Instrument Pilot

Training Syllabus

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Course Introduction

The purpose of this syllabus is to outline a suggested timeline of study to ensure the completion of all requirements under 14 CFR Part 61 flight training. This course of study provides a logical, and efficient way to maximize knowledge transfer and utilize the proven Gold Seal method to its full potential during both ground and flight training.

That being said, there is not a one-size-fits-all program that works with flight training. This syllabus can and should be deviated from, at the discretion of the CFII, if there is need for more time or extra review on subject matter.

Course Outline:

This course is broken into 3 phases.

Phase 1 – Instrument Fundamentals
Phase 2 – Cross-Country Planning & Approaches
Phase 3 – Checkride Prep

Each phase is broken into a series of lessons that include a flight component and a ground component. The flight component is to be accomplished with a Certificated Flight Instructor, in the location and aircraft of the students choosing. The ground school component will be accomplished by enrolling in Gold Seal's Instrument Pilot program at www.GroundSchool.com.

Get the most out of this course:

COME PREPARED!

Plan to block at least 0.5 hours before and after your scheduled training flights. During pre-flight this allows the opportunity to go over the previous lesson material and a briefing for that day's flight. Post-flight it will allow for a proper debrief and preparation for the lesson to come.

Make sure all required reading, quizzes, and homework are completed before showing up for a training flight. The cockpit is not a good classroom. Being prepared will save both time and money.

Allow for changes in pace. Every student learns at different speeds, and comparing one timeline to the next is not helpful. Goals are good and should be strived for, but not at the expense of safety.

The mastery of a subject will be determined by the CFI. Students will be evaluated on an individual basis, and endorsed based on their CFI's discretion.

For flight maneuvers being introduced to the student, there are no completion standards laid out for the student. There is a box to check when the maneuver has been demonstrated.

After a maneuver has been introduced and demonstrated to the student, the student will attempt the maneuver themselves. The student's performance will be rated on a 4-point grading scale.

The 4-Point Grading Scale:

In accordance with the guidelines set forth in the Instrument Rating Airman Certification Standards (ACS), instructors will collect pilot performance data using a 4-point grading (rating) scale. These ratings will apply to all maneuvers that have previously been introduced and demonstrated. The scale values are as follows:

Rating of 4 = Above Standard

Proficiency with the maneuver consistently exceeds the Instrument Rating ACS standards. The task rated as a 4 was performed in such a manner as to demonstrate a high level of operational knowledge and skill by the pilot for a particular maneuver.

Indicators of "Above Standard" (4) performance:

- Meets or exceeds ACS standards. No errors.
- Threats managed and margin of safety clear and never in doubt.
- Demonstrates advanced levels of technical proficiency and depth of knowledge.
- Behavior indicates continuous and highly accurate situational awareness.
- Efficient use of all resources.
- Aircraft handling is smooth and precise.

Rating of 3 = Standard

Proficiency meets ACS standards which allows for momentary deviations from the standard. A task rated as a 3 was performed satisfactorily with only minor errors observed, and the individual recognized and corrected the error without assistance.

Indicators of "standard" (3) performance:

- Meets ACS standards. Errors trapped and remediated without intervention.
- Threats managed and undesired states avoided. Margin of safety maintained.
- Technical skills and knowledge meet the required level of competency.
- Situational awareness maintained.
- Aircraft handling is effective

The instructor will inform the pilot of the minor errors noted.

Rating of 2 = Acceptable – With a debrief

Proficiency intermittently falls below standards, requiring a debrief with the student. A task rated as a 2 was performed within safe parameters, but errors in procedure and/or aircraft handling were noted. The task may have been performed with momentary transgressions of the established ACS standards.

Indicators of “Acceptable – With a debrief” (2) performance:

- Deviations from ACS standards occur. Errors are corrected by the student in a timely manner.
- Undesired states occur but are managed. Safety of flight is not affected.
- Technical skills and knowledge reveal limited technical proficiency or depth of knowledge
- Situational awareness lapses that are identified and corrected.
- Flight management skills are effective, but slightly below standard.
- Some items are addressed only when challenged or prompted by the instructor.
- Aircraft handling is uncoordinated.
- Did not contribute to the assessment of the situation or development of a course of action.

The instructor shall debrief the student regarding this task performance.

Rating of 1 = Unsatisfactory

The outcome of the maneuver is in doubt; proficiency consistently falls below ACS standards. A task rated as a 1 is clearly unsatisfactory. The task was performed in an unsafe manner and clearly outside of the established certification standards.

Indicators of “Unsatisfactory” (1) performance:

- Unacceptable deviations from the ACS standards. Errors not recognized or corrected.
- Threats not managed. Safety of flight affected.
- Technical skills and knowledge reveal unacceptable levels of technical proficiency and/or depth of knowledge.
- Lapses in situational awareness that are not identified or corrected by the student.
- Flight management skills are ineffective.
- Aircraft handling is ineffective.

Course Instructions:

For each lesson there will be an objective, introductions, required flight tasks, required ground study, and quizzes. The order in which the flight portions are accomplished are at the CFII's discretion, but these are all tasks that must be accomplished to meet the required Instrument Rating Airmen Certification Standards.

The objective will be the ultimate goal of the lesson and the determining factor as to whether the student is ready to move on to the next lesson or not.

The introductions are new tasks to be shown to the student. The student is not expected to be held to any standards when seeing and attempting these for the first time.

Required flight tasks are intended to be graded in accordance with the standards laid out in the Instrument Rating Airman Certification Standards.

Required ground study and quizzes will be in association with the student's enrollment in Gold Seal's Instrument Pilot Program. Students will log in to www.GroundSchool.com to accomplish the correct Section and Module assigned for that lesson and take any associated quizzes.

The instructor will monitor the student's progress and quiz results from Gold Seal's "Instructor Portal".

Suggested Equipment:

- Flight Bag (small duffel or backpack will work fine)
- Paper or Digital Logbook (US Standard)
- E6B Flight Computer
- Plotter
- Current Enroute Charts and Terminal Procedures Publications
- Current FAR/AIM
- Kneeboard
- Headset
- View Limiting Device (E.G. "Foggles")
- FAA Instrument Flying Handbook (digital or paper)

Simulator Usage For Instrument Rating:

Although not required, the use of simulators for Instrument training can be an incredible resource. It allows you to stop, reset, and talk about things. The airplane is not a good classroom, and the FAA allows for a certain amount of time to count towards your initial Instrument Rating as well as maintaining Instrument Currency in the future.

The hours allowed to be logged toward your Instrument Rating hour requirements depend on whether you are training Part 61 or Part 141. They are as follows…

Part 61:

- BATD: Maximum of 10 hours
- AATD: Maximum of 20 hours
- Combination of FFS, FTD, ATD: Maximum of 20 hours

- The device must be approved and authorized by the FAA.
- The FAA must approve the instrument training and instrument tasks performed in the device.
- An authorized instructor must provide the instrument time in the device.

Part 141:

- FFS: Up to 50% of the required course hours can be logged
- FTD: Up to 40% of the required course hours can be logged
- AATD: Up to 40% of the required course hours can be logged
- BATD: Up to 25% of the required course hours can be logged
- Combination of ATD and FTD: Up to 40% of the required course can be logged
- Combination of FFS, FTD, and ATD: Up to 50% of the required course hours can be logged

- The device must be approved and authorized by the FAA.
- The FAA must approve the instrument training and instrument tasks performed in the devise.
- An authorized instructor must provide the instrument time in the device.
- The ATD must be used in conjunction with an FAA-approved integrated ground and flight instrument training syllabus.

