missed approach procedure or transitioning to a normal landing approach and allow no more than a three-quarter-scale deflection of the CDI or glideslope while on the final approach segment.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapter 9
 FAA-H-8083-16-IPH - Chapter 4
 AIM - Chapter 5

Vol 3: Review Segments as Needed
 Vol 6: Segments 2-4

Notes:

STAGE II
LESSON 37
DUAL - GROUND
FORECASTS & REPORTS

DATE _____	GRADE (Circle One) S U I
STUDENT NAME _____	STUDENT SIGNATURE _____
INSTRUCTOR # _____	INSTRUCTOR SIGNATURE _____
DISCUSSION: (1.2) _____	
CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____	

LESSON OBJECTIVE:

During this lesson, the instructor will review weather forecasts and reports with the student.

CONTENT:

Lesson Introduction

- _____ Graphical Forecasts for Aviation (GFA)
- _____ Terminal Aerodrome Forecasts (TAF)
- _____ METARs
- _____ Winds / Temperatures Aloft (FB)
- _____ Pilot Reports
- _____ Radar Summary Chart
- _____ Surface Analysis Chart

Lesson Introduction

- _____ Freezing Level Chart
- _____ Upper Level Charts
- _____ Significant Weather Prognostic Charts
- _____ SIGMETs, AIRMETs, & Convective SIGMETs
- _____ Recognition of Critical Weather Situations
- _____ Windshear Avoidance

COMPLETION STANDARDS:

At the completion of this lesson, the student will have a thorough understanding of weather forecasts and reports.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapter 10
 AIM - Chapter 7
 AC 00-6-AvWx - Chapter 15
 AC 00-45-AvWxSvc - Chapters 3-5
 Vol 7: Segments 1-3

Notes:

STAGE II
LESSON 38
DUAL - AIRCRAFT

DATE _____	ACFT/FTD ID _____	GRADE (Circle One) S U I	
STUDENT NAME _____		STUDENT SIGNATURE _____	
INSTRUCTOR # _____		INSTRUCTOR SIGNATURE _____	
FLIGHT TIME: (2.0) _____		DISCUSSION: (0.4) _____	
INSTRUMENT: (1.8) _____		CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____	

LESSON OBJECTIVE:

During this lesson, the instructor will review approaches using the autopilot, nonprecision approaches, APV approaches, precision approaches, holding, and missed approach procedures with the student.

CONTENT:

Lesson Review

- _____ Nonprecision Approach with an Autopilot
- _____ Precision Approach with an Autopilot
- _____ Missed Approach Procedures with an Autopilot
- _____ Nonprecision Approach - Full & Vectored (Full & Partial Panel)
- _____ APV Approach - Full & Vectored (Full & Partial Panel)

Lesson Review

- _____ Precision Approach - Full & Vectored (Full & Partial Panel)
- _____ Back Course Approach
- _____ Holding Procedures
- _____ ATC Communications
- _____ Missed Approach Procedures
- _____ Circle to Land Procedures

COMPLETION STANDARDS:

At the completion of this lesson, the student will be able to perform instrument approaches with minimal instructor assistance. The student will maintain headings $\pm 10^\circ$, maintain altitudes, other than flight at MDA or during the final approach segment of a precision approach, $\pm 100'$, maintain airspeeds ± 10 knots, and maintain turning angles of bank $\pm 5^\circ$. During nonprecision approaches the student will maintain the MDA, when reached, $+100/-0$ feet to the MAP and allow no more than a three-quarter-scale deflection of the CDI while on the final approach segment. During precision and APV approaches the student will avoid descents below the DA/DH before initiating a missed approach procedure or transitioning to a normal landing approach and allow no more than a three-quarter-scale deflection of the CDI or glideslope while on the final approach segment.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapter 9
 FAA-H-8083-16-IPH - Chapter 4
 AIM - Chapter 5
 Vol 3: Review Segments as Needed
 Vol 4: Segments 8-13

Notes:

PRE-STAGE CHECK – TIME SUMMARY

This page is intended to be used by the student's flight instructor to summarize the times accumulated through this course of instruction and determine that the times are sufficient for the stage requirements. The check instructor should verify that these times are acceptable for completion of the stage.

Part 141 Note: The instrument time in an approved FTD or AATD used to meet the minimum requirements of Part 141 may not exceed 40% of the total flight training hours required for the course of instruction. Training time in an approved BATD cannot exceed 25% of the total flight training hours required for the course of instruction. The limit is raised to 50% for an approved full flight simulator or a combination of a simulator, an FTD, an AATD, and a BATD (FTD, AATD & BATD time limits still apply).

DATE _____ STUDENT NAME _____ STUDENT SIGNATURE _____

INSTRUCTOR # _____ INSTRUCTOR SIGNATURE _____

STAGE TOTALS

FLIGHT TIME: _____ (In stage only.)

GROUND/DISCUSSION: _____ (Be sure to include the Ground Lesson times.)

FTD/ATD/SIM: _____ (In stage only.)

INSTRUMENT: _____ (In flight only.)

COURSE TOTALS

FLIGHT TIME: _____ (In course only.)

