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

sportys.com

01/24

STUDENT INFORMATION

Name _____
LAST FIRST MIDDLE

Address _____

City _____ State_____ ZIP_____

Telephone _____ _____ _____
MOBILE HOME WORK

Email _____

Pilot Cert. _____
TYPE CERT # DATE ISSUED

Emergency Contact _____

Phone _____ Relationship _____

ENROLLMENT INFORMATION

Course Title _____

Enrollment Date _____ Approved School Cert # _____

Medical Certificate _____
CLASS DATE ISSUED

Previous School _____ Course Title _____

Training Credit _____
FLIGHT GROUND

Approval of Training Credit _____
CHIEF INSTRUCTOR

Remarks _____

STAGE CHECK / KNOWLEDGE TEST COMPLETION RECORD

Date _____ Stage _____ Ck Pilot _____ Date _____ Stage _____ Ck Pilot _____

Date _____ Stage _____ Ck Pilot _____

Date of Knowledge Test _____ Grade _____

ENDORSEMENT RECORD

Pre-Training U.S. Citizenship Confirmation or TSA Alien Flight Training Requirements
Completed with Records Date_____ Type _____ Inst. Int. _____

Complex / High Performance Airplane
Date _____ A/C Type _____ Inst. Int. _____

COMPLETION INFORMATION

Completion _____ Transfer _____ Terminated _____
DATE DATE DATE

Records Certified Correct _____
CHIEF INSTRUCTOR

Remarks _____
_____

TRAINING COURSE OUTLINE
INSTRUMENT RATING - AIRPLANE

COURSE OBJECTIVES

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

COURSE COMPLETION STANDARDS

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

TRAINING COURSE OUTLINE
INSTRUMENT RATING - AIRPLANE

COURSE INTRODUCTION

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

COURSE CONCEPT

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

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

INFORMATION FOR FLIGHT SCHOOLS AND FLIGHT INSTRUCTORS USING THIS TRAINING COURSE OUTLINE (TCO)

Sporty's Instrument Training Course Outline integrates content from Sporty's online Instrument Rating Course training content applicable to 14 CFR Part 141 Appendix C (3)(b) - Instrument Rating Certification Course, Aeronautical Knowledge Training.

The video-based lessons in Sporty's Instrument Rating Course cover all of the aeronautical knowledge areas in 14 CFR Part 141 Appendix C (3)(b) and can be used to satisfy up to 20 of the 30 required ground training hours. The applicable online training content is noted by "ADDITIONAL STUDY" at the end of the ground lesson where appropriate.

Sporty's Instrument Rating Course provides electronic tracking of the student's time spent on each topic which is viewable by the flight instructor. The additional ground training portion may be presented to the student as a formal classroom program or individually by the instructor.

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.

*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.

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.

AVIATION TRAINING DEVICE / FLIGHT 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 approved aviation training device (ATD) or an approved flight training device (FTD). ATD/FTD 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 ATD or FTD. 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.

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 ATD/FTD/simulator times in the course after each lesson.

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 student information page of this document 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.

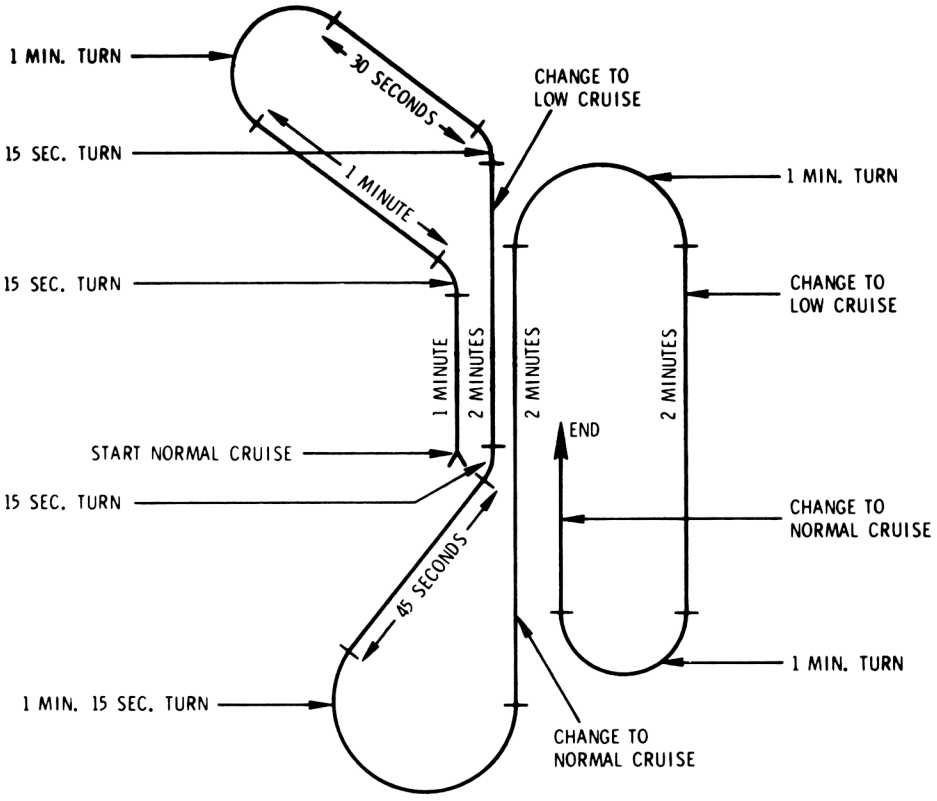
OPTIONAL LESSONS

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.