Simulator Types and Definitions:

Types of simulators approved for Instrument training:

- FFS: Full Flight Simulator
- FTD: Flight Training Device
- ATD: Aviation Training Device
- BATD: Basic Aviation Training Device
- AATD: Advanced Aviation Training Device

Full Flight Simulator (FFS):

- Full-size cockpit replica of a specific type of aircraft, or make, model, and series of aircraft.
- Includes the hardware and software necessary to represent the aircraft in ground and flight operations.
- Uses a force cueing system that provides cues at least equivalent to those cues provided by a 3 degree freedom-of-motion system.
- Uses a visual system that provides at least a 45 degree horizontal field of view and a 30 degree vertical field of view simultaneously for each pilot.
- Has been evaluated, qualified, and approved by the FAA in accordance with *14 CFR 61.4(a)* includes FFS levels A through D

Flight Training Device (FTD):

- Full-size replica of the instruments, equipment panels, and controls of an aircraft in an open flight deck area or in an enclosed cockpit, including the hardware and software for the systems installed that are necessary to simulate the aircraft in ground and flight operations.
- Need to have a force (motion) cueing or visual system
- Has been evaluated, qualified, and approved by the FAA, or has been authorized for specific use under *14 CFR 61.4(a) or (b)*, as appropriate.
- Includes levels 4 through 7 (for airplane)

Aviation Training Device (ATD):

- Includes a replica of aircraft instruments, equipment, panels, and controls in an open flight deck area or an enclosed aircraft cockpit.
- It includes the hardware and software necessary to represent a category and class of aircraft (or set of aircraft) operations in ground and flight conditions having the appropriate range of capabilities and systems installed in the device for the specific Basic or Advanced qualification level.
- ATDs cannot be used for practical tests, aircraft type specific training, or for an aircraft type rating.

Basic Aviation Training Device (BATD):

- Meets minimum acceptable criteria of *AC 61-136B, Appendix B, BATD*.
- Provides an adequate training platform and design for both procedural and operational performance tasks specific to the ground and flight training requirements for Private Pilot Certificate and Instrument Rating per 14 CFR Parts 61 and 141.
- Provides an adequate platform for both procedural and operational performance tasks required for instrument experience and pilot time.
- The FAA finds acceptable in a manner described in *AC 61-136B*.

Advanced Aviation Training Device (AATD):

- Meets or exceeds the criteria outlined in *AC 61-136B, Appendix B, BATD*
- Meets or exceeds the criteria outlined in *AC 61-136B, Appendix C, AATD*
- Provides an adequate training platform for both procedural and operational performance tasks specific to the ground and flight training requirements for Private Pilot Certificate, Instrument Rating, Commercial Pilot Certificate, Airline Transport Pilot (ATP) Certificate, and Flight Instructor Certificates per Parts 61 and 141.
- Provides an adequate platform and design for both procedural and operational performances tasks required for instrument experience, the instrument proficiency check, and pilot time.
- The FAA finds acceptable in a manner described in *AC 61-136B*
- May be used for some of the required tasks of an Instrument Proficiency Check (IPC)

Seven Configurations of Instrument Flight

This planning table should be accomplished during the first Phase of Instrument training, and should be done with the help of a CFII.

Filling this out early allows for continuity and planning for each phase of flight and should be referenced on every flight until memorized.

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Phase of Flight	Pitch	Power (MP/RPM)	Airspeed	VSI
Initial Climb (Based on 200 ft per NM)				
Cruise Climb				
Cruise Level				0
Cruise Descent				
Approach Level				0
Precision Approach Descent				
Non-Precision Approach Descent				

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Phase 1
Lesson 1
DUAL LOCAL

Date: _____ Aircraft: _____ Airport(s): _____

Student Name: _____

Instructor Name & #: _____

Dual: _____ Solo: _____ X-Country: _____ Instrument: _____

Lesson Objective:

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

Lesson Content:

____ Review Altimeter
____ Review Types of Altitude
____ Review Vertical Speed Indicator
____ Review Types of Airspeed
____ Review Pitot-Static Instrument Errors
____ Review Attitude Indicator
____ Review Gyro Driven Heading Indicator
____ Review Turn Coordinator
____ Review Turn and Bank Indicator
____ Review Slip and Skid Indicator
____ Review Gyroscopic Instrument Errors
____ Review Glass Panel Flight Displays
____ Review Traditional Instrument Displays

Required Study:

_____ Section 1: Introduction - Watch this first!
_____ Section 1: Gyroscopic Instruments
_____ Section 1: Pitot-Static Instruments
_____ Section 1: Types of Altitude

Quizzes:

_____% Gyroscopic Instruments
_____% Pitot-Static Instruments
_____% Types of Altitude

Student Signature: _____ **Instructor Signature:** _____

Phase 1

Lesson 2

GROUND

Date: _____

Student Name: _____

Instructor Name & #: _____

Ground: _____

Lesson Objective:

During this lesson, the student will be introduced to concepts related to aircraft control under Instrument conditions.

Lesson Content:

____ Intro to Instrument Scan
____ Intro to Instrument Cross-Check
____ Intro to Instrument Interpretation
____ Intro to Aircraft Control
____ Intro to Performance Instruments
____ Intro to Control Instruments
____ Intro to Primary and Supporting Instruments

Required Study:

_____ Section 1: Aircraft Requirements
_____ Section 1: Primary and Supporting Instruments
_____ Section 1: Three Fundamental Skills

Quizzes:

_____% Primary and Supporting Instruments

Student Signature: _____ **Instructor Signature:** _____

Phase 1

Lesson 3

DUAL LOCAL

Date: _____ Aircraft: _____ Airport(s): _____

Student Name: _____

Instructor Name & #: _____

Dual: _____ Solo: _____ X-Country: _____ Instrument: _____

Lesson Objective:

During this lesson, the student will be introduced to constant rate climbs and descents, steep turns, and climbing and descending turns while in simulated instrument conditions. The instructor will assist the student fill out performance table for the training aircraft (Located on page 8).

Lesson Content:

____ Intro to Straight-and-Level Flight
____ Intro to Constant-Rate Climbs
____ Intro to Constant-Rate Descents
____ Intro to Constant-Airspeed Climbs
____ Intro to Constant-Airspeed Descents
____ Intro to Climbing Turns
____ Intro to Descending Turns
____ Intro to Level - Offs
____ Intro to Steep Turns

Required Study:

_____ Section 1: National Airspace System
_____ Section 1: Instrument Preflight

Quizzes:

_____% National Airspace System
_____% Instrument Preflight

Student Signature: _____ **Instructor Signature:** _____

Phase 1

Lesson 4

GROUND

Date: _____

Student Name: _____

Instructor Name & #: _____

Ground: _____

Lesson Objective:

During this lesson, the student will review the magnetic compass and standard rate turns.

Lesson Content:

____ Intro to Magnetic Compass Construction
____ Intro to Principles of Magnetic Attraction
____ Intro to Magnetic Dip
____ Intro to Magnetic Variation
____ Intro to Magnetic Deviation
____ Intro to Northerly Turning Errors
____ Intro to Acceleration Errors
____ Intro to Turns to Magnetic Compass Headings
____ Intro to Emergency Alternatives to Magnetic Compass Turns
____ Intro to Calibrated Turn Coordinator
____ Intro to Timed Turns
____ Intro to Partial Panel Instrument Flight
____ Intro to Unusual Attitude Recovery

Required Study:

_____ Section 2: Magnetic Compass
_____ Section 1: Unusual Attitude Recoveries

Quizzes:

_____% Magnetic Compass
_____% Unusual Attitude Recoveries

Student Signature: _____ **Instructor Signature:** _____

Phase 1
Lesson 5
DUAL LOCAL

Date: _____ Aircraft: _____ Airport(s): _____

Student Name: _____

Instructor Name & #: _____

Dual: _____ Solo: _____ X-Country: _____ Instrument: _____

Lesson Objective:

During this lesson, the student will be introduced to instrument pre-flight procedures, the instrument scan, and basic attitude instrument flying.

Lesson Content:

____ Intro to Instrument Pre-Flight
____ Intro to Instrument Scan

Flight Tasks:

- Straight-and-Level Flight 1 2 3 4
- Constant-Speed Climbs 1 2 3 4
- Constant-Speed Descents 1 2 3 4
- Constant-Rate Climbs 1 2 3 4
- Constant-Rate Descents 1 2 3 4
- Level-Offs and Trim Usage 1 2 3 4
- Climbing Turns 1 2 3 4
- Climbing Descents 1 2 3 4

Required Study:

_____ Section 1: Pilot Requirements
_____ Section 1: Currency Requirements

Quizzes:

_____% Currency Requirements

Student Signature: _____ **Instructor Signature:** _____

Phase 1
Lesson 6
DUAL LOCAL

Date: _____ Aircraft: _____ Airport(s): _____

Student Name: _____

Instructor Name & #: _____

Dual: _____ Solo: _____ X-Country: _____ Instrument: _____

Lesson Objective:

During this lesson, the student will be introduced to magnetic compass turns, timed turns, partial panel instrument flight, and unusual flight attitude recoveries. Simulation of realistic and unexpected system failures, as well as emergency alternatives to magnetic compass turns.