GROUND/DISCUSSION: _____ (Be sure to include the Ground Lesson times.)

FTD/ATD/SIM: _____ (In course only.)

INSTRUMENT: _____ (In flight only.)

STAGE II
LESSON 39
STAGE II CHECK

DATE _____	ACFT/FTD ID _____	GRADE (Circle One) S U I	
STUDENT NAME _____		STUDENT SIGNATURE _____	
INSTRUCTOR # _____		INSTRUCTOR SIGNATURE _____	
FLIGHT TIME: (2.0) _____		DISCUSSION: (1.0) _____	
INSTRUMENT: (1.8) _____		CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____	

LESSON OBJECTIVE:

During this lesson, the student will complete a stage check covering approaches and holding procedures.

CONTENT:**Lesson Review****ORAL**

- _____ Weather Information
- _____ Holding Procedures
- _____ Terminal Procedures Publication
- _____ Approach Procedures
- _____ Published Departure Procedures
- _____ Standard Terminal Arrival Procedures
- _____ Instrument Approaches with Loss of Primary Flight Instrument Indicators (Partial Panel)

Lesson Review**FLIGHT**

- _____ ATC Clearances
- _____ Clearance Compliance
- _____ Holding Procedures
- _____ Nonprecision Approach
- _____ APV Approach
- _____ Precision Approach
- _____ Missed Approach Procedures
- _____ Nonprecision Approach with Loss of Primary Flight Instrument Indicators
- _____ APV Approach with Loss of Primary Flight Instrument Indicators
- _____ Precision Approach with Loss of Primary Flight Instrument Indicators
- _____ Nonprecision Approach with Autopilot
- _____ Missed Approach Procedures with an Autopilot
- _____ Circling Approach
- _____ Landing from Straight-In / Circling Approach

COMPLETION STANDARDS:

The student shall perform all maneuvers to the standards established by the Instrument Rating Airman Certification Standards. The student should demonstrate at least the number of approaches indicated in the ACS. Additional approaches within the capability of the aircraft are desirable.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapters 2 & 9
 FAA-H-8083-16-IPH - Chapters 1-4
 AIM - Chapters 1, 4, 5, & 7

Instrument Rating Airman Certification Standards
 Vol 1-7: Review Segments as Needed

Notes:

STAGE III

STAGE OBJECTIVE:

During this stage, the student will plan and perform IFR cross-country flights while refining the basic IFR skills required to operate in the instrument environment.

STAGE COMPLETION STANDARDS:

The student will demonstrate positional awareness and the ability to accurately navigate the aircraft by reference to navigation systems. At the completion of this stage the student will be able to perform instrument flight operations to the current Instrument Rating Airman Certification Standards.

STAGE III
LESSON 40
DUAL - GROUND
CHART REVIEW &
EN ROUTE PROCEDURES

DATE _____	GRADE (Circle One) S U I
STUDENT NAME _____	STUDENT SIGNATURE _____
INSTRUCTOR # _____	INSTRUCTOR SIGNATURE _____
DISCUSSION: (1.2) _____	
CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____	

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to en route IFR publications and procedures.

CONTENT:

Lesson Introduction

- _____ Chart Supplements (formerly A/FD)
- _____ VFR / IFR Low Altitude Planning Chart
- _____ En Route Low Altitude IFR Chart
- _____ En Route Chart Symbolology
- _____ Air Traffic Service (ATS) Route System
- _____ Intersections and Changeover Points

Lesson Introduction

- _____ ATS Route Course Changes
- _____ Cockpit Management
- _____ Position Reporting Requirements
- _____ Additional Reporting Requirements
- _____ Loss of Communications Procedures (IMC and VMC)

COMPLETION STANDARDS:

At the completion of this lesson, the student will have an understanding of IFR navigation charts.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapters 1 & 10
 FAA-H-8083-16-IPH - Chapters 1-3
 AIM - Chapters 1, 4, & 5
 Vol 4: Segments 1-13

Notes:

STAGE III
LESSON 41
DUAL - GROUND
IFR CROSS-COUNTRY
PLANNING

DATE _____	GRADE (Circle One) S U I
STUDENT NAME _____	STUDENT SIGNATURE _____
INSTRUCTOR # _____	INSTRUCTOR SIGNATURE _____
DISCUSSION: (1.2) _____	
CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____	

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to IFR cross-country flight planning.

CONTENT:

Lesson Introduction

- _____ Charts & Publications
- _____ Weather Briefing
- _____ NOTAMs
- _____ Determination of an Alternate
- _____ Preferred IFR Routes
- _____ DPs / STARs
- _____ Takeoff Minimums

Lesson Introduction

- _____ Cruising Altitudes
- _____ Aircraft Performance
- _____ Flight Plan Filing
- _____ Cockpit Management
- _____ Aeronautical Decision Making & Judgment
- _____ Crew Resource Management

COMPLETION STANDARDS:

At the completion of this lesson, the student will be able to plan an IFR cross-country flight.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapters 1 & 10
 FAA-H-8083-16-IPH - Chapters 1-3
 AIM - Chapters 1, 4, & 5
 Vol 2: Segments 5-6
 Vol 4: Segments 1-5
 Vol 7: Segments 6-13

Notes:

STAGE III
LESSON 42
DUAL - FTD / ATD
CROSS-COUNTRY

DATE _____	ACFT/FTD ID _____	GRADE (Circle One) S U I	
STUDENT NAME _____		STUDENT SIGNATURE _____	
INSTRUCTOR # _____		INSTRUCTOR SIGNATURE _____	
FTD/ATD/SIM: (2.0) _____		DISCUSSION: (0.4) _____	
CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____			

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to IFR cross-country flight planning and review executing instrument approaches.