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.

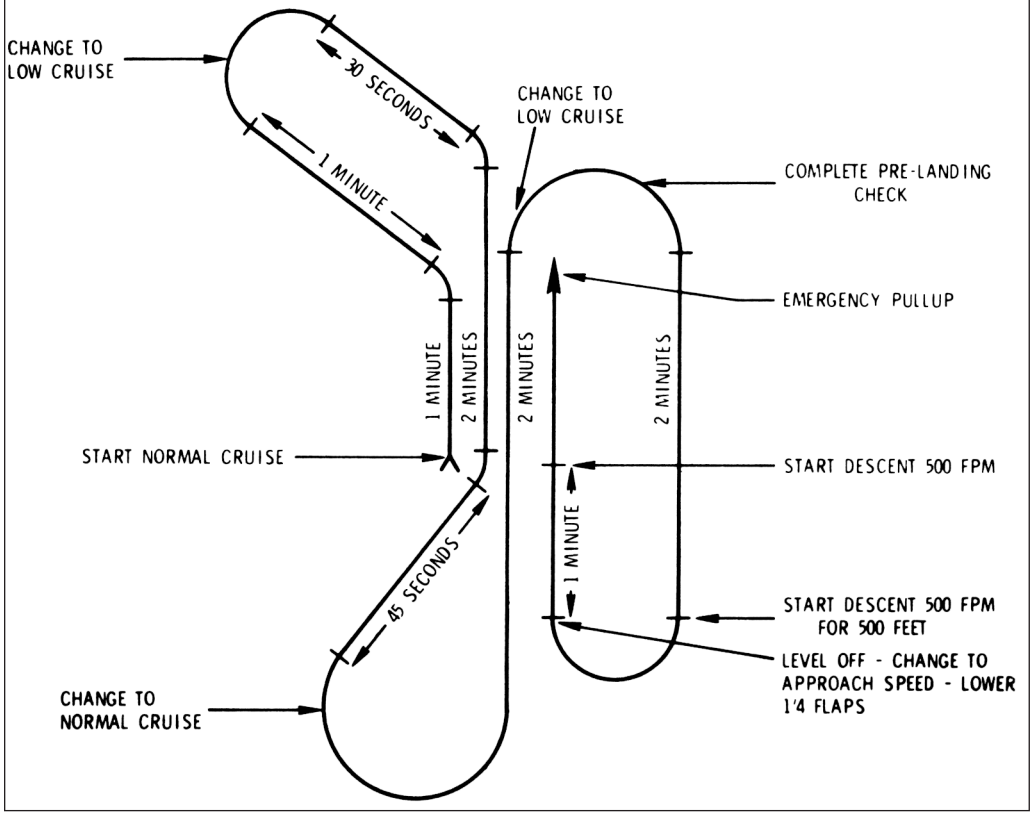
1. *Brief Student Thoroughly Prior to the Flight*
2. *Performance of Maneuver in the Aircraft*
   a. This maneuver should be performed first with all available instruments, then on partial panel.
   b. Start Pattern "A" and demonstrate through the first three turns, then have the student continue.
   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.



INSTRUMENT FLIGHT PATTERNS

The instrument flight patterns "A" and "B" and associated text on these 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.

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)	ATD/FTD	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.

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:

Instrument Flying Handbook
Chapter 5

Airman Certification Standards (ACS)
Sporty's Instrument Rating Airman Certification Standards

Sporty's Instrument Rating Course
Volume 1
Segment 1 - Getting Started with Sporty's Instrument Rating Course
Segment 2 - The IFR Flight to Midway
Segment 3 - The Path to the Instrument Rating
Segment 4 - Attitude and Heading Indicator
Segment 5 - Instrument Scanning Techniques
Segment 6 - Glass Cockpit Flying
Segment 13 - Altimeter and the Airspeed Indicator
Flight Maneuver Guide
Pre-Maneuver Checklist
Instrument Cockpit Check – Flight Instruments Instrument Takeoff

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:

Instrument Flying Handbook
Chapter 6
Chapter 7

Airman Certification Standards (ACS)
Sporty's Instrument Rating Airman
Certification Standards

Sporty's Instrument Rating Course
Volume 1
Segments 1-15

Flight Maneuver Guide
Pre-Maneuver Checklist
Clearing Turns
Instrument Cockpit Check – Communication/Navigation Equipment
Instrument Cockpit Check – Flight Instruments
Instrument Takeoff

STAGE I
LESSON 3
DUAL - AIRCRAFT

DATE_____ ACFT/ATD 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:

Instrument Flying Handbook
Chapter 6
Chapter 7

Airman Certification Standards (ACS)
Sporty's Instrument Rating Airman Certification Standards

Sporty's Instrument Rating Course
Volume 1
Segments 1-7
Segment 11 - Turns and Steep Turns

Flight Maneuver Guide
Pre-Maneuver Checklist
Clearing Turns
Instrument Cockpit Check – Communication/Navigation Equipment
Instrument Cockpit Check – Flight Instruments
Instrument Takeoff

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			_____

STAGE I
LESSON 4
DUAL - AIRCRAFT

DATE_____ ACFT/ATD 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°.

