

# **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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<b>STUDENT INFORMATION</b>		
Name _____	LAST	FIRST
	MIDDLE	
Address _____		
City _____	State _____	ZIP _____
Telephone _____		
MOBILE	HOME	WORK
Email _____		
Pilot Cert. _____		
TYPE	CERT #	DATE ISSUED
Emergency Contact _____		
Phone _____		Relationship _____

<b>ENROLLMENT INFORMATION</b>		
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 _____		

<b>STAGE CHECK / KNOWLEDGE TEST COMPLETION RECORD</b>					
Date _____	Stage _____	Ck Pilot _____	Date _____	Stage _____	Ck Pilot _____
Date _____	Stage _____	Ck Pilot _____			
Date of Knowledge Test _____		Grade _____			

<b>ENDORSEMENT RECORD</b>		
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. _____

<b>COMPLETION INFORMATION</b>		
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.

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## **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.

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## **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.

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## 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:

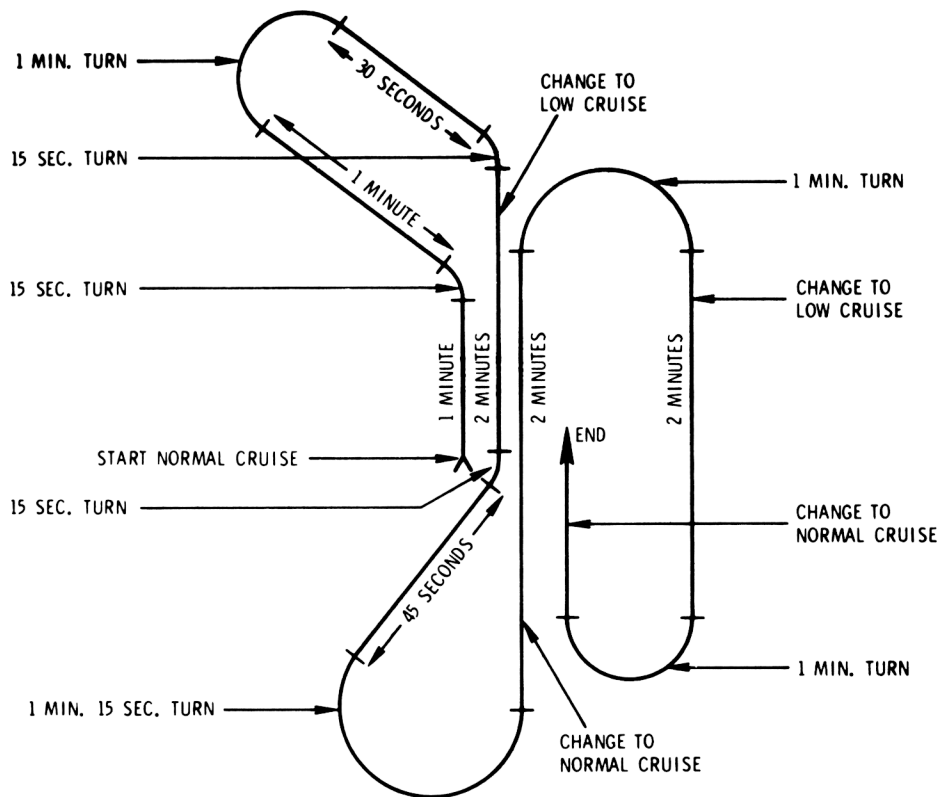
"I certify that [insert student's name] has presented me a [insert type of document presented, such as a U.S. birth certificate or U.S. passport, and the relevant control or sequential number on the document, if any] establishing that [he or she] is a U.S. citizen or national in accordance with 49 CFR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