CONTENT:

Lesson Introduction

- _____ En Route Navigation Including Lost Communications Procedures
- _____ Dealing with En Route & Terminal Weather - Planning an Alternate
- _____ Preparation of an IFR Navigation Log
- _____ Planning Departures and Arrivals
- _____ Power / Fuel Management

Lesson Review

- _____ Copying / Understanding IFR Clearances
- _____ Nonprecision Approach
- _____ Precision Approach
- _____ Missed Approach Procedures
- _____ Circle to Land Procedures

COMPLETION STANDARDS:

At the completion of this lesson, the student will be able to plan an IFR cross-country flight and complete an IFR navigation log. The student will maintain headings $\pm 5^\circ$ en route/ $\pm 10^\circ$ on approaches, maintain altitudes, other than flight at MDA or during the final approach segment of a precision approach, $\pm 100'$, maintain airspeeds ± 10 knots, and maintain turning angles of bank $\pm 5^\circ$. During nonprecision approaches the student will maintain the MDA, when reached, $+100/-0$ feet to the MAP and allow no more than a three-quarter-scale deflection of the CDI while on the final approach segment. During precision approaches the student will avoid descents below the DA/DH before initiating a missed approach procedure or transitioning to a normal landing approach and allow no more than a three-quarter-scale deflection of the localizer or glideslope while on the final approach segment.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapters 1, 2, 9, & 10
 FAA-H-8083-16-IPH - Chapters 1-4
 AIM - Chapters 1, 4, & 5
 Vol 4: Review Segments as Needed
 Vol 6: Segments 1-4

Notes:

STAGE III
LESSON 43
DUAL - AIRCRAFT
CROSS-COUNTRY

DATE _____ ACFT/FTD ID _____ GRADE (Circle One) S U I
 STUDENT NAME _____ STUDENT SIGNATURE _____
 INSTRUCTOR # _____ INSTRUCTOR SIGNATURE _____
 FLIGHT TIME: (3.0) _____ DISCUSSION: (0.4) _____
 INSTRUMENT: (2.8) _____ CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____

LESSON OBJECTIVE:

During this lesson, the instructor will review IFR cross-country flight planning and executing instrument approaches with the student. The cross-country should be planned to multiple airports with at least one airport more than 75 nautical miles from the departure airport. All airports should be sufficiently spaced to allow the student at least some realistic en route time.

CONTENT:

Lesson Introduction

_____ Dealing with En Route Weather
 _____ Preparation of an IFR Navigation Log
 _____ Planning Departures and Arrivals
 _____ Power / Fuel Management

Lesson Review

_____ Filing an IFR Flight Plan
 _____ Copying / Understanding IFR Clearances
 _____ Nonprecision Approach
 _____ APV Approach
 _____ Precision Approach
 _____ Missed Approach Procedures
 _____ Circle to Land Procedures

COMPLETION STANDARDS:

At the completion of this lesson, the student will be able to perform an IFR cross-country with minimal assistance from the instructor. The student will maintain headings $\pm 5^\circ$ en route/ $\pm 10^\circ$ on approaches, maintain altitudes, other than flight at MDA or during the final approach segment of a precision approach, $\pm 100'$, maintain airspeeds ± 10 knots, and maintain turning angles of bank $\pm 5^\circ$. During nonprecision approaches the student will maintain the MDA, when reached, $+100/-0$ feet to the MAP and allow no more than a three-quarter-scale deflection of the CDI while on the final approach segment. During precision approaches the student will avoid descents below the DA/DH before initiating a missed approach procedure or transitioning to a normal landing approach and allow no more than a three-quarter-scale deflection of the localizer or glideslope while on the final approach segment.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapters 2, 9, & 10
 FAA-H-8083-16-IPH - Chapters 1-4
 AIM - Chapters 4, 5, & 7
 Vol 2: Review Segments as Needed
 Vol 6: Review Segments as Needed

Notes:

STAGE III
LESSON 44
DUAL - FTD / ATD
CROSS-COUNTRY

DATE _____	ACFT/FTD ID _____	GRADE (Circle One) S U I	
STUDENT NAME _____		STUDENT SIGNATURE _____	
INSTRUCTOR # _____		INSTRUCTOR SIGNATURE _____	
FTD/ATD/SIM: (2.0) _____		DISCUSSION: (0.4) _____	
CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____			

LESSON OBJECTIVE:

During this lesson, the instructor will review IFR cross-country flight planning and decision making and executing instrument approaches.