Instrument Flying Handbook
Chapter 6
Chapter 7

Airman Certification Standards (ACS)
Sporty's Instrument Rating Airman Certification Standards

Sporty's Instrument Rating Course
Volume 1
Segments 5-11

Flight Maneuver Guide
Pre-Maneuver Checklist
Clearing Turns
Steep Turn
Instrument Cockpit Check – Communication/Navigation Equipment
Instrument Cockpit Check – Flight Instruments
Instrument Takeoff

STAGE I
LESSON 5
DUAL - AIRCRAFT

DATE_____ ACFT/ATD 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 document. 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 ±15°, maintain or level off at assigned altitudes ±150', maintain airspeeds ±15 knots, and maintain turning angles of bank ±10°.

Instrument Flying Handbook
Chapter 6
Chapter 7

Airman Certification Standards (ACS)
Sporty's Instrument Rating Airman Certification Standards

Sporty's Instrument Rating Course
Volume 1
Segment 5 - Instrument Scanning Techniques
Segment 7 - Straight & Level, Climbs & Descents
Segment 11- Turns and Steep Turns

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:

Instrument Flying Handbook
Chapter 5
Chapter 7

Airman Certification Standards (ACS)
Sporty's Instrument Rating Airman
Certification Standards

Sporty's Instrument Rating Course
Volume 1
Segment 14 - Partial Panel and the Magnetic Compass
Segment 15 - Instrument Failure

STAGE I
LESSON 7
DUAL - ATD / FTD

DATE_____ ACFT/ATD 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 ATD or FTD. Simulation will be used to introduce realistic and unexpected system failures and emergency alternatives to magnetic compass turns.

CONTENT:

Lesson Introduction

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

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

ADDITIONAL STUDY:

Instrument Flying Handbook
Chapter 6
Chapter 7

Airman Certification Standards (ACS)
Sporty's Instrument Rating Airman Certification Standards

Sporty's Instrument Rating Course
Volume 1
Segment 5 - Instrument Scanning Techniques
Segment 7 - Straight & Level, Climbs & Descents
Segment 8 - Closer Look: Flight Simulators
Segment 11 - Turns and Steep Turns
Segment 14 - Partial Panel & Magnetic Compass
Segment 15 - Closer Look: Instrument Failure

STAGE I
LESSON 8
DUAL - AIRCRAFT

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

ADDITIONAL STUDY:

Instrument Flying Handbook
Chapter 6
Chapter 7

Airman Certification Standards (ACS)
Sporty's Instrument Rating Airman Certification Standards

Sporty's Instrument Rating Course
Volume 1
Segment 5 - Instrument Scanning Techniques
Segment 7 - Straight & Level, Climbs & Descents
Segment 8 - Closer Look: Flight Simulators
Segment 11 - Turns and Steep Turns
Segment 14 - Partial Panel & Magnetic Compass
Segment 15 - Closer Look: Instrument Failure

STAGE I
LESSON 9
DUAL - AIRCRAFT

DATE_____ ACFT/ATD 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 ±15°, maintain or level off at assigned altitudes ±150', maintain airspeeds ±15 knots, and maintain turning angles of bank ±10°. During full panel instrument flight maneuvers, the student will maintain or roll out on assigned headings ±10°, maintain or level off at assigned altitudes ±100', maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°.

ADDITIONAL STUDY:

Instrument Flying Handbook
Chapter 6
Chapter 7

Airman Certification Standards (ACS)
Sporty's Instrument Rating Airman Certification Standards

Sporty's Instrument Rating Course
Volume 1
Segment 14 - Partial Panel & Magnetic Compass
Segment 15 - Closer Look: Instrument Failure

Flight Maneuver Guide
Instrument Cockpit Check – Flight Instruments

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:

Instrument Flying Handbook
Chapter 9

Aeronautical Information Manual
Chapter 1

Airman Certification Standards (ACS) Sporty's Instrument Rating Airman Certification Standards

Sporty's Instrument Rating Course
Volume 2
Segment 1 - Planning with IFR En Route Charts
Segment 4 - VOR Navigation and Airways

Volume 3
Segment 10 - Flying a VOR Approach with a Jepp Chart

Flight Maneuver Guide
Intercepting and Tracking Navigational Systems – VOR Radials

STAGE I
LESSON 11
DUAL - ATD / FTD

DATE_____ ACFT/ATD 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 ATD or FTD.

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 ±10°, maintain or level off at assigned altitudes ±100', maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°.