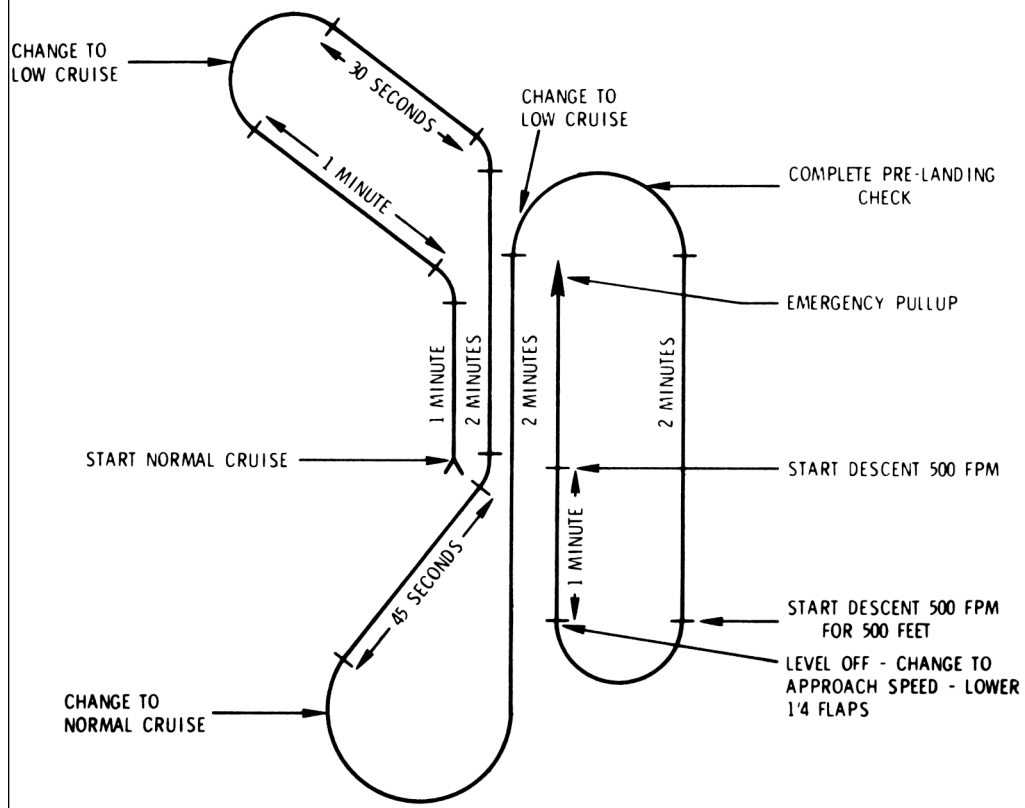


- f. The turn coordinator and magnetic compass must be observed closely at all times. To correct a heading, use a timed turn (for small heading changes, use a half-standard rate turn).
- g. An efficient cross-check is required during airspeed changes so that corrections may be applied immediately.



## 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:**

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**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:**

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**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:**

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**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 ±15°, maintain or level off at assigned altitudes ±150', maintain airspeeds ±15 knots, and maintain turning angles of bank ±10°.

**ADDITIONAL STUDY:**

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

**Notes:**

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**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  $\pm 15$  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

<p><b>Notes:</b></p> <hr/> <hr/> <hr/> <hr/> <hr/>
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**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:**

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**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  $\pm 15$  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

<p><b>Notes:</b></p> <hr/> <hr/> <hr/> <hr/> <hr/>
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**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  $\pm 15$  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:**

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**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  $\pm 15$  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  $\pm 10$  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

<p><b>Notes:</b></p> <hr/> <hr/> <hr/> <hr/> <hr/>
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**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:**

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**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  $\pm 10$  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

<p><b>Notes:</b></p> <hr/> <hr/> <hr/> <hr/> <hr/>
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**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  $\pm 10$  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:**

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**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:**

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**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  $\pm 10$  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:**

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**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:**

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**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  $\pm 10$  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

<p><b>Notes:</b></p> <hr/> <hr/> <hr/> <hr/> <hr/>
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**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:**

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**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  $\pm 10$  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:**

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**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  $\pm 10$  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:**

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## **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:**

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**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  $\pm 10$  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

<p><b>Notes:</b></p> <hr/> <hr/> <hr/> <hr/> <hr/>
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**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:**

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**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:**

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**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  $\pm 10$  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:**

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**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:**

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**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  $\pm 10$  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:**

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**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:**

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**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:**

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**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  $\pm 10$  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

<p><b>Notes:</b></p> <hr/> <hr/> <hr/> <hr/> <hr/>
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**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  $\pm 10$  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:**

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**STAGE II  
LESSON 31  
DUAL - GROUND  
AUTOPILOT  
APPROACHES & DME**

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 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:**

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**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  $\pm 10$  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:**

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**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  $\pm 10$  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

<p><b>Notes:</b></p> <hr/> <hr/> <hr/> <hr/> <hr/>
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**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:**

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**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:**

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**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  $\pm 10$  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:**

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**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:**

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**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  $\pm 10$  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:**

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**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:**

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## **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 Symbology
- \_\_\_\_\_ 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:**

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**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:**

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**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  $\pm 10$  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:**

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**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  $\pm 10$  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:**

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**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  $\pm 10$  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:**

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**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  $\pm 10$  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:**

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**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:**

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**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:**

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**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:**

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**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:**

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**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  $\pm 10$  knots, and maintain turning angles of bank  $\pm 5^\circ$ .

**ADDITIONAL STUDY:**

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

**Notes:**

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**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  $\pm 10$  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

<p><b>Notes:</b></p> <hr/> <hr/> <hr/> <hr/> <hr/>
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**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  $\pm 10$  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 | Vol 2: Segments 5 & 6 |
| FAA-H-8083-16-IPH - Chapters 1-4    | Vol 3: Segments 8-14  |
| AIM - Chapters 4 & 5                | Vol 4: Segments 8-11  |

**Notes:**

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**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  $\pm 10$  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

<p><b>Notes:</b></p> <hr/> <hr/> <hr/> <hr/> <hr/>
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