CONTENT:

Lesson Review

- _____ Dealing with En Route & Terminal Weather
- _____ Preparation of an IFR Navigation Log
- _____ Planning Departures and Arrivals
- _____ Lost Communications Procedures
- _____ Copying / Understanding IFR Clearances

Lesson Review

- _____ DME Arc
- _____ Nonprecision Approach - Partial Panel
- _____ Precision Approach
- _____ Missed Approach Procedures
- _____ Circle to Land Procedures

COMPLETION STANDARDS:

At the completion of this lesson, the student will be able to plan an IFR cross-country flight and complete an IFR navigation log. The student will maintain headings $\pm 5^\circ$ en route/ $\pm 10^\circ$ on approaches, maintain altitudes, other than flight at MDA or during the final approach segment of a precision approach, $\pm 100'$, maintain airspeeds ± 10 knots, and maintain turning angles of bank $\pm 5^\circ$. During nonprecision approaches the student will maintain the MDA, when reached, $+100/-0$ feet to the MAP and allow no more than a three-quarter-scale deflection of the CDI while on the final approach segment. During precision approaches the student will avoid descents below the DA/DH before initiating a missed approach procedure or transitioning to a normal landing approach and allow no more than a three-quarter-scale deflection of the localizer or glideslope while on the final approach segment.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapters 2, 9, & 10

FAA-H-8083-16-IPH - Chapters 1-4

AIM - Chapters 1, 4, 5, & 7

Vol 3: Review Segments as Needed

Vol 4: Review Segments as Needed

Notes:

STAGE III
LESSON 45
DUAL - AIRCRAFT
CROSS-COUNTRY

DATE _____ ACFT/FTD ID _____ GRADE (Circle One) S U I
 STUDENT NAME _____ STUDENT SIGNATURE _____
 INSTRUCTOR # _____ INSTRUCTOR SIGNATURE _____
 FLIGHT TIME: (4.0) _____ DISCUSSION: (0.4) _____
 INSTRUMENT: (3.8) _____ CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____

LESSON OBJECTIVE:

During this lesson, the instructor will review IFR cross-country flight planning and executing instrument approaches with the student. **The student will also perform a cross-country flight of at least 250 nautical miles along airways or an ATC-directed routing with one segment of the flight consisting of at least a straight-line distance of 100 nautical miles between airports; involving an instrument approach at each airport; and involving three different kinds of approaches with the use of navigation systems.** The autopilot should be used where appropriate to assist in management of the aircraft.

CONTENT:

Lesson Review

_____ Filing an IFR Flight Plan
 _____ Copying / Understanding IFR Clearances
 _____ Dealing with En Route Weather
 _____ Preparation of an IFR Navigation Log
 _____ Planning Departures and Arrivals
 _____ Power / Fuel Management

Lesson Review

_____ Nonprecision Approach
 _____ Precision Approach
 _____ Missed Approach Procedures
 _____ Approaches with an Autopilot (Precision & Nonprecision)
 _____ Circle to Land Procedures

COMPLETION STANDARDS:

At the completion of this lesson, the student will be able to perform an IFR cross-country with minimal assistance from the instructor. The student will utilize the autopilot as appropriate to assist in managing the aircraft but will not display dependence on it. The student will maintain headings $\pm 5^\circ$ en route/ $\pm 10^\circ$ on approaches, maintain altitudes, other than flight at MDA or during the final approach segment of a precision approach, $\pm 100'$, maintain airspeeds ± 10 knots, and maintain turning angles of bank $\pm 5^\circ$. During nonprecision approaches the student will maintain the MDA, when reached, $+100/-0$ feet to the MAP and allow no more than a three-quarter-scale deflection of the CDI while on the final approach segment. During precision approaches the student will avoid descents below the DA/DH before initiating a missed approach procedure or transitioning to a normal landing approach and allow no more than a three-quarter-scale deflection of the localizer or glideslope while on the final approach segment.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapters 2, 9, & 10
 FAA-H-8083-16-IPH - Chapters 1-4
 AIM - Chapters 1, 4, & 5

Vol 4: Review Segments as Needed
 Vol 6: Review Segments as Needed

Notes:

STAGE III
LESSON 46
DUAL - GROUND
END OF STAGE REVIEW

DATE _____	GRADE (Circle One) S U I
STUDENT NAME _____	STUDENT SIGNATURE _____
INSTRUCTOR # _____	INSTRUCTOR SIGNATURE _____
DISCUSSION: (1.2) _____	
CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____	

LESSON OBJECTIVE:

The objective of this lesson is to evaluate the student's comprehension of the material presented in the Instrument Pilot Certification ground lessons.