ADDITIONAL STUDY:

Instrument Flying Handbook
Chapter 9

Aeronautical Information Manual
Chapter 1

Airman Certification Standards (ACS)
Sporty's Instrument Rating Airman Certification Standards

Sporty's Instrument Rating Course
Volume 2
Segment 1 - Planning With IFR En Route Charts
Segment 4 - VOR Navigation and Airways

Volume 3
Segment 10 - Flying a VOR Approach with a Jepp Chart

Flight Maneuver Guide
Intercepting and Tracking Navigational Systems – VOR Radials

STAGE I
LESSON 12
DUAL - AIRCRAFT

DATE_____ ACFT/ATD 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 ±10°, maintain or level off at assigned altitudes ±100', maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. 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:

Instrument Flying Handbook
Chapter 9

Airman Certification Standards (ACS)
Sporty's Instrument Rating Airman Certification Standards

Sporty's Instrument Rating Course
Volume 2
Segment 1 - Planning with IFR En Route Charts
Segment 4 - VOR Navigation and Airways

Flight Maneuver Guide
Intercepting and Tracking Navigational Systems – VOR Radials

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 / App 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:

Instrument Flying Handbook
Chapter 9

Aeronautical Information Manual
Chapter 1

Appropriate Manuals for the Installed GPS
Airman Certification Standards (ACS)
Sporty's Instrument Rating Airman Certification Standards

Sporty's Instrument Rating Course
Volume 2
Segment 2 - GPS Navigation and the Garmin GTN 650

Flight Maneuver Guide
Intercepting and Tracking Navigational Systems – GPS Course

STAGE I
LESSON 14
DUAL - ATD / FTD

DATE_____ ACFT/ATD 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 ATD or FTD. 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 ±10°, maintain altitudes ±100', maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. 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:

Instrument Flying Handbook
Chapter 9

Airman Certification Standards (ACS)
Sporty's Instrument Rating Airman Certification Standards

Sporty's Instrument Rating Course
Volume 2
Segment 2 - GPS Navigation and the Garmin GTN 650

Flight Maneuver Guide
Intercepting and Tracking Navigational System - GPS Course
Intercepting and Tracking Navigational Systems - VOR Radials

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, & Failure Modes

Lesson Introduction

_____ Autopilot Disconnect Options
_____ Autopilot Limitations
_____ Installed Autopilot Specific Procedures

COMPLETION STANDARDS:

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

ADDITIONAL STUDY:

Instrument Flying Handbook
Chapter 5

Airman Certification Standards (ACS)
Sporty's Instrument Rating Airman Certification Standards

Sporty's Instrument Rating Course
Volume 5
Segment 3 - IFR Use Of The Autopilot

STAGE I
LESSON 16
DUAL - AIRCRAFT

DATE_____ ACFT/ATD 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 ±10°, maintain altitudes ±100', maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. 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:

Instrument Flying Handbook

Chapter 5
Chapter 7
Chapter 9

Airman Certification Standards (ACS)
Sporty's Instrument Rating Airman Certification Standards

Sporty's Instrument Rating Course
Volume 2
Segment 2 - GPS Navigation and the Garmin GTN 650
Segment 4 - VOR Navigation and Airways

Volume 5
Segment 2 - Flight Director and HSI
Segment 3 - IFR Use Of The Autopilot

Flight Maneuver Guide
Intercepting and Tracking
Navigational Systems – VOR Radials
Intercepting and Tracking
Navigational Systems – GPS Course

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:

Federal Aviation Regulations
14 CFR Aviation Regulations

Airman Certification Standards (ACS)
Sporty's Instrument Rating Airman Certification Standards

Aeronautical Information Manual
Chapters 1-7

Sporty's Instrument Rating Course
Volume 1
Segment 3 - The Path to an Instrument Training
Segment 12 - Closer Look: Electronic Flight Bags (EFB)

Volume 5
Segment 10 - Closer Look: Flight Level Rules and Procedures

Volume 6
Segment 1 - Instrument FARs

STAGE I
LESSON 18
DUAL - AIRCRAFT

DATE_____ ACFT/ATD 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 ±10°, maintain altitudes ±100', maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. 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:

Sporty's Instrument Rating Course
Volume 1
Segment 11 - Turns and Steep Turns
Segment 14 - Partial Panel & Magnetic Compass

Volume 2
Segment 2 - GPS Navigation and the Garmin GTN 650
Segment 4 - VOR Navigation and Airways

Volume 5
Segment 4 - IFR Use Of The Autopilot

Instrument Flying Handbook
Chapter 5
Chapter 7
Chapter 9

Airman Certification Standards (ACS)
Sporty's Instrument Rating Airman Certification Standards

Flight Maneuver Guide
Steep Turns
Intercepting and Tracking Navigational Systems – VOR Radials
Intercepting and Tracking Navigational Systems – GPS Course

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.)

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

INSTRUMENT: _____ (In flight only.)

STAGE I
LESSON 19
STAGE I CHECK

DATE_____ ACFT/ATD 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 ±10°, maintain altitudes ±100', maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. 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:

Instrument Flying Handbook

Chapter 5
Chapter 7
Chapter 9

Airman Certification Standards (ACS)

Sporty's Instrument Rating Airman Certification Standards

Sporty's Instrument Rating Course

Volume 1
Review Segments as Needed

Volume 5
Review Segments as Needed

Flight Maneuver Guide

Instrument Cockpit Check – Communication/ Navigation Equipment
Instrument Cockpit Check – Flight Instruments
Instrument Takeoff
Steep Turns
Intercepting and Tracking Navigational Systems – VOR Radials
Intercepting and Tracking Navigational Systems – GPS Course

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:

Instrument Flying Handbook
Chapter 10

Instrument Procedures Handbook
Chapter 2

Aeronautical Information Manual
Chapter 1
Chapter 4
Chapter 5

Airman Certification Standards (ACS)
Sporty's Instrument Rating Airman Certification Standards