Lesson Content:

____ Intro to Timed Turns
____ Intro to Magnetic Course Turns
____ Intro to Partial Panel Flight
____ Intro to Instrument Failures
____ Intro to Unusual Attitudes - Partial Panel
____ Intro to Unusual Attitudes - Full Panel
____ Intro to Emergency Alternatives to Compass

Flight Tasks:

- Instrument Scan 1 2 3 4
- Instrument Preflight Inspection 1 2 3 4

Required Study:

_____ Section 2: TAA Technically Advanced Airplanes

Quizzes:

_____% TAA Technically Advanced Airplanes

Student Signature: _____ **Instructor Signature:** _____

Phase 1

Lesson 7

DUAL LOCAL

Date: _____ Aircraft: _____ Airport(s): _____

Student Name: _____

Instructor Name & #: _____

Dual: _____ Solo: _____ X-Country: _____ Instrument: _____

Lesson Objective:

During this lesson, the student will review partial panel instrument flight, unusual attitude recoveries, unexpected system failures, instrument scans, and performance table.

Lesson Content:

Flight Tasks:

- Magnetic Course Turns 1 2 3 4
- Instrument Failures 1 2 3 4
- Unusual Attitudes - Full Panel 1 2 3 4
- Unusual Attitudes - Partial Panel 1 2 3 4
- Instrument Scan 1 2 3 4
- Steep Turns 1 2 3 4
- Standard Rate Turns 1 2 3 4

Required Study:

_____ Section 2: HSI - The Horizontal Situation Indicator

Quizzes:

_____% HSI - The Horizontal Situation Indicator

Student Signature: _____ **Instructor Signature:** _____

Phase 1
Lesson 8
DUAL LOCAL

Date: _____ Aircraft: _____ Airport(s): _____

Student Name: _____

Instructor Name & #: _____

Dual: _____ Solo: _____ X-Country: _____ Instrument: _____

Lesson Objective:

During this lesson, the student will review all basics of attitude flight using a view limiting device.

Flight Tasks:

- Instrument Pre-Flight 1 2 3 4
- Constant Rate Climbs 1 2 3 4
- Constant Rate Descents 1 2 3 4
- Constant Speed Climbs 1 2 3 4
- Constant Speed Descents 1 2 3 4
- Climbing Turns 1 2 3 4
- Descending Turns 1 2 3 4
- Magnetic Course Turns 1 2 3 4
- Instrument Failures 1 2 3 4
- Unusual Attitudes - Full Panel 1 2 3 4
- Unusual Attitudes - Partial Panel 1 2 3 4
- Standard Rate Turns 1 2 3 4
- Level Offs 1 2 3 4
- Straight-And-Level 1 2 3 4
- Instrument Scan 1 2 3 4

Required Study:

_____ Section 3: Airport Diagrams

_____ Section 3: Runway Signs and Markings

Quizzes:

_____% Airport Diagrams

_____% Runway Signs and Markings

Student Signature: _____ **Instructor Signature:** _____

Phase 1

Lesson 8.5

DUAL LOCAL

Date: _____ Aircraft: _____ Airport(s): _____

Student Name: _____

Instructor Name & #: _____

Dual: _____ Solo: _____ X-Country: _____ Instrument: _____

Lesson Objective:

Optional lesson based on access to aircraft automation

During this lesson, the student will be introduced to the principles of automation and autopilot operation.

Lesson Content:

____ Intro to Principles of Automation
____ Intro to Autopilot Disconnect Options
____ Intro to Autopilot Limitations
____ Intro to Autopilot Usage
____ Intro to Disconnect Options
____ Intro to Autopilot Specific Features
____ Intro to Control Wheel Steering

Required Study:

None

Quizzes:

None

Student Signature: _____ **Instructor Signature:** _____

Phase 1

Lesson 9

GROUND

Date: _____

Student Name: _____

Instructor Name & #: _____

Ground: _____

Lesson Objective:

During this lesson, the student will review and discuss VOR fundamentals.

Lesson Content:

____ Intro to VOR Principles of Operation
____ Intro to VOR Transmitters and Receivers
____ Intro to VOR Frequency Ranges
____ Intro to VOR Class Designations and Service Volumes
____ Intro to VOR Errors and Irregularities
____ Intro to VOR Tuning and Identifying
____ Intro to VOR Orientation
____ Intro to VOR Intercepting
____ Intro to VOR Tracking
____ Intro to VOR Tracking and Wind Correction Techniques
____ Intro to VOR Station Passage

Required Study:

_____ Section 2: VOR Operations - Part 1

Quizzes:

None

Student Signature: _____ **Instructor Signature:** _____

Phase 1
Lesson 10
DUAL LOCAL

Date: _____ Aircraft: _____ Airport(s): _____

Student Name: _____

Instructor Name & #: _____

Dual: _____ Solo: _____ X-Country: _____ Instrument: _____

Lesson Objective:

During this lesson, the student will be introduced to VOR procedures.

Lesson Content:

_____ Intro to VOR Tuning and Identifying
_____ Intro to VOR Orientation, Position, and Station Passage
_____ Intro to VOR Radial Intercepting and Tracking
_____ Intro to VOR Tracking Wind Corrections
_____ Intro to VOR Airborne Checks

Required Study:

_____ Section 2: VOR Operations - Part 2

Quizzes:

None

Student Signature: _____ **Instructor Signature:** _____

Phase 1
Lesson 11
DUAL LOCAL

Date: _____ Aircraft: _____ Airport(s): _____

Student Name: _____

Instructor Name & #: _____

Dual: _____ Solo: _____ X-Country: _____ Instrument: _____

Lesson Objective:

During this lesson, the student will review all basics of VOR procedures in the training aircraft.

Flight Tasks:

- VOR Tuning and Identifying 1 2 3 4
- VOR Station Passage 1 2 3 4
- VOR Orientation and Position 1 2 3 4
- VOR Radial Intercepting and Tracking 1 2 3 4
- VOR Tracking Wind Correction 1 2 3 4
- VOR Tracking TO and FROM 1 2 3 4
- VOR Airborne Checks 1 2 3 4

Required Study:

_____ Section 2: VOR Operations - Part 3

Quizzes:

_____% VOR Operations - Part 3

Student Signature: _____ **Instructor Signature:** _____

Phase 1

Lesson 12

GROUND

Date: _____

Student Name: _____

Instructor Name & #: _____

Ground: _____

Lesson Objective:

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

Lesson Content:

____ Intro to GPS Principles of Operation
____ Intro to GPS Modes of Operation
____ Intro to GPS Errors and Irregularities
____ Intro to Wide Area Augmentation System (WAAS)
____ Intro to Receiver Autonomous Integrity Monitoring (RAIM)
____ Intro to GPS Use Under IFR
____ Intro to CDI Scaling (Enroute, Terminal, and Approach)
____ Intro to GPS Waypoints
____ Intro to GPS Direct-To Operations
____ Intro to GPS Nearest Functions
____ Intro to Substitution of GPS For Other Navigation Aids
____ Intro to Orientation, Position, and Passage
____ Intro to Waypoint Sequencing
____ Intro to Computer/ App-Based Procedures

Required Study:

_____ Section 2: GPS Overview
_____ Section 2: GPS Navigation - Part 1

Quizzes:

None

Student Signature: _____ **Instructor Signature:** _____

Phase 1
Lesson 13
DUAL LOCAL

Date: _____ Aircraft: _____ Airport(s): _____

Student Name: _____

Instructor Name & #: _____

Dual: _____ Solo: _____ X-Country: _____ Instrument: _____

Lesson Objective:

During this lesson, the student will be introduced to GPS procedures and VOR procedures will be reviewed.