CONTENT:

Lesson Review

- _____ Instrument Pilot Knowledge Test
- _____ Weather Information
- _____ Cross-Country Flight Planning
- _____ Aircraft Systems Related to IFR Flight

Lesson Review

- _____ Aircraft Flight / Navigation Equipment
- _____ Instrument Flight Deck Check
- _____ FARs Related to IFR Flight & Pilot Qualifications

COMPLETION STANDARDS:

In order to complete the ground portion of the Instrument Pilot Certification Course, the student must score at least a 70% on the Instrument Pilot Knowledge Test. The student must have instrument pilot level knowledge of the items listed for review.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapters 2, 9, & 10
 FAA-H-8083-16-IPH - Chapters 1-4
 AIM - Chapters 1, 4, 5, & 7

Notes:

STAGE III
LESSON 47
DUAL - AIRCRAFT
END OF STAGE REVIEW

DATE _____ ACFT/FTD ID _____ GRADE (Circle One) S U I
 STUDENT NAME _____ STUDENT SIGNATURE _____
 INSTRUCTOR # _____ INSTRUCTOR SIGNATURE _____
 FLIGHT TIME: (2.0) _____ DISCUSSION: (0.4) _____
 INSTRUMENT: (1.8) _____ CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____

LESSON OBJECTIVE:

During this lesson, the instructor will review instrument flight procedures with the student in preparation for the final stage check.

CONTENT:

Lesson Review

_____ Instrument Flight Deck Check
 _____ Compliance with ATC Clearances
 _____ Communications
 _____ Holding Procedures
 _____ Instrument Flight
 _____ Partial Panel Instrument Flight
 _____ Recovery from Unusual Attitudes
 _____ Intercepting / Tracking Navigation Systems
 _____ Departure, En route and Arrival Operations
 _____ Nonprecision Approach - Full Approach
 _____ Nonprecision Approach - Vectored
 _____ Nonprecision Approach with an Autopilot

Lesson Review

_____ Nonprecision Approach with Loss of
 Primary Flight Instrument Indicators
 _____ APV Approach
 _____ Precision Approach
 _____ Missed Approach Procedures
 _____ Missed Approach Procedures with an
 Autopilot
 _____ Circling Approach
 _____ Landing from Straight-In / Circling
 Approaches
 _____ Loss of Communications
 _____ Checking Instruments and Equipment

COMPLETION STANDARDS:

The student shall perform all maneuvers to the standards established by the Instrument Rating Airman Certification Standards.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH -
 Chapters 2, 7, 9, & 10
 FAA-H-8083-16-IPH - Chapters 1-4
 AIM - Chapters 1, 4, 5, & 7
 Instrument Rating Airman Certification
 Standards (ACS)
 Vol 7: Segments 1-13

Note: The Nonprecision Approach with Loss of Primary Flight Instrument Indicators and the Nonprecision Approach with an Autopilot can be combined with the full and vectored approaches. Just as the airman certification standards require, the student should complete at least 2 nonprecision approaches and 1 precision approach during this review session. At least 1 nonprecision approach should include a procedure turn or a full TAA transition. LPV minimums with a DA greater than 300 feet HAT may be used as a nonprecision approach; LPV minimums can be used to demonstrate precision approach proficiency if the DA is equal to or less than 300 feet HAT. While this review flight can be flown as a practice checkride, it is important to ensure that the student is fully prepared for any type of approach that the airplane is capable of flying prior to the checkride thus additional approaches may be appropriate.

Notes:

PRE-STAGE CHECK – TIME SUMMARY

This page is intended to be used by the student's flight instructor to summarize the times accumulated through this course of instruction and determine that the times are sufficient for the stage requirements. The check instructor should verify that these times are acceptable for completion of the stage.

Part 141 Note: The instrument time in an approved FTD or AATD used to meet the minimum requirements of Part 141 may not exceed 40% of the total flight training hours required for the course of instruction. Training time in an approved BATD cannot exceed 25% of the total flight training hours required for the course of instruction. The limit is raised to 50% for an approved full flight simulator or a combination of a simulator, an FTD, an AATD, and a BATD (FTD, AATD & BATD time limits still apply).

DATE _____ STUDENT NAME _____ STUDENT SIGNATURE _____

INSTRUCTOR # _____ INSTRUCTOR SIGNATURE _____

STAGE TOTALS

FLIGHT TIME: _____ (In stage only.)

GROUND/DISCUSSION: _____ (Be sure to include the Ground Lesson times.)

FTD/ATD/SIM: _____ (In stage only.)

INSTRUMENT: _____ (In flight only.)

COURSE TOTALS

FLIGHT TIME: _____ (In course only.)

GROUND/DISCUSSION: _____ (Be sure to include the Ground Lesson times.)

FTD/ATD/SIM: _____ (In course only.)

INSTRUMENT: _____ (In flight only.)

STAGE III
LESSON 48
STAGE III CHECK

DATE _____	ACFT/FTD ID _____	GRADE (Circle One) S U I	
STUDENT NAME _____		STUDENT SIGNATURE _____	
INSTRUCTOR # _____		INSTRUCTOR SIGNATURE _____	
FLIGHT TIME: (2.0) _____		DISCUSSION: (1.0) _____	
INSTRUMENT: (1.8) _____		CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____	

LESSON OBJECTIVE:

During this lesson, the student will complete a stage check for the Instrument Rating.