Sporty's Instrument Rating Course
Volume 2
Segments 5-8

Volume 3
Segment 12 - Holding Procedures

Volume 6
Segments 3-6

Flight Maneuver Guide
Fix/Crossing Check
Holding Procedures - Direct Entry Holding
Procedures - Teardrop Entry Holding
Procedures - Parallel Entry

STAGE II
LESSON 21
DUAL - ATD / FTD

DATE_____ ACFT/ATD 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 ±10°, maintain altitudes ±100', maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. 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:

Instrument Flying Handbook
Chapter 10

Instrument Procedures Handbook
Chapter 2

Aeronautical Information Manual
Chapter 4
Chapter 5

Airman Certification Standards (ACS)
Sporty's Instrument Rating Airman Certification Standards

Sporty's Instrument Rating Course
Volume 2
Segment 5 - Clearances And IFR Flight Plans

Volume 3
Segment 12 - Holding Procedures

Volume 6
Segments 3-6

Flight Maneuver Guide
Fix/Crossing Check
Holding Procedures - Direct Entry Holding
Procedures - Teardrop Entry Holding
Procedures - Parallel Entry

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:

Instrument Flying Handbook
Chapter 1
Chapter 9
Chapter 10

Instrument Procedures Handbook
Chapters 1-4

Aeronautical Information Manual
Chapter 4
Chapter 5

Airman Certification Standards (ACS)
Sporty's Instrument Rating Airman Certification Standards

Sporty's Instrument Rating Course
Volume 2
Segment 8 - Departing the Terminal Area
Segment 10 - IFR Arrivals

Volume 3
Segment 1 - Intro to Instrument Approaches
Segment 2 - Approach Chart Details
Segment 17 - Going To An Alternate
Segment 18 - Air Facts: What Is The Alternative?

Flight Maneuver Guide
Approach Brief

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 STUDYK

Instrument Flying Handbook
Chapter 1
Chapter 9
Chapter 10

Instrument Procedures Handbook
Chapters 4

Aeronautical Information Manual
Chapter 5

Sporty's Instrument Rating Course
Volume 3
Segments 9-11, 12, 15-16

Flight Maneuver Guide
Approach Brief
Nonprecision Approach – Navaid On Field
Nonprecision Approach Procedure – Navaid Off the Field
Radar Vectored Instrument Approach Procedures
Circling Approach Procedure

STAGE II
LESSON 24
DUAL - ATD / FTD

DATE_____ ACFT/ATD 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 or LP)
_____ 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 ±10°, maintain altitudes, other than flight at MDA, ±100', maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. 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:

Instrument Flying Handbook
Chapter 9
Chapter 10

Instrument Procedures Handbook
Chapters 1-4

Aeronautical Information Manual
Chapter 4
Chapter 5

Airman Certification Standards (ACS)
Sporty's Instrument Rating Airman Certification Standards

Sporty's Instrument Rating Course
Volume 2
Segment 8 - Departing the Terminal Area
Segment 10 - IFR Arrivals

Volume 3
Segments 6-16

Flight Maneuver Guide
Approach Brief
Nonprecision Approach – Navaid On Field Nonprecision
Approach Procedure – Navaid Off the Field
RNAV (GPS) Approach - LNAV
Missed Approach Procedures – From a Straight-In Approach
Landing from an Instrument Approach
Holding Procedures - Direct Entry
Holding Procedures - Teardrop Entry
Holding Procedures - Parallel Entry

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:

Instrument Flying Handbook
Chapter 2
Chapter 10

Instrument Procedures Handbook
Chapters 1-4

Aeronautical Information Manual
Chapter 4
Chapter 5

Airman Certification Standards (ACS)
Sporty's Instrument Rating Airman Certification Standards

Sporty's Instrument Rating Course
Volume 2
Segments 5-12

STAGE II
LESSON 26
DUAL - AIRCRAFT

DATE_____ ACFT/ATD 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 or LP)
_____ 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 ±10°, maintain altitudes, other than flight at MDA or during the final approach segment of a precision approach, ±100', maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. 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:

Instrument Flying Handbook
Chapter 2
Chapter 9
Chapter 10

Instrument Procedures Handbook
Chapters 1-4

Aeronautical Information Manual
Chapter 4
Chapter 5

Sporty's Instrument Rating Course
Volume 2
Segment 8 - Departing the Terminal Area
Segment 10 - IFR Arrivals

Volume 3
Segments 6-16

Flight Maneuver Guide
Approach Brief
Nonprecision Approach – Navaid On Field
Nonprecision Approach Procedure – Navaid Off the Field
RNAV (GPS) Approach - LNAV
Missed Approach Procedures – From a Straight-In Approach
Landing from an Instrument Approach Holding Procedures - Direct Entry
Holding Procedures - Teardrop Entry
Holding Procedures - Parallel Entry

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:

Instrument Flying Handbook
Chapter 2
Chapter 10

Instrument Procedures Handbook
Chapters 1-4

Aeronautical Information Manual
Chapter 4
Chapter 5

Sporty's Instrument Rating Course
Volume 2
Segments 5-12

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

Lesson Introduction

_____ ILS Errors & Irregularities
_____ Localizer and Glideslope Critical Areas
_____ 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 and WAAS systems and their operating principles.