Lesson Content:

____ Intro to GPS Direct-To Operations
____ Intro to GPS Flight Plan Operations
____ Intro to GPS Nearest Function
____ Intro to GPS Orientation and Position
____ Intro to Installed GPS-Specific Procedures
____ Intro to GPS Course Intercepting and Tracking
____ Intro to GPS Waypoint Passage

Flight Tasks:

- VOR Tuning and Identifying 1 2 3 4
- VOR Station Passage 1 2 3 4
- VOR Orientation and Position 1 2 3 4
- VOR Radial Intercepting and Tracking 1 2 3 4
- VOR Tracking Wind Corrections 1 2 3 4
- VOR Airborne Checks 1 2 3 4

Required Study:

_____ Section 2: GPS Navigation - Part 2

Quizzes:

_____% GPS Navigation - Part 2

Student Signature: _____ **Instructor Signature:** _____

Phase 1

Lesson 14

GROUND

Date: _____

Student Name: _____

Instructor Name & #: _____

Ground: _____

Lesson Objective:

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

Lesson Content:

____ Intro to 14 CFR Regulations - Applicable to IFR
____ Intro to Part 1
____ Intro to Part 43
____ Intro to Part 61
____ Intro to Part 91
____ Intro to Part 97
____ Intro to NTSB 830
____ Intro to AIM - Chapters Applicable to IFR Flight
____ Intro to Chapter 1
____ Intro to Chapter 2
____ Intro to Chapter 3
____ Intro to Chapter 4
____ Intro to Chapter 5
____ Intro to Chapter 6
____ Intro to Chapter 7

Required Study:

_____ Section 8: Pilot Regulations

Quizzes:

_____% Pilot Regulations

Student Signature: _____ **Instructor Signature:** _____

Phase 1
Lesson 15
DUAL LOCAL

Date: _____ Aircraft: _____ Airport(s): _____

Student Name: _____

Instructor Name & #: _____

Dual: _____ Solo: _____ X-Country: _____ Instrument: _____

Lesson Objective:

PHASE CHECK: Phase 1

During this lesson, the student will complete an Instrument Phase 1 assessment. All maneuvers must be scored as a "3" or higher to continue. Upon successful completion of this phase check, the student will be cleared to advance to Phase 2.

Flight Tasks:

- Instrument Pre-Flight 1 2 3 4
- Instrument Flight Deck Check 1 2 3 4
- Instrument Aircraft Systems 1 2 3 4
- Aircraft Flight Instruments 1 2 3 4
- IFR Required Equipment 1 2 3 4
- Inspection Requirements for IFR Flight 1 2 3 4
- Control and Performance Instruments 1 2 3 4
- Primary and Supporting Instruments 1 2 3 4
- Magnetic Compass Errors 1 2 3 4
- Instrument Take Off 1 2 3 4
- Steep Turns 1 2 3 4
- Unusual Attitude Recovery 1 2 3 4
- VOR Procedures 1 2 3 4
- GPS Procedures 1 2 3 4
- Partial Panel Instrument Flight 1 2 3 4
- Autopilot Procedures 1 2 3 4

Required Study:

_____ Section 8: Plane Regulations

Quizzes:

_____% Plane Regulations

Student Signature: _____ **Instructor Signature:** _____

Phase 2

Lesson 1

GROUND

Date: _____

Student Name: _____

Instructor Name & #: _____

Ground: _____

Lesson Objective:

During this lesson, the student will be introduced to Terminal Procedures Publications.

Lesson Content:

____ Intro to Terminal Procedures Publication
____ Intro to Aircraft Approach Categories
____ Intro to Inoperative Instrument Components
____ Intro to Airport Surface Hot Spots
____ Intro to IFR Take-Off Minimums
____ Intro to Declared Distance Information
____ Intro to Published Departure Procedures
____ Intro to "Climb via SID" Clearance
____ Intro to ATC Communication
____ Intro to Situational Awareness During Departure
____ Intro to Climb and Descent Tables
____ Intro to FIR Alternate Minimums
____ Intro to Radar Instrument Approach Mins.
____ Intro to Pilot Briefing Section
____ Intro to Plan View
____ Intro to Profile View
____ Intro to Airport Diagram
____ Intro to Missed Approach Section
____ Intro to Circling Radius
____ Intro to Descent Planning
____ Intro to Standard Terminal Arrivals
____ Intro to "Descend via STAR" Clearance

Required Study:

_____ Section 5: Approach Charts - Overview
_____ Section 3: Instrument Departures
_____ Section 3: Instrument Arrivals

Quizzes:

_____% Approach Charts - Overview
_____% Instrument Departures
_____% Instrument Arrivals

Student Signature: _____ **Instructor Signature:** _____

Phase 2

Lesson 2

DUAL LOCAL

Date: _____ Aircraft: _____ Airport(s): _____

Student Name: _____

Instructor Name & #: _____

Dual: _____ Solo: _____ X-Country: _____ Instrument: _____

Lesson Objective:

During this lesson, the student will be introduced to the instrument landing system and instrument approaches.

Lesson Content:

____ Intro to Localizer Principles of Operation
____ Intro to Glideslope Principles of Operation
____ Intro to Marker Beacons
____ Intro to ILS Receiving Equipment
____ Intro to ILS Categories
____ Intro to ILS Errors and Irregularities
____ Intro to Localizer and Glideslope Critical Areas
____ Intro to Simplified Directional Facility
____ Intro to Localizer-Type Directional Aid
____ Intro to Precision Instrument Approaches
____ Intro to Back Course Approaches
____ Intro to APV Instrument Approaches

Required Study:

_____ Section 2: The Runway Localizer
_____ Section 2: ILS - Instrument Landing System
_____ Section 3: Runway Lighting Systems

Quizzes:

_____% The Runway Localizer
_____% ILS Instrument Landing System
_____% Runway Lighting Systems

Student Signature: _____ **Instructor Signature:** _____

Phase 2
Lesson 3
DUAL LOCAL

Date: _____ Aircraft: _____ Airport(s): _____

Student Name: _____

Instructor Name & #: _____

Dual: _____ Solo: _____ X-Country: _____ Instrument: _____

Lesson Objective:

During this lesson, the student will be introduced to ILS and back course approach procedures.

Lesson Content:

____ Intro to ILS Approach (full and vectored)
____ Intro to Landing From an ILS Approach
____ Intro to Back Course Approach
____ Intro to Missed Approach Procedures

Required Study:

_____ Section 5: Missed Approaches
_____ Section 5: Precision, Non-Precision, and APV

Quizzes:

_____% Missed Approaches

Student Signature: _____ **Instructor Signature:** _____

Phase 2
Lesson 4
DUAL LOCAL

Date: _____ Aircraft: _____ Airport(s): _____

Student Name: _____

Instructor Name & #: _____

Dual: _____ Solo: _____ X-Country: _____ Instrument: _____

Lesson Objective:

During this lesson, the student will be introduced to various types of instrument approaches without a glideslope or vertical navigation. The student will also review ILS procedures.

Lesson Content:

____ Intro to Non-Precision Approaches
____ Intro to Approach Briefing
____ Intro to Timed Approaches
____ Intro to Radar Approaches
____ Intro to Visual Approaches
____ Intro to Contact Approaches
____ Intro to VOR Approaches
____ Intro to Charted Visual Procedures
____ Intro to Visual Descent Point
____ Intro to Circling Approaches
____ Intro to Vectored Approaches
____ Intro to Instrument Lighting Systems

Flight Tasks:

- ILS Approach Full Procedure 1 2 3 4
- ILS Approach Vectored 1 2 3 4
- Back Course Approach 1 2 3 4
- Missed Approach Procedure 1 2 3 4

Required Study:

_____ Section 5: Approach Minimums - Part 1
_____ Section 5: Approach Minimums - Part 2

Quizzes:

_____% Approach Minimums - Part 2

Student Signature: _____ **Instructor Signature:** _____

Phase 2
Lesson 5
DUAL LOCAL

Date: _____ Aircraft: _____ Airport(s): _____

Student Name: _____

Instructor Name & #: _____

Dual: _____ Solo: _____ X-Country: _____ Instrument: _____

Lesson Objective:

During this lesson, the student will be introduced to GPS approaches. The student will also review non-precision approaches.

Lesson Content:

____ Intro to GPS Approach (LNAV)
____ Intro to GPS Approach (LNAV/VNAV)
____ Intro to Departure Vectors To Filed Route
____ Intro to Climb Via SID Operations
____ Intro to Terminal IFR Navigation
____ Intro to Approach Setup and Briefing
____ Intro to Landing From an Approach
____ Intro to ATC Communication

Flight Tasks:

- VOR Approach 1 2 3 4
- Timed Approach 1 2 3 4
- Localizer Approach 1 2 3 4
- Missed Approach Procedure 1 2 3 4
- Visual Approach 1 2 3 4

Required Study:

_____ Section 5: Visual and Contact Approaches

Quizzes:

_____% Visual and Contact Approaches

Student Signature: _____ **Instructor Signature:** _____

Phase 2

Lesson 6

DUAL LOCAL

Date: _____ Aircraft: _____ Airport(s): _____

Student Name: _____

Instructor Name & #: _____

Dual: _____ Solo: _____ X-Country: _____ Instrument: _____

Lesson Objective:

During this lesson, the student will be introduced to DME and DME Arcs. The student will also review GPS approaches.

Lesson Content:

____ Intro to DME Principles of Operation
____ Intro to DME Errors and Irregularities
____ Intro to DME Arc Intercepting
____ Intro to DME Arc Tracking
____ Intro to GPS as a Substitute for DME
____ Intro to Partial Panel Instrument Approaches

Flight Tasks:

• GPS Approach (LNAV)	1 2 3 4
• GPS Approach (LNAV/ VNAV)	1 2 3 4
• Missed Approach	1 2 3 4
• Landing From an Approach	1 2 3 4

Required Study:

_____ Section 3: Hydroplaning
_____ Section 2: DME - Distance Measuring Equipment

Quizzes:

_____% Hydroplaning
_____% DME - Distance Measuring Equipment

Student Signature: _____ **Instructor Signature:** _____

Phase 2
Lesson 7
DUAL LOCAL

Date: _____ Aircraft: _____ Airport(s): _____

Student Name: _____

Instructor Name & #: _____

Dual: _____ Solo: _____ X-Country: _____ Instrument: _____

Lesson Objective:

During this lesson, the student will be introduced to circle to land procedures. The student will also review DME Arcs and partial panel approaches.

Lesson Content:

____ Intro to Circling Minimums
____ Intro to Circling Approach
____ Intro to Precision to "Circle to Land" Approach

Flight Tasks:

- DME Arc Intercepting 1 2 3 4
- DME Arc Tracking 1 2 3 4
- Partial Panel Precision Approach 1 2 3 4
- Partial Panel Non-Precision Approach 1 2 3 4

Required Study:

_____ Section 3: Departure Clearances

Quizzes:

_____% Departure Clearances

Student Signature: _____ **Instructor Signature:** _____

Phase 2

Lesson 8

GROUND

Date: _____

Student Name: _____

Instructor Name & #: _____

Ground: _____

Lesson Objective:

During this lesson, the student will be introduced to aeromedical factors.

Lesson Content:

____ Intro to Visual Illusions
____ Intro to Hypoxic Hypoxia
____ Intro to Stagnant Hypoxia
____ Intro to Hypemic Hypoxia
____ Intro to Histotoxic Hypoxia
____ Intro to Oxygen Requirements
____ Intro to Spatial Disorientation

Required Study:

_____ Section 7: Optical Illusions
_____ Section 7: Hypoxia and Hyperventilation

Quizzes:

_____% Optical Illusions
_____% Hypoxia and Hyperventilation

Student Signature: _____ **Instructor Signature:** _____

Phase 2
Lesson 9
DUAL LOCAL

Date: _____ Aircraft: _____ Airport(s): _____

Student Name: _____

Instructor Name & #: _____

Dual: _____ Solo: _____ X-Country: _____ Instrument: _____

Lesson Objective:

During this lesson, the student will be introduced to standard terminal arrivals. The student will also review ILS, back course, GPS, VOR, and APV approach procedures.

Lesson Content:

____ Intro to Standard Terminal Arrivals (STARs)

Flight Tasks:

• ILS Approach	1 2 3 4
• Back Course Approach	1 2 3 4
• RNAV Approach (LPV)	1 2 3 4
• RNAV Approach (LNAV/ VNAV)	1 2 3 4
• ATC Communications	1 2 3 4
• Terminal IFR Navigation	1 2 3 4
• Approach Set Up and Brief	1 2 3 4
• VOR Approach	1 2 3 4
• RNAV Approach (LNAV)	1 2 3 4
• Missed Approach Procedures	1 2 3 4

Required Study:

_____ Section 3: Wake Turbulence Avoidance

Quizzes:

_____% Wake Turbulence Avoidance

Student Signature: _____ **Instructor Signature:** _____

Phase 2

Lesson 10

GROUND

Date: _____

Student Name: _____

Instructor Name & #: _____

Ground: _____

Lesson Objective:

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

Lesson Content:

____ Intro to Holding
____ Intro to Purposes of Holding
____ Intro to Published Holds
____ Intro to Legs of a Holding Pattern
____ Intro to Standard vs. Non-Standard Holds
____ Intro to Maximum Holding Speeds
____ Intro to Hold Entry Procedures
____ Intro to Holding With Wind Corrections
____ Intro to Holding Clearances
____ Intro to Fix Crossing Check (5T's)
____ Intro to Timing in a Hold
____ Intro to Use of DME While Holding
____ Intro to Use of GPS While Holding
____ Intro to Intersection Holding
____ Intro to Hold Required Calls
____ Intro to ATC Clearances
____ Intro to Clearance Compliance
____ Intro to Standard Terminal Arrivals

Required Study:

_____ Section 4: Holding Procedures - Part 1
_____ Section 4: Holding Procedures - Part 2

Quizzes:

_____% Holding Procedures - Part 2

Student Signature: _____ **Instructor Signature:** _____

Phase 2
Lesson 11
DUAL LOCAL

Date: _____ Aircraft: _____ Airport(s): _____

Student Name: _____

Instructor Name & #: _____

Dual: _____ Solo: _____ X-Country: _____ Instrument: _____

Lesson Objective:

During this lesson, the student will be introduced to holding procedures and IFR clearances. The student will also review precision and non-precision approaches.

Lesson Content:

____ Intro to Holding Procedures
____ Intro to Hold Entry Procedures
____ Intro to Holding Wind Corrections
____ Intro to DME Usage in a Hold
____ Intro to Required Reporting in a Hold
____ Intro to Departure Clearances
____ Intro to Standard Take Off Minimums
____ Intro to Obstacle Departure Procedures

Flight Tasks:

• ATC Communication	1 2 3 4
• ATC Clearances	1 2 3 4
• Climb Via SID	1 2 3 4
• ILS Approach	1 2 3 4
• Missed Approach	1 2 3 4
• Landing From an Approach	1 2 3 4
• Descend Via STAR	1 2 3 4

Required Study:

_____ Section 8: Spatial Disorientation

Quizzes:

_____% Spatial Disorientation

Student Signature: _____ **Instructor Signature:** _____

Phase 2
Lesson 12
DUAL LOCAL

Date: _____ Aircraft: _____ Airport(s): _____

Student Name: _____

Instructor Name & #: _____

Dual: _____ Solo: _____ X-Country: _____ Instrument: _____

Lesson Objective:

During this lesson, the student will review holding procedures, non-precision approaches, instrument departures and circling maneuvers.

Flight Tasks:

- Climb via SID 1 2 3 4
- Hold Procedures 1 2 3 4
- Hold Entries 1 2 3 4
- ATC Departures Clearances 1 2 3 4
- ATC Communications 1 2 3 4
- VOR Approaches 1 2 3 4
- LOC Approaches 1 2 3 4
- RNAV Approaches (LNAV only) 1 2 3 4
- Timed Approaches 1 2 3 4
- Circling Procedures 1 2 3 4
- ILS “Circle to Land” 1 2 3 4
- Landing from an Approach 1 2 3 4
- Non-Precision Partial Panel 1 2 3 4
- Precision Partial Panel 1 2 3 4
- Missed Approaches 1 2 3 4
- Autopilot Procedures 1 2 3 4

Required Study:

_____ Section 6: Weather Theory Part 1

_____ Section 6: Weather Theory Part 2

Quizzes:

_____% Weather Theory Part 2

Student Signature: _____ **Instructor Signature:** _____

Phase 2

Lesson 12.5

DUAL LOCAL

Date: _____ Aircraft: _____ Airport(s): _____

Student Name: _____

Instructor Name & #: _____

Dual: _____ Solo: _____ X-Country: _____ Instrument: _____

Lesson Objective:

Optional lesson based on access to aircraft automation

During this lesson, the student will be introduced to the use of automation in conjunction with approach procedures.

Lesson Content:

____ Intro to VOR Approaches with Autopilot
____ Intro to GPS Approaches (LNAV only) with Autopilot
____ Intro to GPS Approaches (LNAV/ VNAV or LPV) with Autopilot
____ Intro to ILS Approaches with Autopilot
____ Intro to LOC Approaches with Autopilot
____ Intro to Missed Approach with Autopilot
____ Intro to SIDs with Autopilot
____ Intro to Holding Procedures with Autopilot

Required Study:

None

Quizzes:

None

Student Signature: _____ **Instructor Signature:** _____

Phase 2
Lesson 13
DUAL LOCAL

Date: _____ Aircraft: _____ Airport(s): _____

Student Name: _____

Instructor Name & #: _____

Dual: _____ Solo: _____ X-Country: _____ Instrument: _____

Lesson Objective:

PHASE CHECK: Phase 2

During this lesson, the student will complete an Instrument Phase 2 assessment. All maneuvers must be scored as a "3" or higher to continue. Upon completion of this phase check, the student will be cleared to move on to Phase 3. Autopilot should not be used during this phase check.

Ground Portion:

- Weather Information 1 2 3 4
- Holding Procedures 1 2 3 4
- Terminal Procedures Publication 1 2 3 4
- Approach Charts 1 2 3 4
- Published Departure Procedures 1 2 3 4
- Standard Terminal Arrival Procedures 1 2 3 4
- Partial Panel Approaches 1 2 3 4

Flight Tasks:

- ATC Clearances 1 2 3 4
- Clearance Compliance 1 2 3 4
- Holding Procedures 1 2 3 4
- Non-Precision Approach 1 2 3 4
- RNAV Approach (LNAV only) 1 2 3 4
- RNAV Approach (LNAV/ VNAV) 1 2 3 4
- Precision Approach 1 2 3 4
- Missed Approach 1 2 3 4
- Circling Approach 1 2 3 4
- Non-Precision Partial Panel 1 2 3 4
- Precision Partial Panel 1 2 3 4
- Landing from an Approach 1 2 3 4

Required Study:

None

Quizzes:

None

Student Signature: _____ **Instructor Signature:** _____

Phase 3

Lesson 1

GROUND

Date: _____

Student Name: _____

Instructor Name & #: _____

Ground: _____

Lesson Objective:

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

Lesson Content:

____ Intro to Graphical Forecasts for Aviation
____ Intro to Terminal Aerodrome Forecasts
____ Intro to METARs
____ Intro to Wind/ Temperatures Aloft
____ Intro to Pilot Reports
____ Intro to Radar Summary Charts
____ Intro to Surface Analysis Charts
____ Intro to Freezing Level Charts
____ Intro to Upper Level Charts
____ Intro to Significant Weather Prognostic Charts
____ Intro to SIGMETs, AIRMETs, and Convective SIGMETs
____ Intro to Recognition of Critical Weather Situations
____ Intro to Wind Shear Avoidance

Required Study:

_____ Section 4: Inflight Icing - Part 1
_____ Section 6: Aviation Weather Charts

Quizzes:

_____% Aviation Weather Charts

Student Signature: _____ **Instructor Signature:** _____

Phase 3
Lesson 2
DUAL LOCAL

Date: _____ Aircraft: _____ Airport(s): _____

Student Name: _____

Instructor Name & #: _____

Dual: _____ Solo: _____ X-Country: _____ Instrument: _____

Lesson Objective:

During this lesson, the student will be introduced to IFR cross-country planning and review executing instrument approaches.

Lesson Content:

____ Intro to Lost Communications Procedures
____ Intro to Enroute and Terminal Weather
____ Intro to Planning an Alternate
____ Intro to Preparation of an IFR Navigation Log
____ Intro to Planning Departures and Arrivals
____ Intro to Power and Fuel Management
____ Intro to Fuel Planning
____ Intro to Copying and Understanding IFR Clearances

Flight Tasks:

- ATC Communication 1 2 3 4
- Non-Precision Approach 1 2 3 4
- Precision Approach 1 2 3 4
- Missed Approach 1 2 3 4
- Circle To Land 1 2 3 4

Required Study:

_____ Section 4: Enroute Charts - Part 1
_____ Section 5: Approach Alternates

Quizzes:

None

Student Signature: _____ **Instructor Signature:** _____

Phase 3

Lesson 3

GROUND

Date: _____

Student Name: _____

Instructor Name & #: _____

Ground: _____

Lesson Objective:

During this lesson, the student will be introduced to enroute IFR publications and procedures.

Lesson Content:

____ Intro to Chart Supplement
____ Intro to VFR/ IFR Low Altitude Planning Charts
____ Intro to Enroute Low Altitude IFR Charts
____ Intro to Enroute Chart Symbology
____ Intro to Air Traffic Service (ATS) Route System
____ Intro to Intersections and Changeover Points
____ Intro to ATS Route Course Changes
____ Intro to Flight Deck Management
____ Intro to Position Reporting Requirements
____ Intro to Additional Reporting Requirements
____ Intro to Lost Communications Procedures (IMC and VMC)

Required Study:

_____ Section 4: Enroute Charts - Part 2
_____ Section 4: Cruise, VFR on Top

Quizzes:

_____% Enroute Charts - Part 2
_____% Cruise, VFR on Top

Student Signature: _____ **Instructor Signature:** _____

Phase 3
Lesson 4
DUAL LOCAL

Date: _____ Aircraft: _____ Airport(s): _____

Student Name: _____

Instructor Name & #: _____

Dual: _____ Solo: _____ X-Country: _____ Instrument: _____

Lesson Objective:

During this lesson, the student will be introduced to IFR cross-country planning and review executing instrument approaches.

Lesson Content:

____ Intro to Simulated Lost Coms Procedures
____ Intro to Enroute and Terminal Weather
____ Intro to Planning an Alternate
____ Intro to Preparation of an IFR Navigation Log
____ Intro to Planning Departures and Arrivals
____ Intro to Power and Fuel Management
____ Intro to Fuel Planning
____ Intro to Copying and Understanding IFR Clearances

Flight Tasks:

- ATC Communication 1 2 3 4
- Non-Precision Approach 1 2 3 4
- Precision Approach 1 2 3 4
- Missed Approach 1 2 3 4
- Circle To Land 1 2 3 4

Required Study:

_____ Section 4: Lost Communications

Quizzes:

_____% Lost Communications

Student Signature: _____ **Instructor Signature:** _____

Phase 3

Lesson 5

GROUND

Date: _____

Student Name: _____

Instructor Name & #: _____

Ground: _____

Lesson Objective:

During this lesson, the student will be introduced to IFR cross-country flight planning.

Lesson Content:

____ Intro to Charts and Publications
____ Intro to Weather Briefing
____ Intro to NOTAMs
____ Intro to Determination of an Alternate
____ Intro to Preferred IFR Routes
____ Intro to Planning DPs/ STARs
____ Intro to Takeoff Minimums
____ Intro to Cruising Altitudes
____ Intro to Aircraft Performance
____ Intro to Flight Plan Filing
____ Intro to Flight Deck Management
____ Intro to Aeronautical Decision-Making and Judgement
____ Intro to Crew Resource Management (CRM)

Required Study:

_____ Section 6: Aviation Weather Reports
_____ Section 8: Planning Regulations

Quizzes:

_____% Aviation Weather Reports
_____% Planning Regulations

Student Signature: _____ **Instructor Signature:** _____

Phase 3
Lesson 6
DUAL LOCAL

Date: _____ Aircraft: _____ Airport(s): _____

Student Name: _____

Instructor Name & #: _____

Dual: _____ Solo: _____ X-Country: _____ Instrument: _____

Lesson Objective:

During this lesson, the student will review IFR cross-country planning and executing instrument approaches. 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 substantial enroute time.

Flight Tasks:

- Dealing with Enroute Weather 1 2 3 4
- Preparation of an IFR Nav Log 1 2 3 4
- Planning Departures and Arrivals 1 2 3 4
- Power/ Fuel Management 1 2 3 4
- Filing an IFR Flight Plan 1 2 3 4
- Copying/ Understanding IFR Clearances 1 2 3 4
- Non-Precision Approach 1 2 3 4
- RNAV Approaches (LNAV only) 1 2 3 4
- Precision Approach 1 2 3 4
- Missed Approach Procedures 1 2 3 4
- Circle To Land Procedures 1 2 3 4

Required Study:

_____ Section 6: Wind shear and Microbursts

Quizzes:

_____% Wind shear and Microbursts

Student Signature: _____ **Instructor Signature:** _____

Phase 3

Lesson 7

GROUND

Date: _____

Student Name: _____

Instructor Name & #: _____

Ground: _____

Lesson Objective:

During this lesson, the student will be introduced to weather conditions associated with IFR flight and the hazards of aircraft icing.

Lesson Content:

____ Intro to Conditions for Ice Formation
____ Intro to Formation of Frost
____ Intro to Formation of Clear Ice
____ Intro to Formation of Rime Ice
____ Intro to Formation of Mixed Ice
____ Intro to Carburetor Icing
____ Intro to Icing Intensities
____ Intro to PIREPs Specific to Icing
____ Intro to AIRMETs Specific to Icing
____ Intro to SIGMETs Specific to Icing
____ Intro to Winds/ Temps Aloft Forecast
____ Intro to Deicing and Anti-Icing Equipment
____ Intro to Icing Avoidance Strategies
____ Intro to Inadvertent Icing Encounters
____ Intro to Flight Into Known Icing

Required Study:

_____ Section 4: Inflight Icing - Part 2

Quizzes:

_____% Inflight Icing - Part 2

Student Signature: _____ **Instructor Signature:** _____

Phase 3
Lesson 8
DUAL LOCAL

Date: _____ Aircraft: _____ Airport(s): _____

Student Name: _____

Instructor Name & #: _____

Dual: _____ Solo: _____ X-Country: _____ Instrument: _____

Lesson Objective:

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

Flight Tasks:

- Dealing with Enroute Weather 1 2 3 4
- Preparation of an IFR Nav Log 1 2 3 4
- Planning Departures and Arrivals 1 2 3 4
- Lost Communications Procedures 1 2 3 4
- DME Arc 1 2 3 4
- Copying/ Understanding IFR Clearances 1 2 3 4
- Non-Precision Approach - Partial Panel 1 2 3 4
- Precision Approach 1 2 3 4
- Missed Approach Procedures 1 2 3 4
- Circle To Land Procedures 1 2 3 4

Required Study:

_____ Section 6: Atmospheric Stability

Quizzes:

_____% Atmospheric Stability

Student Signature: _____ **Instructor Signature:** _____

Phase 3
Lesson 9
DUAL LOCAL

Date: _____ Aircraft: _____ Airport(s): _____

Student Name: _____

Instructor Name & #: _____

Dual: _____ Solo: _____ X-Country: _____ Instrument: _____

Lesson Objective:

During this lesson, the student will review IFR cross-country flight planning and executing instrument approaches. This cross-country flight of at least 250 nautical miles, along airways or on 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 navigational systems. The autopilot can be used where appropriate to assist in the management of the aircraft.

Flight Tasks:

- Filing an IFR Flight Plan 1 2 3 4
- Copying/ Understanding IFR Clearances 1 2 3 4
- Dealing with Enroute Weather 1 2 3 4
- Preparation of an IFR Navigation Log 1 2 3 4
- Planned Departures and Arrivals 1 2 3 4
- Power/ Fuel Management 1 2 3 4
- Non-Precision Approach 1 2 3 4
- Precision Approach 1 2 3 4
- Missed Approach Procedures 1 2 3 4
- Circle To Land Procedures 1 2 3 4
- Approaches with an Autopilot 1 2 3 4

Required Study:

None

Quizzes:

None

Student Signature: _____ **Instructor Signature:** _____

Phase 3

Lesson 10

GROUND

Date: _____

Student Name: _____

Instructor Name & #: _____

Ground: _____

Lesson Objective:

PHASE CHECK: Phase 3

During this lesson, the student will complete an Instrument Phase 3 knowledge assessment. All subjects must be scored as a "3" or higher to continue. Upon completion of this phase check, the student will be cleared to move on to Phase 3 flight check.

Lesson Content:

____ Review Instrument Pilot Knowledge Test
____ Review Weather Information
____ Review Cross-Country Flight Planning
____ Review Aircraft Systems Related to IFR Flight
____ Review Flight/ Navigational Equipment
____ Review Instrument Flight Deck Check
____ Review FARs Related to IFR Flight
____ Review Pilot Qualifications

Required Study:

None

Quizzes:

None

Student Signature: _____ **Instructor Signature:** _____

Phase 3
Lesson 11
DUAL LOCAL

Date: _____ Aircraft: _____ Airport(s): _____

Student Name: _____

Instructor Name & #: _____

Dual: _____ Solo: _____ X-Country: _____ Instrument: _____

Lesson Objective:

PHASE CHECK: Phase 3

During this lesson, the student will complete an Instrument Phase 3 assessment. All maneuvers must be scored as a "3" or higher to continue. Upon completion of this phase check, the student will be cleared to move on to checkride prep. Autopilot should not be used during this phase check.

Flight Tasks:

- Instrument Flight Deck Check 1 2 3 4
- Compliance with ATC Clearances 1 2 3 4
- Communications 1 2 3 4
- Holding Procedures 1 2 3 4
- Instrument Flight 1 2 3 4
- Partial Panel Instrument Flight 1 2 3 4
- Recovery From Unusual Attitudes 1 2 3 4
- Intercepting/ Tracking Nav. Systems 1 2 3 4
- Departure, Enroute, Arrival Procedures 1 2 3 4
- Non Precision Approach - Full Approach 1 2 3 4
- Non Precision Approach - Vectored 1 2 3 4
- Non Precision Approach - Partial Panel 1 2 3 4
- RNAV Approaches 1 2 3 4
- Precision Approach 1 2 3 4
- Missed Approach Procedures 1 2 3 4
- Circling Approach 1 2 3 4
- Lost Comms Procedures 1 2 3 4
- Checking Instruments and Equipment 1 2 3 4

Required Study:

None

Quizzes:

None

Student Signature: _____ **Instructor Signature:** _____

Checkride Prep

Checkride Preparation

During this phase of training, the instructor will use this checklist to evaluate the student and determine the next lessons. All tasks should be graded as a “3” or higher in order to be considered “checkride ready.”

If a task is not graded as a “3” or higher, the instructor should use the blank lesson plan provided to create a custom lesson focusing on the students tasks that need improvement.

Preflight Preparations:

- Certificates and documents 1 2 3 4
- Airworthiness requirements 1 2 3 4
- Weather information 1 2 3 4
- Systems 1 2 3 4
- IFR regulations 1 2 3 4
- Aeromedical factors 1 2 3 4
- Instrument currency requirements 1 2 3 4

Cross-country planning:

- Fuel planning 1 2 3 4
- Filing a flight plan 1 2 3 4
- IFR nav log 1 2 3 4
- National Airspace System 1 2 3 4
- Performance and limitations 1 2 3 4
- Departure charts 1 2 3 4
- Alternate planning 1 2 3 4

Preflight Operations:

- Instrument preflight inspection 1 2 3 4
- Required IFR instruments and checks 1 2 3 4

Airport Operations:

- Departure clearances 1 2 3 4
- Radio communications 1 2 3 4
- Standard instrument departures 1 2 3 4

Instrument Maneuvers:

- Straight-and-level flight: simulated instrument 1 2 3 4
- Constant airspeed climbs/ descents: simulated instrument 1 2 3 4
- Constant rate climbs/ descents: simulated instrument 1 2 3 4
- Turns to headings: simulated instrument 1 2 3 4
- Recovery from unusual flight attitudes: simulated instrument 1 2 3 4
- Use of navigation systems: simulated instrument 1 2 3 4
- Steep turns: simulated instrument 1 2 3 4
- Instrument cross-check 1 2 3 4
- Partial panel operations 1 2 3 4
- Emergency procedures 1 2 3 4
- Primary and supporting instruments 1 2 3 4

Enroute Procedures:

- Lost communications 1 2 3 4
- Enroute weather 1 2 3 4
- Fuel and power management 1 2 3 4
- Clearance limits 1 2 3 4
- Position reporting 1 2 3 4
- VOR course tracking 1 2 3 4
- GPS course tracking 1 2 3 4
- Standard Terminal Arrivals 1 2 3 4
- Magnetic compass errors 1 2 3 4

Approach Procedures:

- Published visual approaches 1 2 3 4
- Timed approaches 1 2 3 4
- DME Arc 1 2 3 4
- Non-precision approaches 1 2 3 4
- Circling approaches 1 2 3 4
- Precision approaches 1 2 3 4
- Back course approaches 1 2 3 4
- Missed approach procedures 1 2 3 4
- Holding procedures 1 2 3 4
- Published course reversals 1 2 3 4
- Instrument lighting systems 1 2 3 4

Checkride Prep
Lesson _____

Date: ___________	Aircraft: ___________	Airport(s): ____________________
Student Name: ____		
Instructor Name & #: ____		
Dual: _____ Solo: _____	X-Country: _____	Instrument: _____

Lesson Objective:

CHECKRIDE PREP

During this lesson, the student will complete any flight tasks deemed necessary for checkride prep. All flight tasks must be graded as a "3" or above in order to be considered "checkride ready."

Flight Tasks:

• ________________________	1 2 3 4	• _____________________________	1 2 3 4
• ________________________	1 2 3 4	• _____________________________	1 2 3 4
• ________________________	1 2 3 4	• _____________________________	1 2 3 4
• ________________________	1 2 3 4	• _____________________________	1 2 3 4
• ________________________	1 2 3 4	• _____________________________	1 2 3 4
• ________________________	1 2 3 4	• _____________________________	1 2 3 4
• ________________________	1 2 3 4	• _____________________________	1 2 3 4
• ________________________	1 2 3 4	• _____________________________	1 2 3 4
• ________________________	1 2 3 4	• _____________________________	1 2 3 4
• ________________________	1 2 3 4	• _____________________________	1 2 3 4
• ________________________	1 2 3 4	• _____________________________	1 2 3 4

Required Study:

Quizzes:

Student Signature: ________________________ **Instructor Signature:** ________________________

Pre Checkride Checklist:

Documents (Eligibility Determination):

- ☐ Photo ID *61.3(a)(1)(2), AC 61.65 Appendix 2*
  - U.S. State issued driver's license or ID, passport, or US Armed Forces ID Card
  - Must be unexpired, government issued
  - Name is consistent with name on Airman's knowledge rest result
  - Name is consistent with name on 8710-1 application
  - Meets minimum age requirement (Private: 18 years of age per *61.123(a)*
- ☐ US Private Pilot Certificate *61.123(h)*
  - Provide cert. number
- ☐ Current Medical Certificate *61.3(c)(1)(2), 61.39(a)(4)*
  - Minimum 3rd Class Medical (for testing purposes) *61.23(a)*, or Basic Med *61.113(i), 61.23(c)(3), Part 68, AC 61-8*
- ☐ Airman's Knowledge Test results
  - Minimum score of 70% *61.39, 61.35(b), FAA-G-8082-17 Test Guide*
  - Must have been taken within 24 calendar months prior to the practical test *61.39(a)(1)*
- ☐ English: Read, write, and converse fluently in English *61.103(b), AC 60-68, 61.65(a)*

- ☐ **IF** 141 Grad: 141 Graduation Certificate (signed within 60 days prior to test, 141 school graduates only).
- ☐ **IF** Re-test: Provide a copy of the Notice of Disapproval, New Endorsed 8710-1, and logbook endorsement as below.
- ☐ **IF** resuming a practical test under a Letter of Discontinuance, provide a copy of the Letter of Discontinuance

Logbook Endorsements (AC 61.65H):

- ☐ Practical test prerequisites logbook endorsement per *FAR 61.39, reference AC 61.65H Page A6, Paragraph A1, A2, and page A13 paragraph A40 which is another example of the 61.39 endorsement.*
  - Date of endorsement is within 2 calendar months prior to the test date
  - Applicant is prepared for practical test
  - All missed FAA Knowledge Test Questions remediated by CFI
- ☐ Flight training endorsement for proficiency/ practical test per *61.65(a)(5)* and aeronautical experience per *61.65(a)(6) regarding 61.65 (c)(d), ref. AC 61.65 page A13, paragraph A39*
- ☐ Current Flight Review per *61.65, reference AC 61.65H page A18, paragraph A65*
- ☐ Evidence of ground training of *61.65(3)* in logbook or on home study course(like Gold Seal!)
- ☐ Airman Knowledge Test endorsement *FAR 61.35(a), 61.65(a)(4)* to take the Knowledge Test, reference *AC 61.65H page A12, paragraph A38*

Part 61 Based Instrument Aeronautical Experience:

- ☐ Pilot In Command
  - 50 hours PIC Cross-Country
  - Minimum of 10 house must be done in fixed wing airplanes
- ☐ Actual or simulated instrument hours
  - 15 hours dual instruction in actual or simulated conditions by CFII in subjects prescribed by *FAR 61.65(c)*
  - 3 hours airplane dual actual or simulated instrument by CFII of test preparation within the previous 2 calendar months
  - Instrument flight training on IFR Cross-Country procedures including:
    - 1 Long distance cross-country flight;
      - Must be at least 250 nautical miles
      - One leg must have a straight line distance of 100 nautical miles or more
      - Must have executed 3 different types of approaches
      - Must have executed these at 3 different airports
  - Optional maximum of 20 hours utilizing simulators

Required Aircraft Equipment:

- ☐ Required aircraft documents valid, current and available on board the aircraft (ARROW)
  - Airworthiness Certificate
  - Registration Certificate (unexpired)
  - Radio Station license and restricted telephone operator's permit if international ops.
  - Owners Manual, POH, or AFM as applicable to the aircraft
  - Weight and balance: current and applicable

- ☐ Original aircraft maintenance logs available on test day (to be used for airworthiness determination)
- ☐ Annual, 100-Hour, or progressive inspections current as required by operation
- ☐ AD compliance list available, current, showing one-time and reoccurring AD compliance
- ☐ Aircraft must be acceptable per *FAR 61.45*: US registry, appropriate category and class (ASEL), standard or special airworthiness certificate.
- ☐ Transponder, pitot-static certs, ELT
- ☐ VOR tests last 30 days/ GPS database current
- ☐ Owner's Manual, POH or FAA approved AFM accessible in the aircraft

Personal Equipment:

- ☐ Appropriate Aeronautical charts for the area and cross-country planning
- ☐ Appropriate Chart Supplement for the area and cross-country planning
- ☐ E6B or equivalent
- ☐ Plotter or equivalent
- ☐ Flight log
- ☐ Flight plan form
- ☐ Airmans Information Manual (AIM)
- ☐ Current 14 CFR
- ☐ Current Airman Certification Standards (ACS)

IACRA:

- ☐ 8710-1 application via IACRA properly completed *61.39(a)(7)*
  - Signed by applicant
  - Signed by recommending instructor
  - Name on application must be consistent with name on ID
  - Flight hours entries must meet minimum hours per regulations

  Note: For re-test appointments, a separate 8710-1 & additional CFI logbook endorsement per *FAR 61.49* is required

This syllabus is designed to be used as a basic template for training.
All flight tasks and ground lessons are laid out in the order of a standard training profile.
Some students may need elements to be adjusted or changed to fit their personal learning style.
Not only is changing or deviating from this syllabus allowed, it's encouraged!

Gold Seal

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