CONTENT:

Lesson Review

ORAL

- _____ Weather Information
- _____ Cross-Country Flight Planning
- _____ Aircraft Systems Related to IFR Flight
- _____ Aircraft Flight / Navigation Equipment
- _____ Instrument Flight Deck Check
- _____ FARs Related to IFR Flight & Pilot Qualifications

FLIGHT

- _____ Instrument Flight Deck Check
- _____ Compliance with ATC Clearances
- _____ Holding Procedures
- _____ Instrument Flight
- _____ Partial Panel Instrument Flight
- _____ Recovery from Unusual Flight Attitudes
- _____ Intercepting / Tracking Navigation Systems

Lesson Review

FLIGHT (continued)

- _____ Departure, En route and Arrival Operations
- _____ Nonprecision Approach - Full Approach
- _____ Nonprecision Approach - Vectored
- _____ Nonprecision Approach with an Autopilot
- _____ Nonprecision Approach with Loss of Primary Flight Instrument Indicators
- _____ APV Approach
- _____ Precision Approach
- _____ Missed Approach Procedures
- _____ Missed Approach Procedures with an Autopilot
- _____ Circling Approach
- _____ Landing from Straight-In / Circling Approaches
- _____ Loss of Communications
- _____ Checking Instruments and Equipment

COMPLETION STANDARDS:

The student shall perform all maneuvers to the standards established by the Instrument Rating Airman Certification Standards.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH -
 Chapters 2, 7, 9, & 10
 FAA-H-8083-16-IPH - Chapters 1-4
 Instrument Rating ACS
 Vol 7: Review Segments as Needed

Note: The Nonprecision Approach with Loss of Primary Flight Instrument Indicators and the Nonprecision Approach with an Autopilot can be combined with the full and vectored approaches. Just as the airman certification standards require, the student should complete at least 2 nonprecision approaches and 1 precision approach during this stage check. At least 1 nonprecision approach should include a procedure turn or a full TAA transition. LPV minimums with a DA greater than 300 feet HAT may be used as a nonprecision approach; LPV minimums can be used to demonstrate precision approach proficiency if the DA is equal to or less than 300 feet HAT.

Notes:

RECORD OF EXTRA TRAINING

DATE_____ ACFT/FTD ID_____ GRADE (Circle One) S U I

STUDENT NAME _____ STUDENT SIGNATURE_____

INSTRUCTOR # _____ INSTRUCTOR SIGNATURE_____

FLIGHT TIME: _____ DISCUSSION: _____

CRS TOTALS: (F/I/D/FS) _____ / _____ / _____ / _____

CONTENT:

[illegible]This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. There is a vertical margin line on the left side, creating a narrow left margin. The paper appears to be from a notebook or a standard ruled document.

DATE _____	ACFT/FTD ID _____	GRADE (Circle One) S U I	
STUDENT NAME _____		STUDENT SIGNATURE _____	
INSTRUCTOR # _____		INSTRUCTOR SIGNATURE _____	
FLIGHT TIME: _____		DISCUSSION: _____	
CRS TOTALS: (F/I/D/FS) _____ / _____ / _____ / _____			

[illegible]This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. There is a vertical margin line on the left side, creating a narrow left margin. The paper appears to be from a notebook or a standard ruled document.

RECORD OF EXTRA TRAINING

DATE_____ ACFT/FTD ID_____ GRADE (Circle One) S U I

STUDENT NAME _____ STUDENT SIGNATURE_____

INSTRUCTOR # _____ INSTRUCTOR SIGNATURE_____

FLIGHT TIME: _____ DISCUSSION: _____

CRS TOTALS: (F/I/D/FS) _____ / _____ / _____ / _____

CONTENT:

[illegible]This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There is a vertical margin line on the left side, creating a narrow left margin. The paper appears to be a standard notebook or worksheet page.

DATE _____	ACFT/FTD ID _____	GRADE (Circle One) S U I	
STUDENT NAME _____		STUDENT SIGNATURE _____	
INSTRUCTOR # _____		INSTRUCTOR SIGNATURE _____	
FLIGHT TIME: _____		DISCUSSION: _____	
CRS TOTALS: (F/I/D/FS) _____ / _____ / _____ / _____			

[illegible]This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. There is a vertical margin line on the left side, creating a narrow left margin. The paper appears to be from a notebook or a standard ruled document.

RECORD OF EXTRA TRAINING

DATE_____ ACFT/FTD ID_____ GRADE (Circle One) S U I

STUDENT NAME _____ STUDENT SIGNATURE_____

INSTRUCTOR # _____ INSTRUCTOR SIGNATURE_____

FLIGHT TIME: _____ DISCUSSION: _____

CRS TOTALS: (F/I/D/FS) _____ / _____ / _____ / _____

CONTENT:

[illegible]This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There is a vertical margin line on the left side, creating a narrow left margin. The paper appears to be a standard notebook or worksheet page.

DATE _____	ACFT/FTD ID _____	GRADE (Circle One) S U I	
STUDENT NAME _____		STUDENT SIGNATURE _____	
INSTRUCTOR # _____		INSTRUCTOR SIGNATURE _____	
FLIGHT TIME: _____		DISCUSSION: _____	
CRS TOTALS: (F/I/D/FS) _____ / _____ / _____ / _____			

[illegible]This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There is a vertical margin line on the left side, creating a narrow left margin. The paper appears to be from a notebook or a standard ruled document.