ADDITIONAL STUDY:

Instrument Flying Handbook
Chapter 9

Instrument Procedures Handbook
Chapters 4

Aeronautical Information Manual
Chapter 5

Sporty's Instrument Rating Course
Volume 3
Segment 3 - Flying the Localizer
Segment 4 - Flying the Glideslope

Flight Maneuver Guide
Approach Brief
Precision ILS Instrument Approach Procedure

STAGE II
LESSON 29
DUAL - ATD / FTD

DATE_____ ACFT/ATD 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 ±10°, maintain altitudes, other than during the final approach segment, ±100', maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. 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:

Instrument Flying Handbook
Chapter 9

Instrument Procedures Handbook
Chapters 4

Aeronautical Information Manual
Chapter 5

Sporty's Instrument Rating Course
Volume 3
Segment 3 - Flying the Localizer
Segment 4 - Flying the Glideslope

Flight Maneuver Guide
Approach Brief
Radar Vectored Instrument Approach Procedures
Precision ILS Instrument Approach Procedure
Landing from an Instrument Approach
Missed Approach Procedures – From a Straight-In Approach

STAGE II
LESSON 30
DUAL - AIRCRAFT

DATE_____ ACFT/ATD 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 or LP)
_____ 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 ±10°, maintain altitudes, other than flight at MDA or during the final approach segment of a precision approach, ±100', maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. 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:

Instrument Flying Handbook
Chapter 2
Chapter 9
Chapter 10

Instrument Procedures Handbook
Chapter 4

Aeronautical Information Manual
Chapter 5

Sporty's Instrument Rating Course
Volume 3
Segments 1-16

Flight Maneuver Guide
Approach Brief
Precision ILS Instrument Approach Procedure
RNAV (GPS) Approach - LNAV
RNAV (GPS) Approach - LPV
RNAV (GPS) Approach - LP
Landing from an Instrument Approach
Missed Approach Procedures – From a Straight-In Approach

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:

Instrument Flying Handbook
Chapter 5
Chapter 9

Instrument Procedures Handbook
Chapters 4

Aeronautical Information Manual
Chapter 1
Chapter 5

Sporty's Instrument Rating Course
Volume 3
Segments 1-16

Volume 5
Segment 2 - Flight Director and HSI
Segment 3 - IFR Use Of The Autopilot

Flight Maneuver Guide
Intercepting and Tracking Navigational Systems – DME Arc

STAGE II
LESSON 32
DUAL - ATD / FTD

DATE_____ ACFT/ATD 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 ±10°, maintain altitudes, other than flight at MDA, ±100', maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. 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:

Instrument Flying Handbook
Chapter 9

Instrument Procedures Handbook
Chapter 4

Aeronautical Information Manual
Chapter 5

Sporty's Instrument Rating Course
Volume 3
Review Segments as Needed

Flight Maneuver Guide
Intercepting and Tracking Navigational Systems – DME Arc
Circling Approach Procedure
Missed Approach Procedures – From a Circling Approach

STAGE II
LESSON 33
DUAL - AIRCRAFT

DATE_____ ACFT/ATD 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 ±10°, maintain altitudes, other than flight at MDA or during the final approach segment of a precision approach, ±100', maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. 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:

Flight Maneuver Guide
Review Instrument Flight Maneuvers

Instrument Flying Handbook
Chapter 9

Instrument Procedures Handbook
Chapter 4

Aeronautical Information Manual
Chapter 5

Sporty's Instrument Rating Course
Volume 3
Review Segments as Needed

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:

Instrument Flying Handbook
Chapter 4
Chapter 11

Aeronautical Information Manual
Chapter 7

Pilot's Handbook of Aeronautical Knowledge
Chapter 7
Chapter 12
Chapter 13

Aviation Weather Handbook
Chapter 20 - Icing
Chapter 24 - Observations

Sporty's Instrument Rating Course
Volume 4
Segments 1-5

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:

Instrument Flying Handbook
Chapter 10
Chapter 11

Aeronautical Information Manual
Chapter 7

Pilot's Handbook of Aeronautical Knowledge
Chapter 12
Chapter 13

Aviation Weather Handbook
Chapter 22 - Thunderstorms
Chapter 24 - Observations
Chapter 27 - Forecasts

Sporty's Instrument Rating Course
Volume 4
Segments 6-11

STAGE II
LESSON 36
DUAL - AIRCRAFT

DATE_____ ACFT/ATD 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 ±10°, maintain altitudes, other than flight at MDA or during the final approach segment of a precision approach, ±100', maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. 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:

Instrument Flying Handbook
Chapter 9

Instrument Procedures Handbook
Chapter 4

Aeronautical Information Manual
Chapter 5

Sporty's Instrument Rating Course
Volume 3
Review Segments as Needed

Volume 5
Segment 2 - Flight Director and HSI
Segment 3 - IFR Use Of The Autopilot

Flight Maneuver Guide
Review Instrument Flight Maneuvers

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
_____ Terminal Aerodrome Forecasts
_____ METARs
_____ Winds / Temperatures Aloft
_____ Pilot Reports
_____ Radar Observations
_____ 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:

Instrument Flying Handbook
Chapter 10

Aeronautical Information Manual
Chapter 7

Aviation Weather Handbook
Chapter 10 - Adverse Winds
Chapter 24 - Observations
Chapter 27 - Forecasts

Sporty's Instrument Rating Course
Volume 4
Segment 1 - Checking Weather for an IFR Flight
Segment 2 - Developing Your Own Self-Weather Briefing

STAGE II
LESSON 38
DUAL - AIRCRAFT

DATE_____ ACFT/ATD 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 ±10°, maintain altitudes, other than flight at MDA or during the final approach segment of a precision approach, ±100', maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. 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:

Instrument Flying Handbook
Chapter 9

Instrument Procedures Handbook
Chapter 4

Aeronautical Information Manual
Chapter 5

Sporty's Instrument Rating Course
Volume 3
Segments Review Segments as Needed

Flight Maneuver Guide
Review Instrument Flight Maneuvers

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.)

ATD/FTD/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.)

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

INSTRUMENT: _____ (In flight only.)

STAGE II
LESSON 39
STAGE II CHECK

DATE_____ ACFT/ATD 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:

Instrument Flying Handbook
Chapter 2
Chapter 9

Instrument Procedures Handbook
Chapter 1-4

Aeronautical Information Manual
Chapter 1
Chapter 4
Chapter 5
Chapter 7

Airman Certification Standards (ACS)
Sporty's Instrument Rating Airman Certification Standards

Sporty's Instrument Rating Course
Vol 1-6: Review Segments as Needed

Flight Maneuver Guide
Review Instrument Flight Maneuvers

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
_____ 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
_____ Flight Deck 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:

Instrument Flying Handbook
Chapter 1
Chapter 10

Instrument Procedures Handbook
Chapter 1-3

Aeronautical Information Manual
Chapter 1
Chapter 4
Chapter 5

Sporty's Instrument Rating Course
Volume 2
Segment 1 - Planning with IFR En Route Charts
Segment 4 - VOR Navigation and Airways

Volume 6
Segment 3 - IFR Communications and ATC Reports
Segment 5 - Lost Communications Procedures

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
_____ Flight Deck 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:

Instrument Flying Handbook
Chapter 1
Chapter 10

Instrument Procedures Handbook
Chapter 1-3

Aeronautical Information Manual
Chapter 1
Chapter 4
Chapter 5

Sporty's Instrument Rating Course
Volume 2
Segments 1-12

Volume 3
Segments 17-18

Volume 4
Segments 1-2

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

DATE_____ ACFT/ATD 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 ±5° en route/±10° on approaches, maintain altitudes, other than flight at MDA or during the final approach segment of a precision approach, ±100', maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. 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:

Instrument Flying Handbook
Chapter 1
Chapter 2
Chapter 9
Chapter 10

Instrument Procedures Handbook
Chapter 1-4

Aeronautical Information Manual
Chapter 1
Chapter 4
Chapter 5

Sporty's Instrument Rating Course
Volume 2
Review Segments as Needed

Volume 3
Review Segments as Needed

Flight Maneuver Guide
Review Instrument Flight Maneuvers

STAGE III
LESSON 43
DUAL - AIRCRAFT
CROSS-COUNTRY

DATE_____ ACFT/ATD 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 ±5° en route/±10° on approaches, maintain altitudes, other than flight at MDA or during the final approach segment of a precision approach, ±100', maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. 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:

Instrument Flying Handbook
Chapter 2
Chapter 9
Chapter 10

Instrument Procedures Handbook
Chapter 1-4

Aeronautical Information Manual
Chapter 4
Chapter 5
Chapter 7

Sporty's Instrument Rating Course
Volume 2
Review Segments as Needed

Volume 3
Review Segments as Needed

Flight Maneuver Guide
Review Instrument Flight Maneuvers

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

DATE_____ ACFT/ATD 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 ±5° en route/±10° on approaches, maintain altitudes, other than flight at MDA or during the final approach segment of a precision approach, ±100', maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. 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

Instrument Flying Handbook
Chapter 2
Chapter 9
Chapter 10

Instrument Procedures Handbook
Chapter 1-4

Aeronautical Information Manual
Chapter 1
Chapter 4
Chapter 5
Chapter 7

Sporty's Instrument Rating Course
Volume 2
Review Segments as Needed

Volume 3
Review Segments as Needed

Volume 4
Review Segments as Needed

Flight Maneuver Guide
Review Instrument Flight Maneuvers

STAGE III
LESSON 45
DUAL - AIRCRAFT
CROSS-COUNTRY

DATE_____ ACFT/ATD 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 ±5° en route/±10° on approaches, maintain altitudes, other than flight at MDA or during the final approach segment of a precision approach, ±100', maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. 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:

Instrument Flying Handbook
Chapter 2
Chapter 9
Chapter 10

Instrument Procedures Handbook
Chapter 1-4

Aeronautical Information Manual
Chapter 1
Chapter 4
Chapter 5

Sporty's Instrument Rating Course
Volume 2
Review Segments as Needed

Volume 3
Review Segments as Needed

Flight Maneuver Guide
Review Instrument Flight Maneuvers

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:

Instrument Flying Handbook
Chapter 2
Chapter 9
Chapter 10

Instrument Procedures Handbook
Chapter 1-4

Aeronautical Information Manual
Chapter 1
Chapter 4
Chapter 5
Chapter 7

Flight Maneuver Guide
Review Instrument Flight Maneuvers

STAGE III
LESSON 47
DUAL - AIRCRAFT
END OF STAGE REVIEW

DATE_____ ACFT/ATD 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.

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.

ADDITIONAL STUDY:

Instrument Flying Handbook
Chapter 2
Chapter 7
Chapter 9
Chapter 10

Instrument Procedures Handbook
Chapter 1-4

Aeronautical Information Manual
Chapter 1
Chapter 4
Chapter 5
Chapter 7

Airman Certification Standards (ACS)
Sporty's Instrument Rating Airman Certification Standards

Sporty's Instrument Rating Course
Review video segments as needed

Flight Maneuver Guide
Review Instrument Flight Maneuvers

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.)

ATD/FTD/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.)

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

INSTRUMENT: _____ (In flight only.)

STAGE III
LESSON 48
STAGE III CHECK

DATE_____ ACFT/ATD 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:

Instrument Flying Handbook

Chapter 2
Chapter 7
Chapter 9
Chapter 10

Instrument Procedures Handbook

Chapter 1-4

Airman Certification Standards (ACS)

Sporty's Instrument Rating Airman Certification Standards

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.

Sporty's Instrument Rating Course

Review video segments as needed

Flight Maneuver Guide

Review Instrument Flight Maneuvers

RECORD OF EXTRA TRAINING

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

STUDENT NAME _____ STUDENT SIGNATURE_____

INSTRUCTOR # _____ INSTRUCTOR SIGNATURE_____

FLIGHT TIME: _____ DISCUSSION: _____

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

CONTENT:

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

RECORD OF EXTRA TRAINING

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

STUDENT NAME _____ STUDENT SIGNATURE_____

INSTRUCTOR # _____ INSTRUCTOR SIGNATURE_____

FLIGHT TIME: _____ DISCUSSION: _____

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

CONTENT:

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

RECORD OF EXTRA TRAINING

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

STUDENT NAME _____ STUDENT SIGNATURE_____

INSTRUCTOR # _____ INSTRUCTOR SIGNATURE_____

FLIGHT TIME: _____ DISCUSSION: _____

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

CONTENT:

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

RECORD OF EXTRA TRAINING

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

STUDENT NAME _____ STUDENT SIGNATURE_____

INSTRUCTOR # _____ INSTRUCTOR SIGNATURE_____

FLIGHT TIME: _____ DISCUSSION: _____

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

CONTENT:

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

RECORD OF EXTRA TRAINING

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

STUDENT NAME _____ STUDENT SIGNATURE_____

INSTRUCTOR # _____ INSTRUCTOR SIGNATURE_____

FLIGHT TIME: _____ DISCUSSION: _____

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

CONTENT:

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

RECORD OF EXTRA TRAINING

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

STUDENT NAME _____ STUDENT SIGNATURE_____

INSTRUCTOR # _____ INSTRUCTOR SIGNATURE_____

FLIGHT TIME: _____ DISCUSSION: _____

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

CONTENT:

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

RECORD OF EXTRA TRAINING

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

STUDENT NAME _____ STUDENT SIGNATURE_____

INSTRUCTOR # _____ INSTRUCTOR SIGNATURE_____

FLIGHT TIME: _____ DISCUSSION: _____

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

CONTENT:

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

RECORD OF EXTRA TRAINING

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

STUDENT NAME _____ STUDENT SIGNATURE_____

INSTRUCTOR # _____ INSTRUCTOR SIGNATURE_____

FLIGHT TIME: _____ DISCUSSION: _____

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

CONTENT:

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

RECORD OF EXTRA TRAINING

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

STUDENT NAME _____ STUDENT SIGNATURE_____

INSTRUCTOR # _____ INSTRUCTOR SIGNATURE_____

FLIGHT TIME: _____ DISCUSSION: _____

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

CONTENT:

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

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 - ATD / FTD

DATE_____ ACFT/ATD 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 ATD or FTD. 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 ±10°, maintain or level off at assigned altitudes ±100', maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°.

ADDITIONAL STUDY:

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

Notes:

STAGE I
LESSON Optional 11a
DUAL - AIRCRAFT

DATE_____ ACFT/ATD 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 ±10°, maintain or level off at assigned altitudes ±100', maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. While tracking a specified NDB course, the student will apply proper correction to maintain the course, allowing no more than ±20° of deviation.

ADDITIONAL STUDY:

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

Notes:

STAGE II
LESSON Optional 24a
DUAL - ATD / FTD

DATE_____ ACFT/ATD 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 or LP)
_____ 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 ±10°, maintain altitudes, other than flight at MDA, ±100', maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. 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 8 & 10
Vol 3: Segments 6-16

Notes:

STAGE II
LESSON Optional 26a
DUAL - AIRCRAFT

DATE_____ ACFT/ATD 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 or LP)
_____ 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 ±10°, maintain altitudes, other than flight at MDA or during the final approach segment of a precision approach, ±100', maintain airspeeds ±10 knots, and maintain turning angles of bank ±5°. 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 8 & 10
Vol 3: Segments 6-16

Notes: _____

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