RECORD OF EXTRA TRAINING

DATE_____ ACFT/FTD ID_____ GRADE (Circle One) S U I

STUDENT NAME _____ STUDENT SIGNATURE_____

INSTRUCTOR # _____ INSTRUCTOR SIGNATURE_____

FLIGHT TIME: _____ DISCUSSION: _____

CRS TOTALS: (F/I/D/FS) _____ / _____ / _____ / _____

CONTENT:

[illegible][illegible]

DATE _____	ACFT/FTD ID _____	GRADE (Circle One) S U I	
STUDENT NAME _____		STUDENT SIGNATURE _____	
INSTRUCTOR # _____		INSTRUCTOR SIGNATURE _____	
FLIGHT TIME: _____		DISCUSSION: _____	
CRS TOTALS: (F/I/D/FS) _____ / _____ / _____ / _____			

[illegible][illegible]

RECORD OF EXTRA TRAINING

DATE_____ ACFT/FTD ID_____ GRADE (Circle One) S U I

STUDENT NAME _____ STUDENT SIGNATURE_____

INSTRUCTOR # _____ INSTRUCTOR SIGNATURE_____

FLIGHT TIME: _____ DISCUSSION: _____

CRS TOTALS: (F/I/D/FS) _____ / _____ / _____ / _____

CONTENT:

[illegible][illegible]

STAGE I
LESSON Optional 9a
DUAL - GROUND
NDB FUNDAMENTALS

DATE _____	GRADE (Circle One) S U I
STUDENT NAME _____	STUDENT SIGNATURE _____
INSTRUCTOR # _____	INSTRUCTOR SIGNATURE _____
DISCUSSION: (1.2) _____	
CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____	

LESSON OBJECTIVE:

During this lesson, the instructor will discuss NDB fundamentals with the student. This lesson is considered optional and is not considered a part of the 141 required times. It can be taught at the discretion of the flight instructor if the training aircraft is equipped with an ADF.

CONTENT:

Lesson Introduction

- _____ NDB Principles of Operation
- _____ NDB Transmitter
- _____ ADF
- _____ Types of NDBs & Service Volumes
- _____ NDB Errors & Irregularities
- _____ NDB Tuning, Identifying, and Monitoring

Lesson Introduction

- _____ NDB Orientation, Position and Station
- _____ Passage
- _____ Intercepting NDB Bearings
- _____ Tracking NDB Bearings / Wind Correction
- _____ Techniques

COMPLETION STANDARDS:

At the completion of this lesson, the student will have a thorough knowledge of the NDB and its operating principles. The student will also be able to accurately describe the proper techniques for orientation, intercepting, and tracking an NDB bearing.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapter 9
 AIM - Aeronautical Information Manual - Chapter 1

Notes:

STAGE I
LESSON Optional 10a
DUAL - FTD / ATD

DATE _____ ACFT/FTD ID _____ GRADE (Circle One) S U I
 STUDENT NAME _____ STUDENT SIGNATURE _____
 INSTRUCTOR # _____ INSTRUCTOR SIGNATURE _____
 FTD/ATD/SIM: (1.5) _____ DISCUSSION: (0.4) _____
 CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____

LESSON OBJECTIVE:

During this lesson, the instructor will introduce NDB procedures in an FTD or ATD. This lesson is considered optional and is not considered a part of the 141 required times. It can be taught at the discretion of the flight instructor if the training aircraft is equipped with an ADF.

CONTENT:

Lesson Introduction

- _____ NDB Tuning, Identifying, and Monitoring
- _____ NDB Orientation, Position, and Station
Passage
- _____ NDB Intercepting and Tracking Procedures
/ Wind Correction Techniques

COMPLETION STANDARDS:

At the completion of this lesson, the student will have a basic knowledge of NDB procedures. The student will maintain or roll out on assigned headings $\pm 10^\circ$, maintain or level off at assigned altitudes $\pm 100'$, maintain airspeeds ± 10 knots, and maintain turning angles of bank $\pm 5^\circ$.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapter 9

AIM - Chapter 1

Notes:

STAGE I
LESSON Optional 11a
DUAL - AIRCRAFT

DATE _____ ACFT/FTD ID _____ GRADE (Circle One) S U I

STUDENT NAME _____ STUDENT SIGNATURE _____

INSTRUCTOR # _____ INSTRUCTOR SIGNATURE _____

FLIGHT TIME: (1.2) _____ DISCUSSION: (0.4) _____

INSTRUMENT: (1.0) _____ CRS TOTALS: (F/I/D/FS) _____ / _____ / _____ / _____

LESSON OBJECTIVE:

During this lesson, the instructor will introduce NDB procedures in the training aircraft. This lesson is considered optional and is not considered a part of the 141 required times. It can be taught at the discretion of the flight instructor if the training aircraft is equipped with an ADF.

CONTENT:
Lesson Introduction

_____ NDB Tuning, Identifying, and Monitoring
 _____ NDB Orientation, Position, and Station
 _____ Passage

Lesson Introduction

_____ NDB Intercepting and Tracking Procedures
 _____ / Wind Correction Techniques

COMPLETION STANDARDS:

At the completion of this lesson, the student will have a basic knowledge of NDB procedures. The student will maintain or roll out on assigned headings $\pm 10^\circ$, maintain or level off at assigned altitudes $\pm 100'$, maintain airspeeds ± 10 knots, and maintain turning angles of bank $\pm 5^\circ$. While tracking a specified NDB course, the student will apply proper correction to maintain the course, allowing no more than $\pm 20^\circ$ of deviation.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapter 9
 AIM - Chapter 1

Notes:

STAGE II
LESSON Optional 24a
DUAL - FTD / ATD

DATE _____	ACFT/FTD ID _____	GRADE (Circle One) S U I	
STUDENT NAME _____		STUDENT SIGNATURE _____	
INSTRUCTOR # _____		INSTRUCTOR SIGNATURE _____	
FTD/SIM: (1.5) _____		DISCUSSION: (0.4) _____	
CRS TOTALS: (F/I/D/FS) ____ / ____ / ____ / ____			

LESSON OBJECTIVE:

During this lesson, the instructor will introduce the student to nonprecision approaches and missed approach procedures. Holding procedures will be reviewed. This lesson is considered optional and is not considered a part of the 141 required times. It can be taught at the discretion of the flight instructor as a substitute for Lesson 24 if the training aircraft is equipped with an ADF.

CONTENT:**Lesson Introduction**

- _____ Departure Vectors to Filed Route
- _____ Climb Via SID Operations
- _____ IFR Navigation
- _____ Approach Setup and Briefing
- _____ Descend Via STAR Operations
- _____ VOR Approach
- _____ NDB Approach
- _____ GPS Approach (LNAV)
- _____ Missed Approach Procedures
- _____ Landing from an Approach

Lesson Review

- _____ Copying / Understanding IFR Clearances
- _____ ATC Communications
- _____ Holding Pattern Entries
- _____ Holding Patterns (VOR/NDB/GPS)

COMPLETION STANDARDS:

At the completion of this lesson, the student will have a basic understanding of holding procedures, nonprecision approach procedures, and missed approach procedures. The student will maintain headings $\pm 10^\circ$, maintain altitudes, other than flight at MDA, $\pm 100'$, maintain airspeeds ± 10 knots, and maintain turning angles of bank $\pm 5^\circ$. During nonprecision approaches the student will maintain the MDA, when reached, +200/-0 feet to the MAP and allow no more than a three-quarter-scale deflection of the CDI while on the final approach segment.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapters 9 & 10
 FAA-H-8083-16-IPH - Chapters 1-4
 AIM - Chapters 4 & 5

Vol 2: Segments 5 & 6
 Vol 3: Segments 8-14
 Vol 4: Segments 8-11

Notes:

STAGE II
LESSON Optional 26a
DUAL - AIRCRAFT

DATE _____ ACFT/FTD ID _____ GRADE (Circle One) S U I

STUDENT NAME _____ STUDENT SIGNATURE _____

INSTRUCTOR # _____ INSTRUCTOR SIGNATURE _____

FLIGHT TIME: (1.8) _____ DISCUSSION: (0.4) _____

INSTRUMENT: (1.6) _____ CRS TOTALS: (F/I/D/FS) _____ / _____ / _____ / _____

LESSON OBJECTIVE:

During this lesson, the instructor will review IFR navigation, ATC communication procedures, obtaining IFR clearances, performing an approach brief, and executing nonprecision instrument approaches with the student in the training aircraft. This lesson is considered optional and is not considered a part of the 141 required times. It can be taught at the discretion of the flight instructor as a substitute for Lesson 26 if the training aircraft is equipped with an ADF.

CONTENT:
Lesson Introduction

_____ Filing an IFR Flight Plan

_____ Copying / Understanding IFR Clearances

_____ ATC Communications

_____ Departure Vectors to Filed Route or Pilot

_____ Nav to Filed Route

_____ Climb Via SID Operations

_____ IFR Navigation

Lesson Introduction

_____ Holding Procedures

_____ Descend Via STAR Operations

_____ Approach Setup and Briefing

_____ VOR Approach

_____ NDB Approach

_____ GPS Approach (LNAV)

_____ Missed Approach Procedures

COMPLETION STANDARDS:

At the completion of this lesson, the student will be able to navigate, hold en route, and perform VOR, NDB, and GPS approaches with minimal instructor assistance. The student should also be able to perform ATC communications with minimal instructor assistance. The student will maintain headings $\pm 10^\circ$, maintain altitudes, other than flight at MDA or during the final approach segment of a precision approach, $\pm 100'$, maintain airspeeds ± 10 knots, and maintain turning angles of bank $\pm 5^\circ$. During nonprecision approaches the student will maintain the MDA, when reached, $+200/-0$ feet to the MAP and allow no more than a three-quarter-scale deflection of the CDI while on the final approach segment.

ADDITIONAL STUDY:

FAA-H-8083-15-IFH - Chapters 9 & 10

FAA-H-8083-16-IPH - Chapters 1-4

AIM - Chapters 4 & 5

Vol 2: Segments 5 & 6

Vol 3: Segments 8-14

Vol 4: Segments 8-11

Notes:
