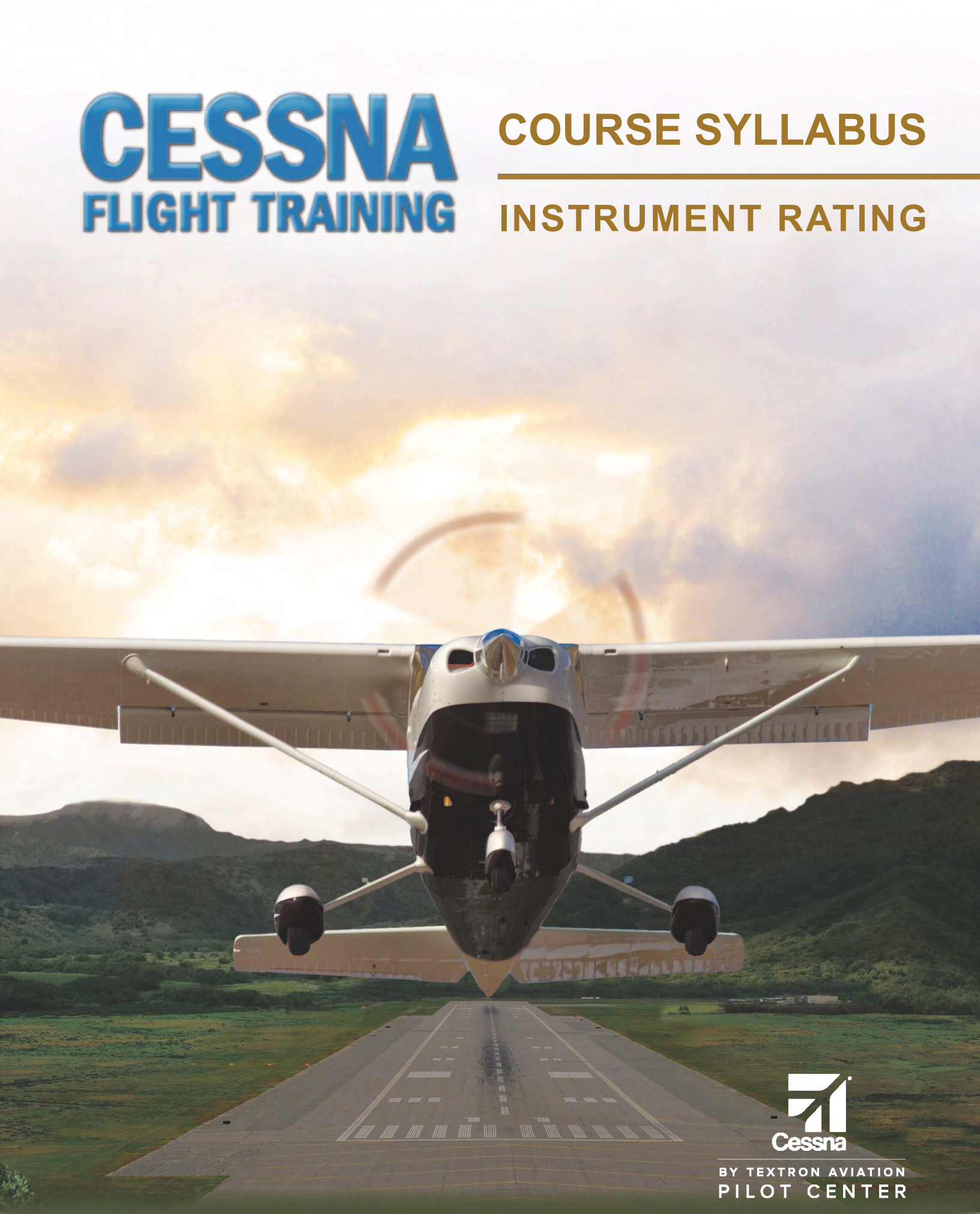
CESSNA FLIGHT TRAINING

COURSE SYLLABUS

INSTRUMENT RATING



Cessna
BY TEXTRON AVIATION
PILOT CENTER

Cessna
Flight Training System

Cessna Instrument Rating Training Course

SYLLABUS

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Version 1.04

Cessna Instrument Rating Syllabus
Your Path to Becoming an Instrument Rated Pilot

TABLE OF CONTENTS

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INSTRUMENT RATING SYLLABUS
REVISION RECORD

Revision Number	*Revision Date*	*Online Date*	*Change Description*
Ver. 1.00	08-15-11	ORIGINAL	ORIGINAL
Ver. 1.01	02-16-16	02-22-16	Pg 12 Radar Summary Chart lesson renamed and revised due to deletion of Radar Summary charts from preflight briefings.
Ver. 1.02	05-12-16	05-12-16	Pg 5, 13, 14, 15, 16, 17, 18, 28, 29, 30, 34, 35, 44, 45, 47, 53, 55, 64 & A3-A7 to reflect ATD use rule change.
Ver. 1.03	06-15-16	06-15-16	Pg iii, 8, 31, 36, 56-59, 66, 69, 70, 72-74, 76, & 77 replaced “Practical Test Standards” with “Airman Certification Standards.”
Ver. 1.03	06-15-16	06-15-16	Pg 62 replaced Airport/Facility Directory with Chart Supplement.
Ver. 1.04	03-31-23	04-30-23	Title page replaced “Cessna eLearning Web-Based Instructional Programs” with “Cessna Flight Training System.”
Ver. 1.04	03-31-23	04-30-23	Pg i, iv, v & xiv replaced “Cessna Pilot Center” & “CPC” with “flight school.”
Ver. 1.04	03-31-23	04-30-23	Pg v Replaced “Integrating Aviation Training Devices into the Course” with “Integrating Flight Simulation Devices into the Course”
Ver. 1.04	03-31-23	04-30-23	Pg 3 replaced “The VOR Indicator and How to Use It” with “Using the VOR.”
Ver. 1.04	03-31-23	04-30-23	Pg 12 replaced “Area Forecasts (FA)” with Graphical Forecasts for Aviation (GFA).”
Ver. 1.04	03-31-23	04-30-23	Pg 5, 13, 14, 15, 16, 17, 18, 28, 29, 30, 34, 35, 44, 45, 46, 47, 53, 55 & 64 Replaced note ATD MAY BE USED with FSTD MAY BE USED.
Ver. 1.04	03-31-23	04-30-23	Pg 21-23, 33, 38, 39, 52, 58-60, 69, 74-77 Renamed end of stage Progress Checks to “Progress Stage 1, 2, 3, or 4 Check”
Ver. 1.04	03-31-23	04-30-23	Pg 65 & A3 Amplified IFR Cross-Country approach requirements specifying three different kinds of approaches with the use of navigation systems.

INSTRUMENT RATING SYLLABUS
REVISION RECORD

Revision Number	*Revision Date*	*Online Date*	*Change Description*

Cessna Instrument Rating Syllabus
Your Path to Becoming an Instrument Rated Pilot

Congratulations!

You now embark on one of the most exciting endeavors—learning to fly through clouds and low visibility. You will find it challenging and fun, as well as intellectually, physically and emotionally stimulating. Whether you use an airplane as a tool for business or simply to get above and beyond life on the ground, you'll find that the act of piloting an airplane in challenging weather conditions expands your mind and senses like nothing else you've ever experienced.

This syllabus is the guide to your flight training. By following it, you know the objective of every phase of training and individual flight scenario. It also helps you to understand the topics that you need to study before you go to the airport.

STEPS FOR BECOMING AN INSTRUMENT RATED PILOT

Earning an instrument rating involves a few specific steps. Your flight school will explain each step below in detail.

- Be at least 17 years old (you can start training earlier)
- Possess a valid medical certificate
- Pass a test on aeronautical knowledge (this course prepares you for that test)
- Complete the required flight training for the course
- Pass a practical test

COURSE ELEMENTS (Knowledge and Flight)

The Cessna online pilot knowledge training

- Provides innovative and interactive learning exercises
- Includes in-airplane videos
- Is accessible anywhere you have an Internet connection
- Lessons and videos can be downloaded to a mobile device companion app for your convenience

The unique design of the training program

- Integrates web-based knowledge sessions with in-aircraft flight scenarios
- Ensures that before every flight you will have the required knowledge to succeed
- Provides flight preview videos to give you a pilot's view of what you will practice in the airplane

You and your instructor will discuss the schedule for your training and you will know

- When to complete the appropriate web-based knowledge instruction and flight previews
- What to bring with you for each flight scenario

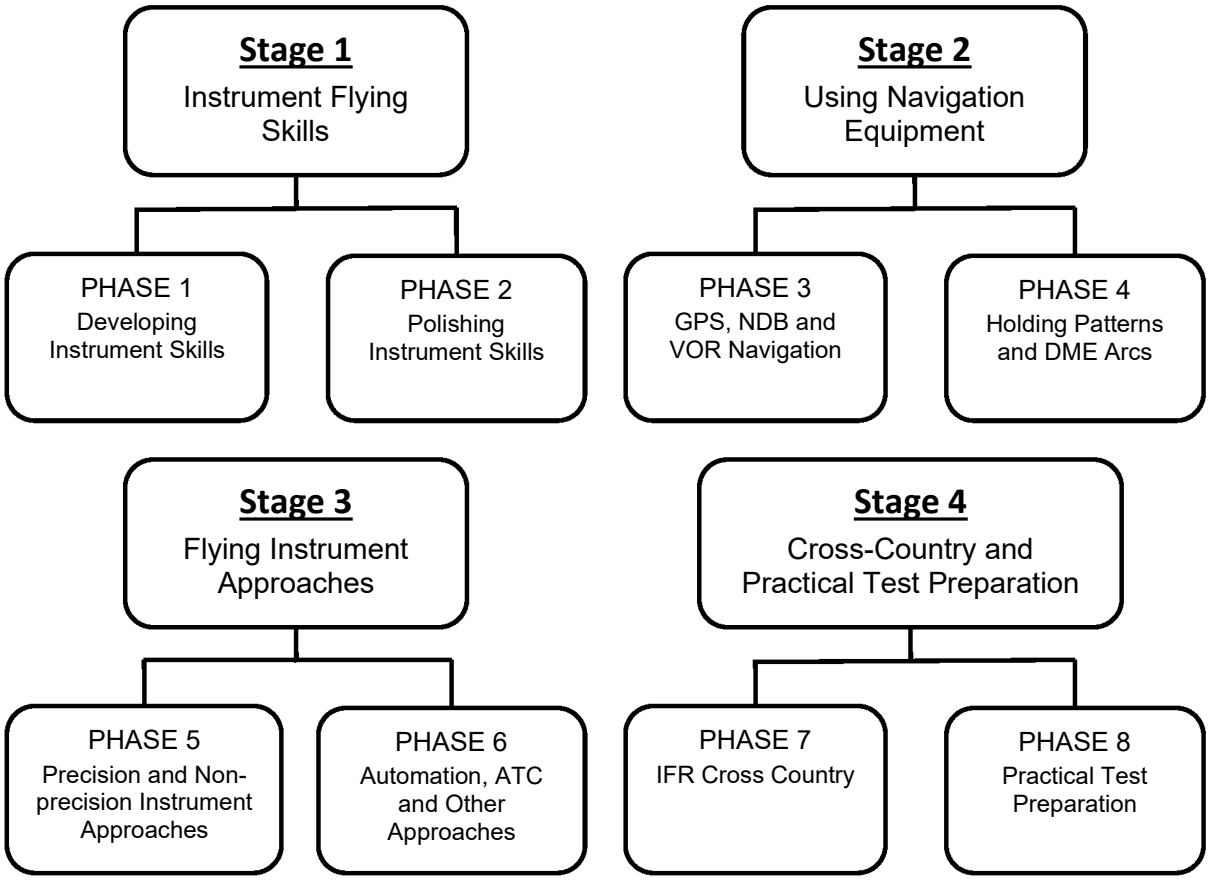
Upon completion of each flight scenario, you and your instructor will

- Review the elements of the flight scenario and the scenario outcome
- Compare your performance to the completion standards
- Independently evaluate the tasks in the flight scenario
- Discuss and compare the results
- Discuss the next flight scenario

Please note that it may take you more than one flight to complete a flight scenario to the established standards.

COURSE STRUCTURE

The course is divided into four stages. Each stage is divided into two phases.



STAGES

Each stage has a *required* **Progress/Stage Check** that

- Checks your progress and the effectiveness of your instructor pairing
- Consists of oral quizzing and a flight
- Is given by the Chief Flight Instructor, Assistant Chief Flight Instructor or a designated instructor

The progress/stage checks

- Are nothing to get nervous about; they are to ensure the completeness of your training
  - You will find that flying with another instructor often provides fresh insight and new techniques
- Can be found in
  - Stage 1, Phase 2
  - Stage 2, Phase 4
  - Stage 3, Phase 6
  - Stage 4, Phase 8

PHASES

There are eight phases of training. Each phase has

- **Web-based Knowledge Instruction**
- **Ground Training Checklists**
- **Flight Scenarios**
- **Phase Proficiency Checklists**

The four stage-ending phases also include

- **Progress/Stage Check Scenarios**
- **Progress/Stage Check Oral and Flight Checklists**

PHASE SEQUENCE
The eight phases are:

1. DEVELOPING INSTRUMENT SKILLS — In this phase you learn preflight preparation for IFR flight, instrument scan techniques, basic instrument flight maneuvers, using the magnetic compass and postflight procedures following an IFR flight.

2. POLISHING INSTRUMENT SKILLS — Here you will polish your skills controlling the airplane by reference only to the flight instruments and learn to receive, copy and fly an IFR clearance. You will also learn to control the airplane simulating failure of the primary flight instruments and recover from an unusual flight attitude.

3. GPS, NDB AND VOR NAVIGATION — This phase provides you the opportunity to develop skills and gain confidence using RNAV, GPS, NDB and VOR avionics systems for IFR navigation. In addition, you will learn to apply these skills flying IFR departure procedures.

4. HOLDING PATTERNS AND DME ARCS — This phase introduces holding patterns including their purpose and the requirements for entering, flying and making reports if you have received a holding clearance. You will also learn to fly DME arcs.

5. PRECISION AND NONPRECISION INSTRUMENT APPROACHES — During this phase you will fly both precision and nonprecision approach procedures while learning the visual references needed to make the decision to continue for landing. If the required references are not visible, you will follow the missed approach procedure.

6. AUTOMATION, ATC AND OTHER APPROACHES — In this phase, you'll polish your skill with precision and nonprecision approaches. You will also discover the value of using the autopilot for instrument approaches. In addition, you'll learn about using a circling maneuver to align with the landing runway.

7. IFR CROSS COUNTRY — Here you learn the steps involved in planning for and flying safe cross countries under Instrument Flight Rules. During a long cross country you will use three different types of IFR approach procedures.

8. PRACTICAL TEST PREPARATION— In this phase you will polish all the instrument flying skills and knowledge you have learned to meet or exceed the Instrument Rating Airman Certification Standards.

Web-based Knowledge Instruction

- Forms your knowledge foundation for the flight scenarios
- Is to be completed before the corresponding phase can be considered complete

Ground Training Checklists

- Can be prepared for by studying the web-based curriculum, flight previews and course library materials
    - Including FAA publications such as the Instrument Flying Handbook, Instrument Procedures Handbook, and FAR/AIM
- Includes items that
    - Can be recorded as 'Instruction Given,' 'Describe' or 'Explain.'
    - Must be demonstrated to the 'Explain' level to complete the phase.
        - 'Instruction Given' indicates that your instructor briefed you on the subject.
        - 'Describe' indicates that you are able to describe the physical characteristics of the maneuver or knowledge area.
        - 'Explain' indicates that you are able to describe the task or knowledge area and understand the underlying concepts, principles and procedures.

Flight Scenarios

- Provide the objective, structure and real-world simulation for the training flights
- Are designed to help complete the phase training standards
- Can be customized by your flight school to/for your local training environment
- May be completed out of phase or stage (if approved) as necessary

Phase Proficiency Checklists

- Contain completion standards for the phase, including
    - Flight related tasks that are to be completed to the 'Perform' level
    - Single-pilot Resource Management (SRM) items to be completed to the 'Manage/Decide' level

WHAT TO EXPECT BEFORE AND AFTER EACH FLIGHT

PREFLIGHT BRIEFING

Before each flight scenario you and your instructor will review the scenario objectives to make sure you both understand what you will be doing during the lesson including any uncompleted tasks from a previous scenario.

- Use this opportunity to ask any questions
- Make sure you understand what is expected of you

POSTFLIGHT DISCUSSION AND EVALUATION

After each flight, you and your instructor will

- Review your flight and evaluate your performance independently
- Compare and discuss your assessment with his or her evaluation

Your instructor will make recommendations to help you in your learning. Make sure you ask questions about any area that is not clear.

You will then complete your flight training record based on the completion standards for the phase. Any tasks requiring additional practice to meet the phase completion standards will be carried over to the next flight scenario.

You may expect at least 15 minutes of preflight briefing and 15 minutes of postflight discussion and evaluation for each scenario.

PROGRESSING THROUGH THE SYLLABUS

HOW TO COMPLETE A PHASE

You have completed a phase when you have achieved 100% progress for that phase in your home study course, all Ground Training Checklist items evaluated as 'Explain' and all maneuver and SRM tasks on the Phase Proficiency Checklist are evaluated at the 'Perform' or 'Manage/Decide' level as appropriate for the completion standards.

You do not need to complete all scenarios in a phase in order to complete that particular phase.

- The scenarios are simply suggested flights to get you to the 'Perform' and 'Manage/Decide' level for the tasks and standards listed in that particular Phase Proficiency Checklist

It is more common to repeat scenarios to obtain the desired level of proficiency than to skip them.

If you are able meet all of the phase standards and skip a scenario

- You and your instructor must make sure that you meet the hourly training requirements required for an Instrument Pilot Rating according to the Federal Aviation Regulations (FARs)
    - It is possible that you could finish up the course and have to make up time at the end

The flight scenarios in a phase are designed to progress in a building-block approach from lower to higher levels of task and SRM complexity.

- When appropriate, scenarios may be flown out of order within a phase (i.e., equipment, facilities, or weather impacting the next scenario in sequence)

It is recommended that you only fly scenarios that are in the current phase of training you are in

- However, with the approval of your Chief or Assistant Chief Instructor, you can complete scenarios that are out of the phase you are currently in

INTEGRATING FLIGHT SIMULATION TRAINING DEVICES INTO THE COURSE

It is highly recommended that flight simulation training devices be used whenever possible to familiarize you to, and build proficiency with, new procedures, concepts and techniques.

This syllabus is designed for integrated use with all three flight simulation device categories: Full Flight Simulators (FFS), Flight Training Devices (FTD) and Aviation Training Devices (ATD), including Advanced Aviation Training Devices (AATD) and Basic Aviation Training Devices (BATD).

Any scenario labeled with **FSTD MAY BE USED** may be performed in a flight simulation training device. Since the fidelity and capability of the different device categories vary greatly, the maximum training time creditable to the course requirements also varies.

Although there is no limitation on training that may be accomplished in any category FSTD, you will want to be aware that if all scenarios so labeled were flown in a simulation device, you will most likely exceed the maximum number of hours that may be credited toward the total course requirements. Note also that the allowable training device hours differ depending on whether you are enrolled in a Part 141 or a Part 61 curriculum. You and your instructor will want to make sure that you meet the in-the-airplane training requirements (see Appendix A) before you complete the course.

OVERALL SYSTEM USE

The Cessna Instrument Pilot training system is designed to provide the most benefit when

- The instructor assigns preparation for the next scenario (normally in sequence) including
  - Web-based study, suggested study materials, scenario planning
- Prior to the next scenario, you
  - Study the assigned materials
  - Print a Phase Progress Report for your training records at the airport
  - Perform the necessary scenario planning
- Prior to the flight, the instructor may print your training objective for that day including the
    - Flight Scenario
    - Phase Ground Training Checklist and Proficiency Checklist
- During the preflight briefing
  - Your instructor will
    - Review the Phase Progress Report you provide
    - May introduce or evaluate the items on the phase Ground Training Checklist
  - You will
    - Ask any questions you may have
- During the postflight briefing
  - You independently grade the applicable tasks on the Phase Proficiency Checklist
  - Your instructor independently grades the tasks on the Phase Proficiency Checklist
  - You then both discuss the scenario outcome and compare grading
  - The instructor logs the scenario into the Course Tracking Application (CTA) at your flight school

FAA INDUSTRY TRAINING STANDARDS (FITS)

This Cessna Flight Training System syllabus for flight school customers employs the concepts developed under the FAA-Industry Training Standards (FITS) program. FITS incorporates three tenets

- Scenario-Based Training (SBT)
- Single-Pilot Resource Management (SRM)
- Learner-Centered Grading (LCG)

Scenario-Based Training (SBT) uses real-world scenarios as the foundation of training. Flight maneuvers are still a vital part of flight training, but the use of real-world scenarios help to develop a pilot's decision making skills. The training presents situations and circumstances that pilots face every day as learning experiences.

Single-Pilot Resource Management (SRM) includes the concepts of Aeronautical Decision Making (ADM), Risk Management (RM), Task Management (TM), Automation Management (AM), Controlled Flight into Terrain (CFIT) awareness, and Situational Awareness (SA). SRM training helps the pilot to accurately assess and manage risk, thereby making logical and timely decisions.

Learner-Centered Grading (LCG) includes two parts: learner self-assessment and a detailed debrief by the instructor. The purpose of the self-assessment is to stimulate growth in the learner's thought processes and, in turn, behaviors. The self-assessment is followed by an in-depth discussion between the instructor and the customer (pilot-in-training) that compares the instructor's assessment to the customer's self-assessment.

SCENARIO-BASED TRAINING

The scenario-based approach to training pilots emphasizes the development of critical thinking and flight management skills, rather than focusing solely on traditional maneuver-based skills. The goal of this training philosophy is the accelerated acquisition of higher-level decision making skills. Such skills are necessary to prevent pilot-induced accidents.

Scenario-based training goals include the development of

- Critical thinking skills
- Aeronautical Decision-Making skills
- Situational Awareness
- Pattern recognition (emergency procedures) and judgment skills
- Automation competence
- Planning and execution skills
- Procedural knowledge
- Psychomotor (hand-eye coordination) skills
- Risk Management skills
- Task Management skills
- Automation Management skills
- Controlled Flight into Terrain (CFIT) awareness

For scenario-based training to be effective there must be a purpose for the flight and consequences if the flight is not completed as planned.

It is vital that you, the pilot-in-training, and the instructor communicate the following information well in advance of every training flight:

- Purpose of the flight
- Pressures to complete the flight (real or simulated)
- Risks/hazards associated with the scenario (real or simulated)
- Scenario destination(s)
- Desired outcomes
- Possible in-flight scenario changes or deviations (during later stages of the program)

With the guidance of your instructor, you should plan and fly the scenario as realistic as possible. This means that you will know where you are going and what will transpire during the flight. While the actual flight may deviate from the original plan, this method allows you to be placed in a realistic scenario.

SCENARIO PLANNING

Prior to the flight, you will be briefed on the scenario to be planned. You will plan the scenario; your instructor will help you the first few times. The flight scenario should include:

- Simulated real-world reason to go flying
- Route, including the
    - Destination(s), weather, and applicable NOTAMs
- Pressures to complete the flight (real or simulated)
- Risks associated with the scenario (real or simulated)
- Possible deviations

Reality is the ultimate learning situation, and scenario-based training attempts to get as close as possible to this ideal. The more realistic the training scenario

- The better core safety habits are learned, and
- Decision-making skills can be applied in the real world

SINGLE-PILOT RESOURCE MANAGEMENT (SRM)

Single-Pilot Resource Management (SRM) is defined as the art and science of managing all the resources (both onboard the aircraft and from outside sources) available to a pilot flying in a single-pilot operation (prior to and during flight) to ensure that the successful outcome of the flight is never in doubt. SRM will be employed throughout this curriculum.

SRM includes the concepts of

- Task Management (TM)
- Automation Management (AM)
- Risk Management (RM)
- Aeronautical Decision Making (ADM)
- Situational Awareness (SA)
- Controlled Flight into Terrain (CFIT) awareness

SRM training helps a pilot maintain situational awareness by

- Managing the technology in the aircraft as well as aircraft control and navigation tasks
- Enabling the pilot to accurately assess and manage risk while making accurate and timely decisions
- Helping pilots learn how to gather information, analyze it and make decisions

In most flight scenarios, there is no one correct answer. Pilots are expected to analyze each situation in light of their

- Experience level
- Personal minimums
- Current physical and mental condition
- Ability to make their own decisions as best as possible

Below are standards for each training concept of SRM:

Performance The training task is:	**Standards** You will:
Task Management (TM)	Prioritize and select the most appropriate tasks (or series of tasks) to ensure successful completion of the training scenario.
Automation Management (AM)	Program and utilize the most appropriate and useful modes of cockpit automation to ensure successful completion of the training scenario.
Risk Management (RM)	Utilize risk management tools to assess and mitigate risk associated with the planned flight both during the preflight planning and in flight.
Aeronautical Decision Making (ADM)	Consistently make informed decisions in a timely manner based on the task at hand and a thorough knowledge and use of all available resources.
Situational Awareness (SA)	Be aware of all factors such as traffic, weather, fuel state, aircraft mechanical condition, and pilot fatigue level that may have an impact on the successful completion of the training.
Controlled Flight into Terrain (CFIT) Awareness	Understand, describe, and apply techniques to avoid CFIT encounters during system and navigational failures and physiological incidents during IFR flight.

LEARNER-CENTERED GRADING

Learner-Centered Grading includes two parts:

- Learner self-assessment
- A detailed debrief by the instructor

The purpose of the self-assessment is to stimulate growth in the learner's thought processes and, in turn, behaviors. The self-assessment is followed by an in-depth discussion between you and your flight instructor that compares your self-assessment to the instructor's assessment.

Pre- and postflight briefings are essential for setting goals and assessing if the goals were achieved. During events and tasks that require high levels of attention, there may be little time for learning as the bulk of your cognitive resources are given to performing the actual task.

INDEPENDENTLY GRADING THE SCENARIO

After the scenario is complete, you and your instructor will independently grade your performance for maneuvers and single-pilot resource management (SRM). Note that any grade that would not apply to the task has been grayed out in this syllabus.

It is very important that enough time is allowed. Simply assigning grades and signing logbooks within a limited period of time will not work with this grading system.

After independently evaluating the *actual scenario outcomes* compared to the *desired outcomes*

- You and your instructor come together to compare and discuss your individual evaluations during the postflight discussion

You and your instructor may disagree on the evaluations

- This should be used as an opportunity to discuss the scenario further
- The instructor has the ultimate authority in assigning the final grade for the desired outcomes

MANEUVER (TASK) GRADES

Describe – At the completion of the ground training session, the pilot-in-training will be able to describe the physical characteristics of the task at a rote level.

Explain – At the completion of the ground training session, the pilot-in-training will be able to describe the task and display an understanding of the underlying concepts, principles, and procedures.

Practice – At the completion of the scenario the pilot-in-training will be able to plan and execute the scenario. *Coaching, instruction, and/or assistance from the instructor will correct deviations and errors identified by the instructor.*

Perform – At the completion of the scenario, the pilot-in-training will be able to perform the activity without assistance from the instructor. *Errors and deviations will be identified and corrected by the pilot-in-training in an expeditious manner.* At no time will the successful completion of the activity be in doubt.

Not Observed – Used if an event is not accomplished or required in the scenario.

SINGLE-PILOT RESOURCE MANAGEMENT (SRM) GRADES

Explain – At the completion of the ground training session, the pilot-in-training can verbally identify the risks inherent in the flight scenario.

Practice – The pilot-in-training can identify, describe, and understand the risks inherent in the scenario. The pilot-in-training may need to be prompted to identify risks and make decisions.

Manage/Decide - The pilot-in-training can correctly gather the most important data available both within and outside the cockpit, identify possible courses of action, evaluate the risk inherent in each course of action, and make the appropriate decision. *Instructor intervention is not required for the safe completion of the flight.*

Not Observed – Used if an event is not accomplished or required in the scenario.

EVERYDAY USE OF FITS CONCEPTS

The PAVE Checklist

Use the PAVE Checklist as an easy way to implement the FITS concepts. The PAVE checklist is

- A simple way to remember and examine the risk factors before you fly, and
- Can also help you manage the specific risks associated with taking off and landing

The PAVE checklist puts risk factors into four categories:

Pilot
Aircraft
en**V**ironment
External pressures

The pilot. Are you fatigued? When was the last time you were flying in the weather conditions that you will encounter? What are your personal minimums?

The aircraft. Are you familiar with the aircraft? Its avionics? Is it airworthy? What is the density altitude? How does that affect your climb rate? What is your maximum crosswind component?

The environment. Are the temperature and dew point close? Are you familiar with the area and its topography? Are there any NOTAMs?

External pressures. Are others influencing the flight? Do you have people waiting for you at the airport?

KNOWLEDGE CONTENT

WEB-BASED KNOWLEDGE INSTRUCTION

The web-based knowledge instruction should be completed before beginning the flight scenarios in each corresponding phase; you can work ahead as far in the course as you like at your discretion.

- However, the course is designed so that the web-based knowledge instruction corresponds to the flight scenarios within a phase
- If the phase web-based knowledge instruction is incomplete, your instructor can evaluate whether you are prepared to benefit from flying a particular scenario by checking your Phase Progress Report and one-on-one discussion and questions using the Ground Training Checklist

If you have an extended time lapse between studying the web-based knowledge instruction and flying the companion scenario, you will find it very helpful to take some time to review your last knowledge sessions just before you fly the associated scenario.

You complete the web-based knowledge instruction satisfactorily by answering all the questions correctly. Your instructor will

- Review your results before you fly
- Answer any questions you may have

REQUIRED AERONAUTICAL KNOWLEDGE AREAS

The Federal Aviation Regulations, 14 CFR Parts 61 and 141, list aeronautical knowledge areas that must be included in the ground training for an Instrument Rating Course. All required areas are covered in this course, but they are distributed throughout the curriculum for subject continuity and logical development. You will find these required topics included in lessons listed as follows:

(1) Applicable Federal Aviation Regulations for IFR flight operations

PHASE 3; 3.4.2 Airspace
- The Airspace System
- Class G Airspace
- Class E Airspace
- Class D Airspace
- Class C Airspace
- Class B Airspace
- Class A Airspace

PHASE 3; 3.4.3 Weather Minimums
- VFR Weather Minimums
- Special VFR

PHASE 5; 5.1.1 Instrument Flight Rules
- Pilot and Airplane IFR Requirements
- Maintaining Your IFR Skills
- Continuing Beyond the Missed Approach Point

PHASE 7; 7.1.1 Cross-Country IFR
- IFR Procedures and Reports

PHASE 7; 7.2.1 IFR Cross-Country Planning
- IFR Flight Plan (Alternate rules)

(2) Appropriate information in the "Aeronautical Information Manual"

PHASE 6; 6.3.1 Clearances, Procedures, and Responsibilities
- Aeronautical Information Manual (AIM)

(3) Air traffic control system and procedures for instrument flight operations

PHASE 3; 3.4.1 IFR Departures
- Departing Airports With Control Towers
- Departing Airports Without Control Towers

PHASE 3; 3.4.2 Airspace
- The Airspace System

PHASE 4; 4.1.1 Holding Patterns
- The Holding Pattern
- How to Fly a Holding Pattern
- Holding Pattern Entries
- Holding at Intersections and Waypoints
- Flying Holding Patterns with the G1000

PHASE 4; 4.1.2 Arrivals
- Format and Symbols on STAR Charts
- Loading and Flying Arrival Procedures

PHASE 4; 4.2.1 Flying DME Arcs
- DME Arcs Using VOR and DME
- DME Arcs Using the G1000

PHASE 6; 6.3.1 Clearances, Procedures, and Responsibilities
- Clearances
- IFR Clearances That Include VFR Conditions
- Radar Services in the Terminal Area

(5) Use of IFR en route and instrument approach procedure charts

(6) Procurement and use of aviation weather reports and forecasts, and the elements of forecasting weather trends on the basis of that information and personal observation of weather conditions

(7) Safe and efficient operation of aircraft under instrument flight rules and conditions

PHASE 1; 1.2.2 Putting IFR Skills Together
- Good Habits for IFR Flying

PHASE 2; 2.1.2 Copying an IFR Clearance and Staying Organized
- How to Copy a Clearance
- Cockpit Organization

PHASE 3; 3.4.1 IFR Departures
- Safe IFR Departures

PHASE 8; 8.1.1 Instrument Rating Practical Test
- Your New Rating

(8) Recognition of critical weather situations and wind shear avoidance

PHASE 1; 1.4.1 IFR Risks and Hazards
- General Aviation Instrument Flying
- Risk Awareness and Recognizing Hazards

PHASE 2; 2.2.3 Moisture in the Air
- Fog
- Ice

PHASE 2; 2.2.4 Weather Hazards
- Thunderstorms
- Wind Shear
- Microbursts
- Practical Tips for Flying in Rough Weather

PHASE 7; 7.3.1 Tips and Tools
- Avoiding Special Hazards at Airports (Wake Turbulence)
- Flying in Icing Conditions

(9) Aeronautical decision making and judgment

PHASE 1; 1.4.2 Single-Pilot Resource Management (SRM)
- Aeronautical Decision Making (ADM)

PHASE 7; 7.3.1 Risk Management
- Personal Minimums
- PAVE Checklist
- CARE Checklist
- Two Rules for Safe IFR Flying

(10) Crew resource management, to include crew communication and coordination

PHASE 1; 1.4.2 Single-Pilot Resource Management (SRM)
- Single-Pilot Resource Management (SRM)

CESSNA FLIGHT TRAINING SYSTEM KNOWLEDGE TEST
Your Cessna online Instrument Rating course includes a separate FAA question review that:

- Contains examples of FAA knowledge test questions
- Provides the answers and explanations of the correct and incorrect answer choices
- Prepares you to take the Cessna Flight Training System and the FAA knowledge tests

Before graduating from the course, you will take your Cessna Flight Training System knowledge test. This test:

- Has questions covering the required FAA knowledge areas
- Counts as your flight school final knowledge exam for the course
- Is taken and proctored at your flight school using the Randomly Generated Exam feature section of your course selecting
    - Practice Exams
    - Randomly Generated Exam
    - Start New, and
    - If random exams have been taken previously, select OK to overwrite previous results

When you have finished all the questions in your Cessna Flight Training System knowledge test

- Select “Finish / Suspend”
- Select “Finish”, and then
- Your proctor will
    - Select View Exam Results
    - Print the Exam Results Summary, and
    - Select View Exam Detail and note any question not answered correctly

When you have completed the test, your instructor will:

- Review the results with you
- Assign appropriate areas for review if necessary

After taking the Cessna Flight Training System knowledge test you should then take the FAA airman knowledge test as soon as possible, since the information will be fresh in your memory.

CREDIT FOR PREVIOUS TRAINING (WHEN ENROLLING INTO PART 141 CURRICULUM)
According to FAR 141.77(c), when you transfer from one FAA-approved school to another approved school, course credits you earned in your previous course of training may be credited for part of your training by your new school.

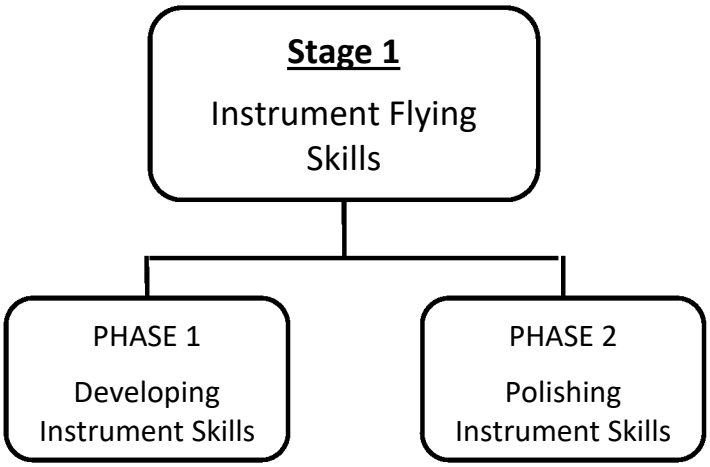
- Your new school may determine the amount of credit you are allowed by a knowledge test and a flight proficiency test
- Credit for aeronautical knowledge instruction may be determined by a knowledge test alone
- Maximum credit allowed is 50% of the curriculum requirements of your new school

If you transfer from other than an FAA-approved school, you may receive credit for the knowledge and flight experience. Up to a maximum of 25% of the curriculum requirements of the course to which you are transferring to may be credited.

CREDIT FOR PREVIOUS TRAINING (WHEN ENROLLING INTO PART 61 CURRICULUM)
If you are enrolling into a Part 61 course, all flight training logged, from an authorized instructor, applies to the minimum required flight time under Part 61. Your new flight school will:

- Evaluate your flight proficiency and knowledge in all required areas of operation and aeronautical knowledge
- Determine the appropriate starting point in the syllabus to continue your training

GUARANTEE OF QUALITY
This multimedia online pilot training system is available exclusively through flight schools using the Cessna Flight Training System. It is structured so that you receive the highest quality pilot training at your flight school.



Stage 1 consists of two Phases

- Developing Instrument Skills
- Polishing Instrument Skills

Stage Objective: During this stage you will

- Become familiar with the training airplane
- Review safe practices and checklist usage
- Review runway incursion avoidance procedures
- Safely control the airplane using proper instrument cross-check and interpretation
- Fly in simulated or actual instrument conditions using basic instrument flight maneuvers
- Learn how to file an IFR flight plan and receive an IFR clearance
- Practice flying by reference to instruments without the use of a heading indicator
- Become familiar with controlling the airplane without reference to the primary flight instruments
- Be able to recover from unusual flight attitudes with reference to instruments only
- Fly with a check instructor to evaluate your progress and instructor pairing

Each phase contains **Web-based Knowledge Instruction**

- The web-based knowledge instruction for the phase should be completed prior to starting the flight scenarios to ensure fundamental knowledge before the flight.

Each phase contains multiple **Flight Scenarios** that can be

- Customized for your local training environment
- Repeated, or
- Omitted if all items in the Phase Proficiency Checklist are completed to standard.

At the end of each Phase are the **Ground Training Checklist** and **Phase Proficiency Checklist**

- All items in the checklist must be completed to the appropriate standard listed before the Phase is considered complete.

PHASE 1: Developing Instrument Skills

Phase Objective: During this phase you will learn

- Preflight preparation for IFR flight
- Instrument scan techniques
- Basic instrument flight maneuvers
- Use of the magnetic compass and timed turns in the case of a heading indicator failure
- Postflight procedures for IFR flight

Web-based KNOWLEDGE

EXPLORING INSTRUMENT FLYING
FLIGHT INSTRUMENTS
RADIO NAVIGATION AIDS AND THE MAGNETIC COMPASS
SINGLE-PILOT RESOURCE MANAGEMENT

1.1 EXPLORING INSTRUMENT FLYING

Objectives: You will learn about human sensory systems, how to control the airplane by reference to instruments only, and the importance of checking your instruments before flight.

1.1.1 Becoming an Instrument-Rated Pilot
- How You'll Become Instrument-Rated

1.1.2 Physiology
- Sensory Systems
- Spatial Disorientation

1.1.3 Instrument Flying Technique
- Heading and Altitude
- Leaving Straight-and-Level
- Primary Instruments
- Supporting Instruments

1.1.4 Getting Ready for Flight
- Before You Get Into the Airplane
- IFR Preflight
- Checking the Instruments

1.2 FLIGHT INSTRUMENTS

Objective: You will understand how electronic and standby flight instruments work along with their associated systems.

1.2.1 Flight Instruments
- Gyroscopic Principles and Attitude Heading Reference Systems (AHRS)
- How Your Attitude and Heading Gyros Work
- How Your Electric Turn Coordinator Gyro Works
- Pressure Sensing Flight Instruments and Air Data Computers (ADC)
- Pitot or Static System Blockage
- Altitude Types and How to Read the Altimeter
- Using the G1000 PFD
- Using the G1000 MFD

1.2.2 Putting IFR Skills Together
- Good Habits for IFR Flying
- Turning Climbs and Descents

1.3 RADIO NAVIGATION AIDS AND THE MAGNETIC COMPASS

Objective: You will gain understanding of VORs, how speed affects turn radius, and how to use a magnetic compass and clock when the heading indicator has failed.

1.3.1 Electronic Navigation Aids
- VHF Omni-directional Range (VOR)
- Using the VOR
- Horizontal Situation Indicator (HSI)
- Distance Measuring Equipment (DME)
- Understanding RNAV and GPS

1.3.2 Turns
- Understanding Forces in a Turn and Controlling Load Factor
- Limiting Load Factor in Turbulence
- Controlling Your Rate and Radius of Turn

1.3.3 Flying Without a Heading Indicator
- Magnetic Compass Errors
- Timed Turns

1.4 SINGLE-PILOT RESOURCE MANAGEMENT

Objective: You will discover the art and science of managing all resources available to a pilot to ensure the successful outcome of a flight.

1.4.1 IFR Risks and Hazards
- General Aviation Instrument Flying
- Risk Awareness and Recognizing Hazards

1.4.2 Single-Pilot Resource Management (SRM)
- Single-Pilot Resource Management (SRM)
- Risk Management (RM)
- Task Management (TM)
- Situational Awareness (SA)
- Controlled Flight Into Terrain (CFIT) Awareness
- Automation Management (AM)
- Aeronautical Decision Making (ADM)

FLIGHT SCENARIOS

DEVELOPING YOUR INSTRUMENT SCAN
IMPROVING YOUR INSTRUMENT SKILLS
LOSS OF HEADING INDICATOR (G1000)
LOSS OF HEADING INDICATOR (ANALOG)

Flight scenarios will be repeated as necessary to reach the desired proficiency

SCENARIO 1: Developing Your Instrument Scan

Objective:
Understand instrument preflight procedures and the preparation necessary for an IFR flight. Experience flying by reference to instruments only while developing proper instrument cross-check and interpretation skills, and aircraft control skills.
Purpose/pressures (real or simulated):
You have just purchased a new airplane and have arranged to fly it home from the manufacturer with an experienced, but non-instrument rated, pilot friend. You have a narrow window following your factory training to pick up the plane, or you will have to wait a month. You have to be in your office the next day.
Where to go:
A point within 30 minutes flight time that is in suitable airspace free from obstructions and dense traffic
How to get there:
Vectors
Planned deviations:
As necessary to react to inadvertent IMC
Planned malfunctions:
None
Risks (real or simulated):
Marginal VFR at departure, expected to be clear at your home field (VFR pilot possibly flying into IMC / spatial disorientation)
Unfamiliarity with new airplane and new avionics
Overconfidence because of the second pilot

New this scenario:
Evaluating weather information
Preflight inspection
Checklist usage
Instrument cockpit check
Cockpit management
Positive exchange of flight controls
Collision avoidance (visually and in response to ATC traffic calls)
Correlating airport diagrams with taxiway and runway signs and markings
Pitch and power settings required for basic instrument maneuvers
Basic instrument flight maneuvers
- Straight-and-level flight
- Standard rate level turns
- Constant airspeed climbs and descents
- Level-offs

Postflight procedures

SCENARIO 2: Improving Your Instrument Skills

FSTD MAY BE USED

Note: Although you may use an FSTD for this scenario, the maximum time that may be credited in an FSTD depends on the device category (FFS, FTD, AATD, BATD) and course enrollment (Part 61 or Part 141). E.g., a Part 61 course allows 10 hours instrument time in a BATD or 20 hours in an AATD [§61.65(i)]. The Part 141 course maximum is 25% (BATD) or 40% (AATD) of the total instrument training requirement (35 hours) [§141 Appendix C, 4.(b)(3)]. See §61.65(h) or §141 Appendix C, 4.(b)(1)-(3) for FFS or FTD.

Objective:
Continue learning the preparation necessary for an IFR flight and improve your instrument flying skills including instrument cross-check and interpretation, and aircraft control.

Purpose/pressures (real or simulated):
You have planned to fly to a nearby airport for an air show. You will be running a booth there for your business.

Where to go:
A point within 30 minutes flight time that is in suitable airspace free from obstructions and dense traffic

How to get there:
Vectors

Planned deviations:
As necessary to react to inadvertent IMC

Planned malfunctions:
None

Risks (real or simulated):
Unreported low ceilings and visibilities en route (VFR pilot possibly flying into IMC / spatial disorientation)

New this scenario:
Preflight preparation
- Weather briefing and/or acceptable weather sources
- Takeoff and landing data
- Weight and balance
- Charts
- Risk management

Basic instrument flight maneuvers
- Airspeed changes in level flight
- 180-degree standard rate turns
- Constant rate climbs and descents
- Constant rate climbs and descents with constant airspeed
- Turning climbs and descents

Improving your skills:
Evaluating weather information
Preflight inspection
Checklist usage
Instrument cockpit check
Cockpit management
Positive exchange of flight controls
Collision avoidance (visually and in response to ATC traffic calls)
Correlating airport diagrams with taxiway and runway signs and markings
Pitch and power setting required for basic instrument maneuvers
Basic instrument flight maneuvers
- Straight-and-level flight
- Standard rate level turns
- Constant airspeed climbs and descents
- Turning climbs and descents
- Level-offs

Postflight procedures

SCENARIO 3: Loss of Heading Indicator (G1000)

SCENARIOS 3 AND 4 ARE EQUIVALENT. IF YOU CHOOSE TO FLY SCENARIO 3, IT MUST BE FLOWN IN A G1000-EQUIPPED AIRPLANE.

Objective:
Improve basic control while flying by reference to instruments only, and learn how to use the compass in the event of an unreliable heading indicator.
Purpose/pressures (real or simulated):
You are an aerial photographer that has been contracted by a local land development company to take pictures of a proposed building site. The company needs the pictures by 8 am tomorrow.
Where to go:
A point within 30 minutes flight time in suitable airspace free from obstructions and dense traffic
How to get there:
Vectors
Planned deviations:
None
Planned malfunctions:
Red X on HSI (simulated with PFD mask; reversionary mode not available)
Risks (real or simulated):
Ceiling drops as you approach the site (inadvertent IMC and possible loss of control)
Loss of HSI (subsequently difficulty in following ATC instructions)
Revised primary instrument scan (possible loss of control)

New this scenario:
Loss of primary flight instrument- heading indicator
Compass turns to magnetic headings
Timed turns to magnetic headings

Improving your skills:
Preflight preparation
- Weather briefing and/or acceptable weather resources
- Takeoff and landing data
- Weight and balance
- Charts
- Risk management

Preflight inspection
Checklist usage
Instrument cockpit check
Cockpit management
Correlating airport diagrams with taxiway and runway signs and markings
Basic instrument flight maneuvers
- Straight-and-level flight
- Standard rate level turns
- 180-degree standard rate turns
- Airspeed changes in level flight
- Constant airspeed climbs and descents
- Constant rate climbs and descents with constant airspeed
- Turning climbs and descents
- Level-offs

Postflight procedures

SCENARIO 4: Loss of Heading Indicator (ANALOG)

SCENARIOS 3 AND 4 ARE EQUIVALENT. IF YOU CHOOSE TO FLY SCENARIO 4, IT MUST BE FLOWN IN AN AIRPLANE WITH ANALOG FLIGHT INSTRUMENTS.

Objective:
Improve basic control while flying by reference to instruments only, and learn how to use the compass in the event of an unreliable heading indicator.
Purpose/pressures (real or simulated):
You are an aerial photographer who has been contracted by a local land development company to take pictures of a proposed building site. The company needs the pictures by 8 am tomorrow.
Where to go:
A point within 30 minutes flight time in suitable airspace free from obstructions and dense traffic
How to get there:
Vectors
Planned deviations:
None
Planned malfunctions:
Heading indicator becomes unreliable (simulated with cover over heading indicator)
Risks (real or simulated):
Ceiling drops as you are approaching the area of the development site (inadvertent IMC)
Unreliable heading indicator (subsequent difficulty in following ATC instructions)

New this scenario:
Loss of primary flight instrument / heading indicator
Compass turns to magnetic headings
Timed turns to magnetic headings

Improving your skills:
Preflight preparation
- Weather briefing and/or acceptable weather resources
- Takeoff and landing data
- Weight and balance
- Charts
- Risk management

Preflight inspection
Checklist usage
Instrument cockpit check
Cockpit management
Correlating airport diagrams with taxiway and runway signs and markings
Basic instrument flight maneuvers
- Straight-and-level flight
- Standard rate level turns
- 180-degree standard rate turns
- Airspeed changes in level flight
- Constant airspeed climbs and descents
- Constant rate climbs and descents with constant airspeed
- Turning climbs and descents
- Level-offs

Postflight procedures

Phase 1 Ground Training Checklist

*All items to be graded independently by the instructor and customer, then discussed and a final grade assessed. *Desired outcome for all tasks by the end of the phase is "Explain"*	Instruction Given	Describe	Explain
Safety practices and procedures			
Study material and habits			
Preflight preparation for an IFR flight			
Instrument cockpit check			
Aircraft systems related to IFR operations			
Aircraft flight instruments and navigation equipment			
Single-pilot resource management (SRM)			
Instrument Rating Airman Certification Standards (ACS)			
Attitude instrument flying- Primary and supporting method vs. control and performance concept			

Phase 1 Proficiency Checklist

*All items to be graded independently by the instructor and customer, then discussed and a final grade assessed. *Desired outcome for all tasks by the end of the phase is "Perform" or "Manage/Decide"*	Practice	Perform	Manage / Decide
Single-pilot resource management			
Risk management *Is able to identify any problem, analyze the information and make an informed decision with assistance*			
Preflight procedures			
Evaluating weather information *Can accurately evaluate weather data from an FAA-approved source*			
Weather briefing and/or acceptable weather sources *Knows FAA-approved weather resources and proper format to request an IFR weather briefing*			
Takeoff and landing data *Accurately calculates the required takeoff and landing distances*			
Weight and balance *Determines that the flight will be conducted within weight and balance limitations*			
Charts *Has current aeronautical charts and publications*			
Preflight inspection *Can perform a safe preflight inspection without instructor assistance*			
Cockpit management *Organizes the cockpit, has easy access to the checklist and utilizes items such as a kneeboard, paper and pen/pencil to record information*			
Checklist usage *Uses checklist for preflight and all phases of flight*			
Positive exchange of flight controls *Uses the 3-part verification system to confirm who has control of the airplane*			
Correlating airport diagrams with taxiway and runway signs and markings *Uses the airport diagram, if available, for situational awareness*			
Instrument cockpit check *Performs an instrument cockpit check to ensure all required items are in working order prior to flight*			

Phase 1 Proficiency Checklist *continued*

In-flight			
Collision avoidance (visually and in response to ATC traffic calls) *Uses resources to ensure collision avoidance and responds to ATC traffic calls*			
Pitch and power settings required for basic instrument maneuvers *Knows and uses appropriate pitch and power settings*			
Straight-and-level flight *Uses proper techniques and power settings to achieve level flight: altitude ±250 feet, heading ±20°*			
Airspeed changes in level flight *Adjusts pitch and power as necessary to adjust speed and trims as appropriate to maintain level flight*			
Standard-rate level turns *Uses instrumentation to assist in achieving standard rate turns during simulated or actual IFR*			
180 degree standard-rate turns *Uses a standard rate turn to achieve a course reversal*			
Constant airspeed climbs and descents *Utilizes a constant power setting and uses pitch to control airspeed*			
Constant rate climbs and descents *Utilizes a constant power setting and uses pitch to control vertical speed*			
Constant rate climbs and descents with constant airspeed *Uses power setting and pitch to control desired vertical speed and airspeed*			
Turning climbs and descents *Uses proper rudder/control wheel inputs to maintain coordinated flight and uses standard rate*			
Level-offs *Sets pitch, applies power as appropriate, and then trims as appropriate*			
Loss of primary flight instrument—heading indicator *Assesses instrument loss and incorporates magnetic compass into scan for heading control*			
Compass turns to magnetic headings *Displays understanding of compass dip errors, maintains ±10° bank, ±150 feet altitude, and rolls out ±20° to assigned heading*			
Timed turns to magnetic headings *Maintains ±10° bank, ±150 feet altitude and rolls out ±20° to assigned heading*			
Postflight procedures			
After landing, parking and securing *Completes appropriate checklists*			

Phase 1 completion standards:

You have completed Phase 1 when you

- Know and can complete all preflight preparation required for an instrument flight
- Can determine the airplane is safe for IFR flight
- Can safely control the airplane by reference to instruments only
- Can perform basic instrument flight maneuvers
- Have reviewed the Phase Progress Report with your instructor

INSTRUCTOR NOTES:

PHASE 2: Polishing Instrument Skills

Phase Objective: During this phase you will develop the skills necessary to

- File an IFR flight plan
- Receive, copy and fly an IFR clearance
- More precisely control the airplane by reference to instruments only
- Control the airplane with failure of primary flight instruments
- Recover from an unusual flight attitude

Web-based KNOWLEDGE

IFR ENROUTE CHARTS, CLEARANCES, AND STAYING ORGANIZED
UNDERSTANDING THE WEATHER
INSTRUMENT FAILURES AND UNUSUAL ATTITUDES
READING THE WEATHER

2.1 IFR ENROUTE CHARTS, CLEARANCES, AND STAYING ORGANIZED

Objective: You will explore IFR low altitude enroute charts, techniques for writing down an ATC clearance, and how to stay organized.

2.1.1 Low Altitude Enroute Charts
- Airspace
- Airports and Navaids
- Airways
- Intersections and Reporting Points
- Altitudes
- More Altitudes

2.1.2 Copying an IFR Clearance and Staying Organized
- How to Copy a Clearance
- Cockpit Organization

2.2 UNDERSTANDING THE WEATHER

Objective: You will know the causes of various weather conditions, frontal systems, and hazardous weather phenomena.

2.2.1 Weather Theory
- What Makes Weather
- The Atmosphere
- Wind Circulation
- Water Vapor and Cloud Types

2.2.2 Weather Patterns
- Stable and Unstable Air
- Air Masses and Fronts

2.2.3 Moisture in the Air
- Fog
- Ice

2.2.4 Weather Hazards
- Thunderstorms
- Wind Shear
- Microbursts
- Practical Tips for Flying in Rough Weather

2.3 INSTRUMENT FAILURES AND UNUSUAL ATTITUDES

Objective: You will identify when an instrument or system has failed and be able to recognize and recover from an unusual attitude.

2.3.1 Instrument Failure

- G1000 Failures Including AHRS and ADC
- Figuring Out Which Instruments Have Failed
- Partial Panel
- Recovering From Unusual Attitudes

2.4 READING THE WEATHER

Objective: You will gain skill in reading weather reports, forecasts, and interpreting weather charts.

2.4.1 Current Weather Reports

- Aviation Routine Weather Report (METAR)
- Automated Weather Observations (ASOS/AWOS)

2.4.2 Weather Forecasts

- Terminal Aerodrome Forecast (TAF)
- Graphical Forecasts for Aviation (GFA)
- Winds and Temperatures Aloft Forecast (FD)

2.4.3 In-Flight Weather Advisories and Services

- In-Flight Weather Advisories
- Supplemental and In-Flight Weather Services

2.4.4 Current Weather Charts

- Surface Analysis Chart
- Weather Depiction Chart
- Weather Radar Information

2.4.5 Forecast Weather and Upper Air Charts

- Low Level Significant Weather Prognostic Charts
- High Level Significant Weather Prognostic Charts
- Severe Weather Forecasts
- More Upper Air Charts

FLIGHT SCENARIOS

IFR FLIGHT PREPARATION AND CLEARANCE
UNUSUAL ATTITUDES AND FAILED INSTRUMENTS (G1000)
UNUSUAL ATTITUDES AND FAILED INSTRUMENTS (ANALOG)
UNUSUAL ATTITUDES AND FAILED INSTRUMENTS (G1000 FSTD)
INCREASING PROFICIENCY (G1000)
INCREASING PROFICIENCY (ANALOG)
PROGRESS STAGE 1 CHECK* (G1000)
PROGRESS STAGE 1 CHECK* (ANALOG)

Flight scenarios will be repeated as necessary to reach the desired proficiency
Please note that “Postflight procedures”, such as “After landing, parking and securing”, will be omitted from each Phase Proficiency Checklist hereon and are expected to be performed as a part of normal flight procedures

SCENARIO 1: IFR Flight Preparation and Clearance

FSTD MAY BE USED

Note: Although you may use an FSTD for this scenario, the maximum time that may be credited in an FSTD depends on the device category (FFS, FTD, AATD, BATD) and course enrollment (Part 61 or Part 141). E.g., a Part 61 course allows 10 hours instrument time in a BATD or 20 hours in an AATD [§61.65(i)]. The Part 141 course maximum is 25% (BATD) or 40% (AATD) of the total instrument training requirement (35 hours) [§141 Appendix C, 4.(b)(3)]. See §61.65(h) or §141 Appendix C, 4.(b)(1)-(3) for FFS or FTD.

Objective:
Develop skills in preparing for an IFR flight including: weather briefings, filing the flight plan, and copying, understanding, and flying an IFR clearance.

Purpose/pressures (real or simulated):
You are on a scheduled out and return training flight to an airport less than 50 nautical miles away and will drop off an airplane part for a stranded pilot. You need to hurry to get the part there before the mechanic goes home.

Where to go:
A nearby airport with an instrument approach

How to get there:
Follow your instrument clearance, vectors

Planned deviations:
None

Planned malfunctions:
None

Risks (real or simulated):
Lack of familiarity with copying clearances (likelihood of misunderstanding clearance)

New this scenario:
Filing an IFR flight plan
Alternate planning
How to receive your clearance
Copying your clearance
Compliance with ATC clearance(s)

Improving your skills:
Preflight preparation
Preflight inspection
Checklist usage
Cockpit management
Collision avoidance
Basic instrument flight maneuvers
Timed turns to magnetic headings
Compass turns to magnetic headings

SCENARIO 2: Unusual Attitudes and Failed Instruments (G1000)

G1000 FSTD MAY BE USED

SCENARIOS 2, 3 AND 4 ARE EQUIVALENT. IF YOU CHOOSE TO FLY SCENARIO 2, IT MUST BE FLOWN IN A G1000-EQUIPPED AIRPLANE OR FSTD.

Note: Although you may use an FSTD for this scenario, the maximum time that may be credited in an FSTD depends on the device category (FFS, FTD, AATD, BATD) and course enrollment (Part 61 or Part 141). E.g., a Part 61 course allows 10 hours instrument time in a BATD or 20 hours in an AATD [§61.65(i)]. The Part 141 course maximum is 25% (BATD) or 40% (AATD) of the total instrument training requirement (35 hours) [§141 Appendix C, 4.(b)(3)]. See §61.65(h) or §141 Appendix C, 4.(b)(1)-(3) for FFS or FTD.

Objective:
Recover the airplane from unusual flight attitudes, recognize primary flight instrument failures and control the aircraft using standby instruments.

Purpose/pressures (real or simulated):
You and a friend are flying to an airport 80 miles away for an aerobatic competition he has entered. To participate, your friend must attend the mandatory 7 am pilot briefing.

Where to go:
A point within 20 minutes flight time that is in suitable airspace free from obstructions and dense traffic

How to get there:
Vectors and/or simulated clearance

Planned deviations:
To a suitable airport to deal with failures

Planned malfunctions:
PFD failure (simulated by dimming the PFD) (not simultaneously with next malfunction)
AHRS and ADC failure (simulated with PFD mask; reversionary mode not available)

Risks (real or simulated):
Departure airport weather is broken at 2,200 feet and tops are unknown as there are no PIREPS
Mountain ridge between your departure and destination airports, with strong winds aloft (turbulence and possible loss of control)
Loss of primary flight display (PFD) (possible loss of control)
Loss of all primary flight instruments (possible loss of control)

New this scenario:
Loss of primary flight instruments
Recovery from unusual flight attitudes

Improving your skills:
Preflight preparation
Preflight inspection
Compliance with ATC clearance(s)
Runway incursion avoidance procedures
Collision avoidance
Basic instrument flight maneuvers

SCENARIO 3: Unusual Attitudes and Failed Instruments (ANALOG)

ANALOG FSTD MAY BE USED

SCENARIOS 2, 3, AND 4 ARE EQUIVALENT. IF YOU CHOOSE TO FLY SCENARIO 3, IT MUST BE FLOWN IN AN AIRPLANE OR FSTD WITH ANALOG FLIGHT INSTRUMENTS.

Note: Although you may use an FSTD for this scenario, the maximum time that may be credited in an FSTD depends on the device category (FFS, FTD, AATD, BATD) and course enrollment (Part 61 or Part 141). E.g., a Part 61 course allows 10 hours instrument time in a BATD or 20 hours in an AATD [§61.65(i)]. The Part 141 course maximum is 25% (BATD) or 40% (AATD) of the total instrument training requirement (35 hours) [§141 Appendix C, 4.(b)(3)]. See §61.65(h) or §141 Appendix C, 4.(b)(1)-(3) for FFS or FTD.

Objective:
Recover the airplane from unusual flight attitudes, recognize primary flight instrument failures and control the aircraft using the remaining instruments.

Purpose/pressures (real or simulated):
You and a friend are flying to an airport 80 miles away for an aerobatic competition he has entered. To participate, your friend must attend the mandatory 7:00 am pilot briefing.

Where to go:
A point within 20 minutes flight time that is in suitable airspace free from obstructions and dense traffic

How to get there:
Vectors and/or simulated clearance

Planned deviations:
To a suitable airport to deal with failures

Planned malfunctions:
Vacuum system failure (simulated with covers over attitude indicator and heading indicator) (not simultaneously with next malfunction)
Clogged pitot tube (simulated with cover over airspeed indicator) (not simultaneously with previous malfunction)

Risks (real or simulated):
Departure airport weather is broken at 2,200 feet and tops are unknown as there are no PIREPS
Mountain ridge between your departure and destination airports, with strong winds aloft (turbulence and possible loss of control)
Loss of attitude indicator and heading indicator (possible loss of control)
Loss of airspeed indicator (possible loss of control)

New this scenario:
Loss of primary flight instruments
Recovery from unusual flight attitudes

Improving your skills:
Preflight preparation
Preflight inspection
Compliance with ATC clearance(s)
Runway incursion avoidance procedures
Collision avoidance
Basic instrument flight maneuvers

SCENARIO 4: Unusual Attitudes and Failed Instruments (G1000 FSTD)

G1000 FSTD ONLY

SCENARIOS 2, 3, AND 4 ARE EQUIVALENT. IF YOU CHOOSE TO FLY SCENARIO 4, IT MUST BE FLOWN IN A SUITABLE G1000 FSTD.

Note: Although you may use an FSTD for this scenario, the maximum time that may be credited in an FSTD depends on the device category (FFS, FTD, AATD, BATD) and course enrollment (Part 61 or Part 141). E.g., a Part 61 course allows 10 hours instrument time in a BATD or 20 hours in an AATD [§61.65(i)]. The Part 141 course maximum is 25% (BATD) or 40% (AATD) of the total instrument training requirement (35 hours) [§141 Appendix C, 4.(b)(3)]. See §61.65(h) or §141 Appendix C, 4.(b)(1)-(3) for FFS or FTD.

Objective:
Recover from unusual flight attitudes, recognize primary flight instrument failures and control the aircraft using standby instruments.

Purpose/pressures (real or simulated):
You and a friend are flying to an airport 80 miles away for an aerobatic competition he has entered. To participate, your friend must attend the mandatory 7:00 am pilot briefing.

Where to go:
A point within 20 minutes flight time that is in suitable airspace free from obstructions and dense traffic

How to get there:
Vectors and/or simulated clearance

Planned deviations:
To a suitable airport to deal with failures

Planned malfunctions:
PFD failure (simulated by dimming the PFD) (not simultaneously with next malfunction)
AHRS failure (ATD simulation—reversionary mode does not fix) (not simultaneously with previous malfunction)
ADC failure (ATD simulation—reversionary mode does not fix) (not simultaneously with previous malfunctions)
AHRS and ADC failure (ATD simulation—reversionary mode does not fix)

Risks (real or simulated):
Departure airport weather is broken at 2,200 feet and tops are unknown as there are no PIREPS
Mountain ridge between your departure and destination airports, with strong winds aloft (turbulence and possible loss of control)
Loss of primary flight display (PFD) (possible loss of control)
Loss of primary attitude indicator (possible loss of control)
Loss of all primary flight instruments (possible loss of control)

New this scenario
Loss of primary flight instruments
Recovery from unusual flight attitudes

Improving your skills:
Preflight preparation
Preflight inspection
Compliance with ATC clearance(s)
Runway incursion avoidance procedures
Collision avoidance
Basic instrument flight maneuvers

SCENARIO 5: Increasing Proficiency (G1000)

G1000 FSTD MAY BE USED

SCENARIOS 5 AND 6 ARE EQUIVALENT. IF YOU CHOOSE TO FLY SCENARIO 5, IT MUST BE FLOWN IN G1000-EQUIPPED AIRPLANE OR FSTD.

Note: Although you may use an FSTD for this scenario, the maximum time that may be credited in an FSTD depends on the device category (FFS, FTD, AATD, BATD) and course enrollment (Part 61 or Part 141). E.g., a Part 61 course allows 10 hours instrument time in a BATD or 20 hours in an AATD [§61.65(i)]. The Part 141 course maximum is 25% (BATD) or 40% (AATD) of the total instrument training requirement (35 hours) [§141 Appendix C, 4.(b)(3)]. See §61.65(h) or §141 Appendix C, 4.(b)(1)-(3) for FFS or FTD.

Objective:
Increase your proficiency and accuracy with instrument cross-check and interpretation, and aircraft control.
Purpose/pressures (real or simulated):
You are taking a flight to accomplish important surveillance work. You are under contract to complete the survey within 24 hours.
Where to go:
A point within 20 minutes flight time that is in suitable airspace free from obstructions and dense traffic
How to get there:
Vectors and/or clearance
Planned deviations:
None
Planned malfunctions:
AHRS and ADC failure (simulated with PFD mask; reversionary mode not available)
Risks (real or simulated):
Area forecast calls for low ceilings and visibilities (inadvertent IMC)
Primary instrument failures (loss of control)

Improving your skills:
Preflight preparation
Compliance with ATC clearance(s)
Basic instrument flight maneuvers
Loss of primary flight instruments
Recovery from unusual flight attitudes
Timed turns to magnetic headings
Compass turns to magnetic headings

SCENARIO 6: Increasing Proficiency (ANALOG)

ANALOG FSTD MAY BE USED

SCENARIOS 5 AND 6 ARE EQUIVALENT. IF YOU CHOOSE TO FLY SCENARIO 6, IT MUST BE FLOWN IN AN AIRPLANE OR FSTD WITH ANALOG FLIGHT INSTRUMENTS.

Note: Although you may use an FSTD for this scenario, the maximum time that may be credited in an FSTD depends on the device category (FFS, FTD, AATD, BATD) and course enrollment (Part 61 or Part 141). E.g., a Part 61 course allows 10 hours instrument time in a BATD or 20 hours in an AATD [§61.65(i)]. The Part 141 course maximum is 25% (BATD) or 40% (AATD) of the total instrument training requirement (35 hours) [§141 Appendix C, 4.(b)(3)]. See §61.65(h) or §141 Appendix C, 4.(b)(1)-(3) for FFS or FTD.

Objective:
Increase your proficiency and accuracy with instrument cross-check and interpretation, and aircraft control.
Purpose/pressures (real or simulated):
You are taking a flight to accomplish important surveillance work. You are under contract to complete the survey within 24 hours.
Where to go:
A point within 20 minutes flight time that is in suitable airspace free from obstructions and dense traffic
How to get there:
Vectors and/or clearance
Planned deviations:
None
Planned malfunctions:
Vacuum system failure (simulated with covers over attitude indicator and heading indicator)
Risks (real or simulated):
Area forecast calls for low ceilings and visibilities (inadvertent IMC)
Primary instrument failures (loss of control)

Improving your skills:
Preflight preparation
Compliance with ATC clearance(s)
Basic instrument flight maneuvers
Loss of primary flight instrument indicators
Recovery from unusual flight attitudes
Timed turns to magnetic headings
Compass turns to magnetic headings

Phase 2 Ground Training Checklist

*All items to be graded independently by the instructor and customer, then discussed and a final grade assessed. *Desired outcome for all tasks by the end of the phase is "Explain"*	Instruction Given	Describe	Explain
Shorthand to write down the clearance			
System and instrument failures affecting IFR flights			
Recovery from unusual flight attitudes			

Phase 2 Proficiency Checklist

*All items to be graded independently by the instructor and customer, then discussed and a final grade assessed. *Desired outcome for all tasks by the end of the phase is "Perform" or "Manage/Decide"*	Practice	Perform	Manage/ Decide
Single-pilot resource management			
Risk management *Is able to identify any problem, analyze the information and make an informed decision with assistance*			
Preflight procedures			
Preflight preparation *Performs necessary items such as weather, takeoff and landing data, weight and balance, appropriate charts, and applies risk management in decision making*			
Preflight inspection *Performs a preflight inspection finding the airplane airworthy for instrument flight*			
Filing an IFR flight plan *Knows and uses the appropriate format to file an IFR flight plan*			
Alternate planning *Recognizes when alternate planning is required or necessary*			
How to receive your clearance *Knows how to contact ATC to receive an IFR clearance*			
Copying your clearance *Uses shorthand to copy an IFR clearance*			
Runway incursion avoidance procedures *Uses airport diagrams and writes down taxi clearances*			
Checklist usage *Uses checklist for preflight and all phases of flight*			
Cockpit management *Effectively maintains an organized cockpit environment and has necessary items within reach*			
In-flight			
Collision avoidance *Uses resources to ensure collision avoidance and responds to ATC traffic calls*			
Basic instrument flight maneuvers *Maintains altitude ±150 feet, airspeed ±10 knots, heading ±15 degrees, bank ±5 degrees*			
Timed turns to magnetic headings *Rolls out ±15 degrees of the desired heading and uses standard-rate turns*			
Compass turns to magnetic headings *Knows the errors associated with the magnetic compass and can achieve desired headings*			
Compliance with ATC clearances *Complies with clearances as necessary maintaining altitude ±150 feet and heading ±15 degrees*			

Phase 2 Proficiency Checklist *continued*

Loss of primary flight instruments *Recognizes the loss of a primary flight instrument indicator and safely controls the airplane without use of primary instruments, reports failure to ATC as necessary*			
Recovery from unusual flight attitudes *Recovers using proper pitch, power, and bank inputs and restores positive aircraft control*			

Phase 2 completion standards:

You have completed Phase 2 when you

- Can accurately and safely prepare for an IFR flight
- Have improved your ability to more precisely fly basic instrument maneuvers
- Can use the magnetic compass and time to make turns to a desired heading
- Can copy, understand, and fly a clearance
- Have reviewed the Phase Progress Report with your instructor
- Pass the Progress Check

INSTRUCTOR NOTES:

SCENARIO 7: *Progress Stage 1 Check* (G1000)

The Progress Check is to be completed after completing the Phase 2 Proficiency Checklist. An appropriate instructor will check the progress of your learning and the effective pairing of you and your primary instructor.

SCENARIOS 7 AND 8 ARE EQUIVALENT. IF YOU CHOOSE TO FLY SCENARIO 7, IT MUST BE FLOWN IN A G1000-EQUIPPED AIRPLANE.

Objective:
To check that your progress in the course is sufficient to move to the next phase of training
Purpose/pressures (real or simulated):
You have an opportunity to do aerial survey work and you are being evaluated on your ability to use the instruments to precisely fly the airplane.
Where to go:
A point within 30 minutes that is suitable airspace free from obstructions and dense traffic
How to get there:
Vectors and/or clearance
Planned deviations:
None
Planned malfunctions:
AHRS and ADC failure (simulated with PFD mask; reversionary mode not available)
Risks (real or simulated):
Stress that arises with having your performance evaluated

Checking your knowledge and skills:
Preflight preparation
- Weather briefing and/or acceptable weather resources
- Takeoff and landing data
- Weight and balance
- Charts
- Risk management

Preflight inspection
Checklist usage
Instrument cockpit check
Cockpit management
Collision avoidance
Runway incursion avoidance
Basic instrument flight maneuvers
Loss of primary flight instruments
Timed turns to magnetic headings
Compass turns to magnetic headings
Recovery from unusual flight attitudes
Postflight procedures

SCENARIO 8: *Progress Stage 1 Check* (ANALOG)

The Progress Check is to be completed after completing the Phase 2 Proficiency Checklist. An appropriate instructor will check the progress of your learning and the effective pairing of you and your primary instructor.
SCENARIOS 7 AND 8 ARE EQUIVALENT. IF YOU CHOOSE TO FLY SCENARIO 8, IT MUST BE FLOWN IN AN AIRPLANE WITH ANALOG FLIGHT INSTRUMENTS.

Objective:
To check that your progress in the course is sufficient to move to the next phase of training
Purpose/pressures (real or simulated):
You have an opportunity to do aerial survey work and you are being evaluated on your ability to use the instruments to precisely fly the airplane.
Where to go:
A point within 30 minutes that is suitable airspace free from obstructions and dense traffic
How to get there:
Vectors and/or clearance
Planned deviations:
None
Planned malfunctions:
Vacuum system failure (simulated with covers over attitude indicator and heading indicator)
Risks (real or simulated):
Stress that arises with having your performance evaluated

Checking your knowledge and skills:
Preflight preparation
- Weather briefing and/or acceptable weather resources
- Takeoff and landing data
- Weight and balance
- Charts
- Risk management

Preflight inspection
Checklist usage
Instrument cockpit check
Cockpit management
Collision avoidance
Runway incursion avoidance
Basic instrument flight maneuvers
Loss of primary flight instruments
Timed turns to magnetic headings
Compass turns to magnetic headings
Recovery from unusual flight attitudes
Postflight procedures

Phase 2 **Progress Stage 1 Check**

Desired outcome for all tasks for the Progress Check is "Perform" or "Manage/Decide"	Practice	Perform	Manage/ Decide
Single-pilot resource management			
Risk management *Can explain the four fundamental risk elements associated with the flight, uses a tool, such as the PAVE checklist, to help assess the four risk elements*			
Preflight procedures			
Preflight preparation *Understands the preparation necessary for an IFR flight*			
Weather briefing and/or acceptable weather resources *Knows FAA-approved weather sources and can interpret them*			
Takeoff and landing data *Uses POH/PIM to determine takeoff and landing distances required*			
Weight and balance *Determines weight and balance calculations correctly and understands the impact on performance*			
Charts *Is aware of the chart and publications cycles, uses current publications and charts*			
Preflight inspection *Determines the airplane is airworthy for instrument flight*			
Checklist usage *Uses the checklist before, during, and after the flight*			
Instrument cockpit check *Performs and understands the elements and purpose of the check*			
Runway incursion avoidance *Uses airport diagrams, maintains situational awareness, and complies with ATC instructions as necessary*			
In-flight			
Cockpit management *Maintains an organized cockpit and utilizes all resources available to ensure the safety of flight*			
Collision avoidance *Utilizes a safety pilot or ATC to ensure collision avoidance*			
Basic instrument flight maneuvers *Maintains altitude ±150 feet, airspeed ±10 knots, heading ±15 degrees, bank ±5 degrees*			
Loss of primary flight instruments *Recognizes the loss of a primary flight instrument indicator and safely controls the airplane by reference to supporting instruments, reports failure to ATC as necessary*			
Timed turns to magnetic headings *Can use time to accurately turn to a desired heading in the case of a heading indicator failure*			
Compass turns to magnetic headings *Understands compass errors and accurately turns to a desired heading in the case of a heading indicator failure*			
Recovery from unusual flight attitudes *Recovers using proper pitch, power, and bank inputs and restores positive aircraft control*			
Postflight procedures			
After landing, parking and securing *Completes appropriate checklists, taxis the airplane back to parking and properly secures it*			

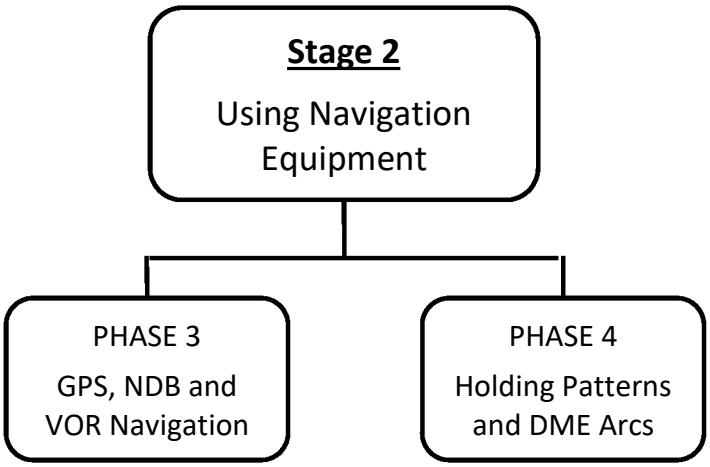
*Phase 2 *Progress Stage 1 Check* completion standards:*

You have completed the Phase 2 **Progress Stage 1 Check** when you

- Demonstrate knowledge of risk management
- Can perform the preparation necessary for an IFR flight
- Perform basic instrument flight maneuvers

Stage 1, Phase 2: Polishing Instrument Skills

INSTRUCTOR NOTES:



Stage 2 consists of two Phases
- GPS, NDB, and VOR, Navigation
- Holding Patterns and DME Arcs

Stage Objective: During this stage you will
- Become more familiar with VOR navigation and situational awareness
- Utilize GPS navigation and be familiar with its use for IFR
- Explore navigating with an NDB if your airplane has this equipment
- Safely control the airplane using proper instrument cross-check and interpretation
- Utilize published airways
- Discover instrument holding procedures including entry, reports, and patterns
- Be able to recover from unusual flight attitudes with reference to instruments only
- Discover DME arcs and their primary use
- Fly with a check instructor to check your course progress

Each phase contains **Web-based Knowledge Instruction**
- The web-based knowledge instruction for the phase should be completed prior to starting the flight scenarios to ensure fundamental knowledge before the flight.

Each phase contains multiple **Flight Scenarios** that can be
- Customized for your local training environment
- Repeated, or
- Omitted if all items in the Phase Proficiency Checklist are completed to standard.

At the end of each Phase are the **Ground Training Checklist** and **Phase Proficiency Checklist**
- All items in the checklist must be completed to the appropriate standard listed before the Phase is considered complete.

PHASE 3: GPS, NDB, and VOR Navigation

Phase Objective: During this phase you will develop the skills and confidence necessary to:

- Use RNAV and GPS for IFR navigation
- Use the NDB, if installed, for IFR navigation
- Use the VOR for IFR navigation
- Safely depart using published IFR procedures

Web-based KNOWLEDGE

UNDERSTANDING RNAV AND GPS NAVIGATION
UNDERSTANDING NDB NAVIGATION
UNDERSTANDING VOR NAVIGATION
IFR DEPARTURES AND THE AIRSPACE SYSTEM

3.1 UNDERSTANDING RNAV AND GPS NAVIGATION

Objective: You will gain insight on area navigation (RNAV) and using GPS as a navigation aid.

3.1.1 RNAV and GPS Navigation
GPS Requirements and Using GPS for IFR

3.1.2 Required Navigation Performance (RNP)
Understanding RNP
What WAAS Does for You

3.1.3 Using GPS for Navigation
Creating and Modifying a GPS Flight Plan
Enroute GPS
Loading Instrument Procedures

3.2 UNDERSTANDING NDB NAVIGATION

Objective: You will explore how to use an ADF and RMI for NDB navigation.

3.2.1 NDB Navigation
Understanding the ADF
Homing and Bearings to the Station
The Moveable Card Indicator ADF
Intercepting and Tracking NDB Bearings
RMI Orientation and Navigation

3.3 UNDERSTANDING VOR NAVIGATION

Objective: You will gain knowledge about VOR checks, accuracy, orientation, how to intercept and track radials, and how to identify intersections.

3.3.1 VOR Navigation
VOR Checks
VOR Navigation
Receiving Localizers on the VOR Radios
Intercepting and Tracking VOR Radials
Using an HSI for VOR Navigation

3.4 IFR DEPARTURES AND THE AIRSPACE SYSTEM

Objective: You will learn how to use published departure procedures, to depart under IFR at an airport with or without a control tower, and about the airspace system.

3.4.1 IFR Departures
Safe IFR Departures
Departure Procedure Charts (ODPs and SIDs)
Loading and Flying Departure Procedures
Departing Airports With Control Towers
Departing Airports Without Control Towers

3.4.2 Airspace
- The Airspace System
- Class G Airspace
- Class E Airspace
- Class D Airspace
- Class C Airspace
- Class B Airspace
- Class A Airspace

3.4.3 Weather Minimums
- VFR Weather Minimums
- Special VFR

FLIGHT SCENARIOS

GPS FOR IFR USE AND ADF/NDB NAVIGATION (IF INSTALLED)
VOR NAVIGATION
FLYING PUBLISHED DEPARTURE PROCEDURES

Flight scenarios will be repeated as necessary to reach the desired proficiency

SCENARIO 1: GPS for IFR Use and ADF/NDB Navigation (If Installed)

FSTD MAY BE USED

Note: Although you may use an FSTD for this scenario, the maximum time that may be credited in an FSTD depends on the device category (FFS, FTD, AATD, BATD) and course enrollment (Part 61 or Part 141). E.g., a Part 61 course allows 10 hours instrument time in a BATD or 20 hours in an AATD [§61.65(i)]. The Part 141 course maximum is 25% (BATD) or 40% (AATD) of the total instrument training requirement (35 hours) [§141 Appendix C, 4.(b)(3)]. See §61.65(h) or §141 Appendix C, 4.(b)(1)-(3) for FFS or FTD.

Objective:
Familiarize yourself with the GPS and its use for IFR navigation. If your airplane has a functioning ADF, you will navigate using a non-directional beacon (NDB).
Purpose/pressures (real or simulated):
You are flying with two friends to a ski destination and back.
Where to go:
A nearby airport
How to get there:
IFR flight plan using GPS waypoints, and NDB bearings if an ADF is installed and an NDB is available
Planned deviations:
To a suitable airport to deal with en route icing
Planned malfunctions:
RAIM unavailable
NDB loss of signal
Risks (real or simulated):
Navigation errors due to unreliable signals
Each of you is carrying ski boots and extra clothes
Runway has light snow on it
AIRMET Zulu and Sierra are valid for the route of flight (possibility of encountering structural icing and IMC or mountain obscurations)
Destination airport is 6,388 feet MSL

New this scenario:
Aeronautical decision making
Determining suitability of GPS for IFR flight
Familiarity with avionics
Navigation system orientation (GPS and/or NDB)
Navigation system course intercepting and tracking (GPS and/or NDB)
Navigating to a waypoint or an off-airway fix at a safe altitude

Improving your skills:
Risk management
Checklist usage

SCENARIO 2: VOR Navigation

FSTD MAY BE USED

Note: Although you may use an FSTD for this scenario, the maximum time that may be credited in an FSTD depends on the device category (FFS, FTD, AATD, BATD) and course enrollment (Part 61 or Part 141). E.g., a Part 61 course allows 10 hours instrument time in a BATD or 20 hours in an AATD [§61.65(i)]. The Part 141 course maximum is 25% (BATD) or 40% (AATD) of the total instrument training requirement (35 hours) [§141 Appendix C, 4.(b)(3)]. See §61.65(h) or §141 Appendix C, 4.(b)(1)-(3) for FFS or FTD.

Objective:
Enhance your skill in using the VOR for situational awareness and intercepting and tracking radials
Purpose/pressures (real or simulated):
You are meeting business associates at a nearby airport to sign time-sensitive documents.
Where to go:
En route to a nearby single-runway (simulated if necessary) airport using victor airways, airspace that is free from obstructions and dense traffic to practice intercepting and tracking courses using VOR radials
How to get there:
VOR navigation, vectors
Planned deviations:
Route and destination changes for unforecast convective activity and airport conditions
Planned malfunctions:
Unable to identify the VOR (simulated by deselecting or turning-down NAV audio)
VOR indicator off flag or missing deviation bar (simulated by changing NAV frequency)
Risks (real or simulated):
Navigation errors due to unreliable signals
Strong crosswinds forecast en route (being off course because of failure to apply appropriate wind corrections)
Unforecast convective weather en route
While en route, reported winds at the destination are 13 knots gusting to 19 knots 60° from the runway heading. A later PIREP from a Corvalis TT landing at your destination indicates wind shear with a loss of 10 knots on final

New this scenario:
VOR accuracy check
Navigation system orientation (VOR)
Navigation system course intercepting and tracking (VOR)
Victor airway intercepting and tracking

Improving your skills:
Risk management
Preflight preparation
Checklist usage
Recovery from unusual flight attitudes

SCENARIO 3: Flying Published Departure Procedures

FSTD MAY BE USED

Note: Although you may use an FSTD for this scenario, the maximum time that may be credited in an FSTD depends on the device category (FFS, FTD, AATD, BATD) and course enrollment (Part 61 or Part 141). E.g., a Part 61 course allows 10 hours instrument time in a BATD or 20 hours in an AATD [§61.65(i)]. The Part 141 course maximum is 25% (BATD) or 40% (AATD) of the total instrument training requirement (35 hours) [§141 Appendix C, 4.(b)(3)]. See §61.65(h) or §141 Appendix C, 4.(b)(1)-(3) for FFS or FTD.

Objective:
Become familiar with and fly published departure procedures
Purpose/pressures (real or simulated):
You are flying to your class reunion to show friends your new airplane.
Where to go:
To a nearby airport that has a published departure procedure (if your home airport does not have one)
How to get there:
Published departure procedures, GPS or VOR navigation, vectors
Planned deviations:
As necessary to deal with malfunction
Planned malfunctions:
Rough running engine
Risks (real or simulated):
Compromised ability to meet the departure climb requirements

New this scenario:
Compliance with published departure procedures
Understanding required climb gradient

Improving your skills:
Preflight preparation
Instrument cockpit check
Compliance with ATC clearances
Basic instrument flight maneuvers

Phase 3 Ground Training Checklist

*All items to be graded independently by the instructor and customer, then discussed and a final grade assessed. *Desired outcome for all tasks by the end of the phase is "Explain"*	Instruction Given	Describe	Explain
GPS for IFR navigation			
ADF/NDB navigation for IFR			
VOR for IFR navigation			
How to receive an IFR clearance at a towered and non-towered airport			
Published Obstacle Departure Procedures			

Phase 3 Proficiency Checklist

*All items to be graded independently by the instructor and customer, then discussed and a final grade assessed. *Desired outcome for all tasks by the end of the phase is "Perform" or "Manage/Decide"*	Practice	Perform	Manage/Decide
Single-pilot resource management			
Aeronautical decision making *Exhibits sound decision making during planning and execution of the planned flight*			
Risk management *Is able to recognize risks and uses good judgment to reduce associated risks*			
Preflight procedures			
Preflight preparation *Performs all preparation required for an IFR flight*			
Checklist usage *Uses checklist for preflight and all phases of flight*			
Determining suitability of GPS for IFR flight *Can determine if the GPS is suitable for IFR flight*			
Familiarity with avionics *Is familiar with the airplane avionics and can effectively use them*			
Instrument cockpit check *Determines the airplane is in condition for safe instrument flight including all items listed in the ACS*			
In-flight			
Navigating to a waypoint or an off-airway fix at a safe altitude *Maintains obstacle clearance and can safely navigate to a waypoint or off-airway fix*			
Navigation system orientation (GPS and/or NDB) *Uses installed navigation systems to establish/maintain situational awareness*			
Navigation system course intercepting and tracking (GPS and/or NDB) *Intercepts and tracks courses maintaining altitude ±150 feet, headings ±10 degrees, airspeed ±10 kts, and course within ¾ scale CDI deflection or ±10 degrees on RMI*			
VOR accuracy check *Confirms usability of VOR for IFR navigation, including required checks and identification in the air*			
Navigation system orientation (VOR) *Uses VOR to establish/maintain situational awareness*			
Navigation system course intercepting and tracking (VOR) *Intercepts and tracks courses maintaining altitude ±150 feet, headings ±10 degrees, airspeed ±10 kts, and course within ¾ scale CDI deflection or ±10 degrees on RMI*			
Victor airway intercepting and tracking *Understands the boundary of the Victor airway and can accurately maintain navigation on the airway*			

Phase 3 Proficiency Checklist *continued*

Recovery from unusual flight attitudes *Applies appropriate pitch, bank, and power corrections in the correct sequence*			
Compliance with published departure procedures *Conforms to procedure restrictions, courses, and altitudes*			
Understanding required climb gradient *Complies with the published required climb gradient*			
Compliance with ATC clearances *Understands, responds to, and complies with ATC clearances*			
Basic instrument flight maneuvers *Maintains altitude ±150 feet, headings ±15 degrees, airspeed ±10 kts, and bank ±5 degrees*			

Phase 3 completion standards:

You have completed Phase 3 when you

- Can determine if the navigation aid is suitable for IFR use
- Maintain situational awareness when using navigation aids
- Can accurately intercept and track navigation systems
- Correct for wind drift as needed to maintain on course
- Have reviewed the Phase Progress Report with your instructor

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INSTRUCTOR NOTES:

PHASE 4: Holding Patterns and DME Arcs

Phase Objective: During this phase you will

- Be able to fly an appropriate entry into a holding pattern
- Understand the required reports associated with holding procedures
- Accurately fly a holding pattern
- Be able to fly a DME arc
- Successfully complete a Progress Check

Web-based KNOWLEDGE

HOLDING PATTERNS AND ARRIVALS
DME ARCS
APPROACH CHARTS

4.1 HOLDING PATTERNS AND ARRIVALS

Objective: You will understand holding patterns and arrivals to the terminal area.

4.1.1 Holding Patterns

The Holding Pattern
How to Fly a Holding Pattern
Holding Pattern Entries
Holding at Intersections and Waypoints
Flying Holding Patterns with the G1000

4.1.2 Arrivals

Format and Symbols on STAR Charts
Loading and Flying Arrival Procedures

4.2 DME ARCS

Objective: You will learn how to fly a DME arc.

4.2.1 Flying DME Arcs

DME Arcs Using VOR and DME
DME Arcs Using the G1000

4.3 APPROACH CHARTS

Objective: You will gain knowledge about approach segments and approach charts.

4.3.1 Approach Charts and Approach Segments

Approach Segments
Overview of Approach Charts
Approach Chart Design

4.3.2 Sections of the Approach Chart

Margin Identification
Pilot Briefing
Plan View
Profile View
Minimums Section
Airport Sketch

FLIGHT SCENARIOS

FLYING A HOLDING PATTERN
DME ARCS AND NON-PUBLISHED HOLDING PATTERNS
PROGRESS STAGE 2 CHECK

Flight scenarios will be repeated as necessary to reach the desired proficiency

SCENARIO 1: Flying a Holding Pattern

FSTD MAY BE USED

Note: Although you may use an FSTD for this scenario, the maximum time that may be credited in an FSTD depends on the device category (FFS, FTD, AATD, BATD) and course enrollment (Part 61 or Part 141). E.g., a Part 61 course allows 10 hours instrument time in a BATD or 20 hours in an AATD [§61.65(i)]. The Part 141 course maximum is 25% (BATD) or 40% (AATD) of the total instrument training requirement (35 hours) [§141 Appendix C, 4.(b)(3)]. See §61.65(h) or §141 Appendix C, 4.(b)(1)-(3) for FFS or FTD.

Objective:
Build the skills necessary to copy holding instructions, determine and fly the recommended entry into a proper holding pattern, and make required reports.
Purpose/pressures (real or simulated):
You are flying a business associate to a meeting.
Where to go:
To a nearby airport
How to get there:
Vectors, VOR or GPS navigation
Planned deviations:
Holding due to weather
Planned malfunctions:
None
Risks (real or simulated):
Weather below minimums at destination
Navigational confusion in the hold

New this scenario:
Holding entries and procedures

Improving your skills:
Single-pilot resource management
Preflight preparation
Instrument cockpit check
Basic instrument flight maneuvers
Intercepting and tracking navigational systems
Compliance with departure procedures
Recovery from unusual flight attitudes
Loss of primary flight instrument

SCENARIO 2: DME Arcs and Non-published Holding Patterns

FSTD MAY BE USED

Note: Although you may use an FSTD for this scenario, the maximum time that may be credited in an FSTD depends on the device category (FFS, FTD, AATD, BATD) and course enrollment (Part 61 or Part 141). E.g., a Part 61 course allows 10 hours instrument time in a BATD or 20 hours in an AATD [§61.65(i)]. The Part 141 course maximum is 25% (BATD) or 40% (AATD) of the total instrument training requirement (35 hours) [§141 Appendix C, 4.(b)(3)]. See §61.65(h) or §141 Appendix C, 4.(b)(1)-(3) for FFS or FTD.

Objective:
Learn how to fly a DME arc, and hold at a fix without a published holding pattern.
Purpose/pressures (real or simulated):
You are trying to impress a date by flying to dinner at a nearby town.
Where to go:
A fix around which you can simulate flying a DME arc on the way to a nearby airport
How to get there:
Flying a clearance, victor airways, or vectors
Planned deviations:
Unplanned hold
Planned malfunctions:
None
Risks (real or simulated):
Extra fuel consumption due to hold

New this scenario:
Intercepting and tracking DME arcs
Non-published holding procedures

Improving your skills:
Single-pilot resource management
Preflight preparation
Instrument cockpit check
Basic instrument flight maneuvers
Compliance with departure procedures

Phase 4 Ground Training Checklist

*All items to be graded independently by the instructor and customer, then discussed and a final grade assessed. *Desired outcome for all tasks by the end of the phase is "Explain"*	Instruction Given	Describe	Explain
Determining and flying the appropriate entry to a holding pattern			
Required ATC reports when holding			
Flying a holding pattern			
Intersection holding			
How to fly a DME arc using GPS or VOR/DME			
Approach Charts			
Determining your approach category			

Phase 4 Proficiency Checklist

*All items to be graded independently by the instructor and customer, then discussed and a final grade assessed. *Desired outcome for all tasks by the end of the phase is "Perform" or "Manage/Decide"*	Practice	Perform	Manage/ Decide
Single-pilot resource management (SRM) *Utilizes all resources available to ensure the successful completion of the flight*			
Preflight procedures			
Preflight preparation *Performs all necessary preparation for a safe IFR flight*			
Instrument cockpit check *Determines the airplane is safe for IFR including items listed in the ACS*			
In-flight			
Holding entries and procedures *Uses the appropriate entry, makes all required ATC reports, and can accurately fly a holding pattern*			
Basic instrument flight maneuvers *Maintains altitude ±150 feet, headings ±15 degrees, airspeed ±10 kts, and bank ±5 degrees*			
Intercepting and tracking navigational systems *Tunes and identifies the navigation facility, applies proper correction to maintain the specified course*			
Compliance with departure procedures *Uses current navigation publications and complies with requirements*			
Recovery from unusual flight attitudes *Applies appropriate pitch, bank, and power corrections to return the airplane to stabilized flight*			
Loss of primary flight instrument *Recognizes the loss of a primary instrument, simulates reporting to ATC as necessary, and applies risk management in the aeronautical decision making relating to the safety of the flight*			
Intercepting and tracking DME arcs *Intercepts and maintains the DME arc ±1 nautical mile*			
Non-published holding procedures *Flies to the intersection, uses the appropriate entry, communicates as required with ATC, maintain situational awareness, and can maintain altitude ±150 feet*			

Phase 4 completion standards:

You have completed Phase 4 when you

- Can perform all preparation required for an IFR flight
- Are able determine the proper entry to a holding pattern, make all required ATC reports, and appropriately fly the holding pattern
- Intercept and fly a DME arc
- Have passed the Progress Check
- Have reviewed the Phase Progress Report with your instructor

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INSTRUCTOR NOTES:

SCENARIO 3: ***Progress Stage 2 Check***

Objective:
Fly with a check instructor to ensure satisfactory course and skill level progress.
Purpose/pressures (real or simulated):
You would like to fly your airplane on business trips for your company. Your company's risk manager requires you to pass an evaluation by the chief or assistant chief instructor at a local flight school.
Where to go:
A point within 30 minutes flight time that is in suitable airspace free from obstructions and dense traffic
How to get there:
ATC clearance, navigation systems, vectors
Planned deviations:
None
Planned malfunctions:
Rough running engine
Flight display/instrument failure
Risks (real or simulated):
Stress from being evaluated

Checking your knowledge and skills:
Single-pilot resource management
Preflight preparation
Instrument cockpit check
Basic instrument flight maneuvers
Intercepting and tracking navigational systems
Intercepting and tracking DME arcs
Holding procedures
Compliance with departure procedures
Recovery from unusual flight attitudes
Loss of primary flight instrument

Phase 4 **Progress Stage 2 Check*- Oral*

Desired outcome for all tasks for the Progress Check is "Explain"	Instruction Given	Describe	Explain
Required ATC reports when holding			
Single-pilot resource management			
Procedures for loss of communication in the hold			

Phase 4 **Progress Stage 2 Check*- Flight*

Desired outcome for all tasks for the Progress Check is "Perform" or "Manage/Decide"	Practice	Perform	Manage/ Decide
Single-pilot resource management *Utilizes all resources available to ensure the successful completion of the flight*			
Preflight procedures			
Preflight preparation *Can perform all preparation necessary for a safe IFR flight*			
Instrument cockpit check *Performs and determines the airplane is suitable for IFR flight*			
In-flight			
Basic instrument flight maneuvers *Maintains altitude ±150 feet, headings ±15 degrees, airspeed ±10 kts, and bank ±5 degrees*			
Intercepting and tracking navigational systems *Tunes and identifies the navigation facility, applies proper correction to maintain the specified course*			
Intercepting and tracking DME arcs *Intercepts and maintains the DME arc ±1 nautical mile*			
Holding procedures *Uses the appropriate entry, makes all required ATC reports, and can accurately fly a holding pattern*			
Compliance with departure procedures *Uses current navigation publications and complies with requirements*			
Recovery from unusual flight attitudes *Applies appropriate pitch, bank, and power corrections to return the airplane to stabilized flight*			
Loss of primary flight instrument *Recognizes the loss of a primary instrument, simulates reporting to ATC as necessary, and applies risk management in the aeronautical decision making relating to the safety of the flight*			

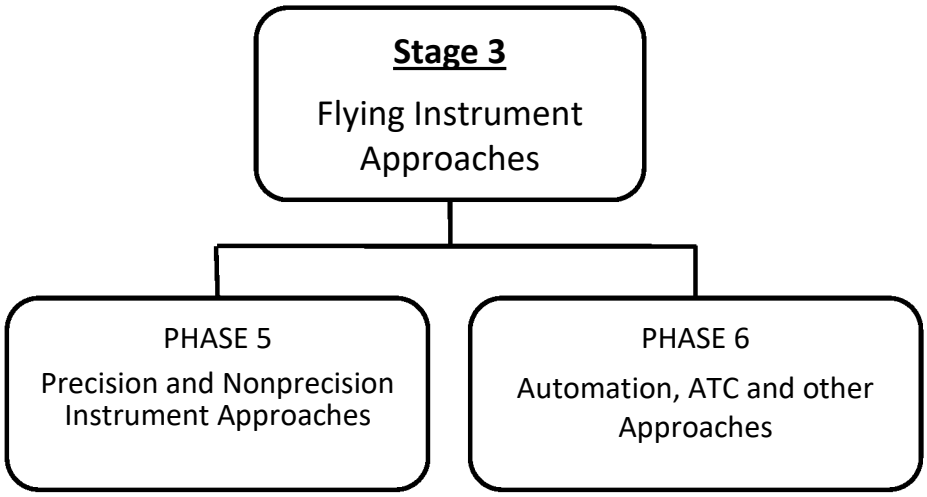
*Phase 4 *Progress Stage 2 Check* completion standards:*

You have completed the Phase 4 **Progress Stage 2 Check** when you

- Perform and understand all preparation necessary for IFR flight
- Perform to the specified standards
- Demonstrate to the check instructor that the safety of flight is never in doubt

Stage 2, Phase 4: Holding Patterns and DME Arcs

INSTRUCTOR NOTES:



Stage 3 consists of two Phases
- Precision and Nonprecision Instrument Approaches
- Automation, ATC and Other Approaches

Stage Objective: During this stage you will
- Understand the elements of precision and nonprecision approaches
- Utilize appropriate, current approach procedure charts
- Learn how to brief, fly, and communicate with ATC during an instrument approach
- Know how to determine a missed approach point
- Be able to make a decision whether to continue for a landing or initiate missed approach procedures when arriving at the missed approach point
- Safely control the airplane using proper instrument cross-check and interpretation
- Discover how to perform a circling maneuver from an approach that does not place you in position for a straight-in to the landing runway
- Know items that you are required to report to ATC
- Fly precision and nonprecision approaches utilizing single-pilot resource management
- Fly with a check instructor to check your course progress

Each phase contains **Web-based Knowledge Instruction**
- The web-based knowledge instruction for the phase should be completed prior to starting the flight scenarios to ensure fundamental knowledge before the flight.

Each phase contains multiple **Flight Scenarios** that can be
- Customized for your local training environment
- Repeated, or
- Omitted if all items in the Phase Proficiency Checklist are completed to standard.

At the end of each Phase are the **Ground Training Checklist** and **Phase Proficiency Checklist**
- All items in the checklist must be completed to the appropriate standard listed before the Phase is considered complete.

PHASE 5: Precision and Nonprecision Instrument Approaches

Phase Objective: During this phase you will
- Fly precision and nonprecision approaches
- Land from a straight-in approach
- Learn the required visual references for making the appropriate decision to land or follow the missed approach procedure

Web-based KNOWLEDGE

IFR RULES AND APPROACH TYPES
ILS APPROACHES
LOCALIZER APPROACHES
RNAV APPROACHES

5.1 IFR RULES AND APPROACH TYPES

Objective: You will learn more about instrument flight rules and the types of approaches.

5.1.1 Instrument Flight Rules
- Pilot and Airplane IFR Requirements
- Maintaining Your IFR Skills
- Continuing Beyond the Missed Approach Point

5.1.2 Instrument Approach Types
- Precision Approaches and APVs
- Nonprecision Approaches

5.1.3 Course Reversals
- Getting Turned Around to Make an Approach

5.1.4 Localizer Courses
- How to Fly Localizer Courses

5.2 ILS APPROACHES

Objective: You will gain knowledge about the Instrument Landing System (ILS).

5.2.1 Instrument Landing System (ILS) Components
- Guidance
- Range
- Visual Components
- Runway Visual Range (RVR)
- Inoperative ILS Components

5.2.2 How to Fly an ILS
- Choosing Which Approach to Fly
- Self-Briefing the Approach
- Setting Up for the Approach
- Flying the ILS
- Flying the Missed Approach

5.3 LOCALIZER APPROACHES

Objective: You will discover how to use the localizer front and back courses.

5.3.1 Localizer Approaches
- Flying a Localizer Front Course
- Flying a Localizer Back Course
- Flying SDF and LDA Approaches
- Flying DME Arcs to a Localizer

5.4 RNAV APPROACHES

Objective: You will gain insight on the different types of RNAV approaches.

5.4.1 RNAV Approaches

RNAV Approaches

5.4.2 RNAV (GPS) Approach Types

LPV and LP Approaches
LNAV/VNAV Approach
LNAV Approach
GPS and Missed Approaches

FLIGHT SCENARIOS

ILS APPROACHES
RNAV (GPS) APPROACHES WITH VERTICAL GUIDANCE (WAAS)
RNAV (GPS) APPROACHES WITHOUT VERTICAL GUIDANCE
LOCALIZER (LOC) APPROACHES

Flight scenarios will be repeated as necessary to reach the desired proficiency

SCENARIO 1: ILS Approaches

FSTD MAY BE USED

Note: Although you may use an FSTD for this scenario, the maximum time that may be credited in an FSTD depends on the device category (FFS, FTD, AATD, BATD) and course enrollment (Part 61 or Part 141). E.g., a Part 61 course allows 10 hours instrument time in a BATD or 20 hours in an AATD [§61.65(i)]. The Part 141 course maximum is 25% (BATD) or 40% (AATD) of the total instrument training requirement (35 hours) [§141 Appendix C, 4.(b)(3)]. See §61.65(h) or §141 Appendix C, 4.(b)(1)-(3) for FFS or FTD.

Objective:
Learn how to fly a precision approach, using vertical and lateral guidance to descend to the decision altitude / decision height and decide whether to make a missed approach or continue below the approach minimums visually

Purpose/pressures (real or simulated):
You are making a flight with two friends to a nearby airport for an FAA Safety Seminar

Where to go:
An airport within 30 minutes flight time that has a suitable ILS approach

How to get there:
Vectors or assigned route using navigation systems

Planned deviations:
As necessary if the airport environment is not in sight at the decision height

Planned malfunctions:
None

Risks (real or simulated):
AIRMET Sierra valid, visibility is expected to be 2 miles in haze with ceilings at 700 feet upon the time of your planned arrival (possibility of encountering IMC or mountain obscurations)
Distraction in the cockpit

New this scenario:
Communication with ATC
Approach briefing
Vectors to final approach course
Precision approach
- Intercept and track localizer course
- Intercept and track the glide slope
- Execute missed approach procedure
- Transition to landing from an approach

Improving your skills:
Checklist usage
Intercepting and tracking navigational systems

SCENARIO 2: RNAV (GPS) Approaches With Vertical Guidance (WAAS)

FSTD MAY BE USED

Note: Although you may use an FSTD for this scenario, the maximum time that may be credited in an FSTD depends on the device category (FFS, FTD, AATD, BATD) and course enrollment (Part 61 or Part 141). E.g., a Part 61 course allows 10 hours instrument time in a BATD or 20 hours in an AATD [§61.65(i)]. The Part 141 course maximum is 25% (BATD) or 40% (AATD) of the total instrument training requirement (35 hours) [§141 Appendix C, 4.(b)(3)]. See §61.65(h) or §141 Appendix C, 4.(b)(1)-(3) for FFS or FTD.

Objective:
Learn how to fly an RNAV (GPS) approach with vertical guidance to the decision altitude and decide whether to make a missed approach or continue below the approach minimums visually.
Purpose/pressures (real or simulated):
You are making an instrument proficiency flight into a nearby major airline airport that will also allow you to pick up your college roommate and spouse. A presidential temporary flight restriction (TFR) has just been moved up to start 45 minutes after your friends' scheduled arrival.
Where to go:
An airport within 30 minutes flight time that has a suitable RNAV (GPS) WAAS approach listing LPV and/or LNAV/VNAV minima.
How to get there:
Vectors or assigned route using navigation systems
Planned deviations:
To suitable airport to deal with failures
As necessary if the airport environment is not in sight at the decision altitude
Planned malfunctions:
Alternator failure
Risks (real or simulated):
Hurried actions because of the TFR
Wake turbulence
According to the forecast, you expect ceilings 200 feet above the applicable RNAV approach decision altitude with the visibility 3/4 mile greater than the published minimum upon arrival.

New this scenario:
Load and verify RNAV approach into navigation system
RNAV approach with vertical guidance
- Intercept and track RNAV approach course
- Intercept and track electronic vertical guidance

Improving your skills:
Communication with ATC
Compliance with ATC clearance
Approach briefing
Checklist usage
Intercepting and tracking navigational systems
Execute missed approach procedure
Transition to landing from an approach

SCENARIO 3: RNAV (GPS) Approaches Without Vertical Guidance

FSTD MAY BE USED

Note: Although you may use an FSTD for this scenario, the maximum time that may be credited in an FSTD depends on the device category (FFS, FTD, AATD, BATD) and course enrollment (Part 61 or Part 141). E.g., a Part 61 course allows 10 hours instrument time in a BATD or 20 hours in an AATD [§61.65(i)]. The Part 141 course maximum is 25% (BATD) or 40% (AATD) of the total instrument training requirement (35 hours) [§141 Appendix C, 4.(b)(3)]. See §61.65(h) or §141 Appendix C, 4.(b)(1)-(3) for FFS or FTD.

Objective:
Learn how to fly an RNAV (GPS) nonprecision approach to the minimum descent altitude (MDA) and missed approach point, and decide whether to make a missed approach or continue below the approach minimums visually.

Purpose/pressures (real or simulated):
You have just discovered a reliability issue with your highest revenue product and are flying to a nearby airport to meet with your vendor and engineers from their out-of-area supplier of the suspect component. The engineers depart on an international flight this evening.

Where to go:
An airport within 30 minutes flight time that has a suitable RNAV (GPS) straight-in approach.

How to get there:
Vectors or assigned route using navigation systems

Planned deviations:
As necessary for RAIM not available
As necessary if the airport environment is not in sight at the MDA

Planned malfunctions:
RAIM unavailable

Risks (real or simulated):
Distraction because of focus on product issue
Forecast conditions have been slowly deteriorating, but you expect ceilings 300 feet above the applicable RNAV approach MDA with the visibility 1 mile greater than the published minimum upon arrival.

New this scenario:
Terminal Arrival Area (TAA) procedure or course reversal
RNAV Approach without vertical guidance
- Descend to the minimum descent altitude (MDA)
- Identify the missed approach point

Improving your skills:
Communication with ATC
Compliance with ATC clearance
Approach briefing
Checklist usage
Intercepting and tracking navigational systems
Load and verify RNAV approach into navigation system
Execute missed approach procedure
Transition to landing from an approach

SCENARIO 4: Localizer (LOC) Approaches

FSTD MAY BE USED

Note: Although you may use an FSTD for this scenario, the maximum time that may be credited in an FSTD depends on the device category (FFS, FTD, AATD, BATD) and course enrollment (Part 61 or Part 141). E.g., a Part 61 course allows 10 hours instrument time in a BATD or 20 hours in an AATD [§61.65(i)]. The Part 141 course maximum is 25% (BATD) or 40% (AATD) of the total instrument training requirement (35 hours) [§141 Appendix C, 4.(b)(3)]. See §61.65(h) or §141 Appendix C, 4.(b)(1)-(3) for FFS or FTD.

Objective:
Learn how to fly a localizer nonprecision approach to the minimum descent altitude and missed approach point and decide whether to make a missed approach or continue below the approach minimums visually.
Purpose/pressures (real or simulated):
You are fulfilling a promise to take a good friend to dinner at a well-known restaurant within walking distance from the airport in a neighboring city.
Where to go:
An airport within 30 minutes flight time with a suitable LOC, LDA, or SDF straight-in-approach
How to get there:
Vectors or assigned route using navigation systems
Planned deviations:
As necessary to deal with radio failure
As necessary if the airport environment is not in sight at the MDA
Planned malfunctions:
Number 1 com radio failure (Number 2 works fine)
Risks (real or simulated):
A coastal marine cloud layer has covered the destination area with ceilings 150 feet above the MDA and is forecast to remain the same throughout the evening. Visibility is greater than 6 miles.

New this scenario:
Localizer approach
- Identify missed approach point using time from final approach fix
- Descend from MDA at visual descent point (VDP)

Improving your skills:
Communication with ATC
Compliance with ATC clearance
Approach briefing
Checklist usage
Intercepting and tracking navigational systems
Descend to the minimum descent altitude (MDA)
Identify the missed approach point
Execute missed approach procedure
Transition to landing from an approach

Phase 5 Ground Training Checklist

*All items to be graded independently by the instructor and customer, then discussed and a final grade assessed. *Desired outcome for all tasks by the end of the phase is "Explain"*	Instruction Given	Describe	Explain
Precision approach procedures			
Nonprecision approach procedures			
Approach briefing			
Flying the approaches			
When a missed approach is required			

Phase 5 Proficiency Checklist

*All items to be graded independently by the instructor and customer, then discussed and a final grade assessed. *Desired outcome for all tasks by the end of the phase is "Perform"*	Practice	Perform	Manage/ Decide
Single-pilot resource management (SRM) *Utilizes all resources available to ensure the successful completion of the flight*			
Checklist usage *Uses checklist during all phases of flight as required*			
Intercepting and tracking navigational systems *Maintains situational awareness and is never more than 3/4 scale deflection off course*			
Communication with ATC *Is able to respond to and understand ATC calls*			
Compliance with ATC clearance *Understands, confirms, and flies clearances. Queries ATC if clearance may compromise safety*			
Approach briefing *Thoroughly briefs the approach as early as possible*			
Vectors to final approach course *Can accurately fly ATC issued vectors to the final approach course*			
Intercept and track localizer course *Anticipates and accurately intercepts the localizer course, does not exceed 3/4 scale deflection*			
Intercept and track glideslope *Anticipates and accurately intercepts the glideslope, does not exceed 3/4 scale deflection*			
Precision approach *No more than 3/4 scale deflection, continues to the missed approach point*			
Load and verify RNAV approach into navigation system *Can accurately load and verify the RNAV approach*			
RNAV approach with vertical guidance *No more than 3/4 scale deflection, continues to the missed approach point*			
Intercept and track RNAV approach course *Anticipates and accurately intercepts the approach course, does not exceed 3/4 scale deflection*			
Intercept and track electronic vertical guidance *Anticipates and accurately intercepts the glidepath, does not exceed 3/4 scale deflection*			
Terminal arrival area (TAA) procedure or course reversal *Accurately flies the TAA procedure or course reversal as published or cleared by ATC*			
RNAV approach without vertical guidance *No more than 3/4 scale deflection, continues to the missed approach point*			
Descent to the minimum descent altitude (MDA) *Descends to the MDA and maintains +100 feet / -0 feet until the missed approach point*			
Identify the missed approach point *Is able to accurately identify and appropriately respond to arrival at the missed approach point*			

Phase 5 Proficiency Checklist *continued*

Localizer approach *No more than 3/4 scale deflection, continues to the missed approach point*			
Identify missed approach point using time from final approach fix (FAF) *Appropriately uses time to navigate from the final approach fix to the missed approach point*			
Descend from MDA at visual descent point (VDP) *Makes decision to descend below MDA at the VDP if visual cues are acquired*			
Execute missed approach procedure *Initiates the missed approach promptly when the required visual references are not acquired by the MAP and conforms to the published or assigned alternate procedure*			
Transition to landing from an approach *Makes a safe transition from the approach to landing touchdown*			

Phase 5 completion standards:

You have completed Phase 5 when you

- Consistently and safely control the airplane in all phases of an instrument approach
- Recognize when a missed approach is required and safely initiate missed approach procedures
- Have reviewed the Phase Progress Report with your instructor

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INSTRUCTOR NOTES:

PHASE 6: Automation, ATC, and Other Approaches

Phase Objective: During this phase you will

- Polish precision and nonprecision instrument approach procedures
- Discover use of the autopilot for instrument approaches
- Learn about using a circling maneuver to align with the landing runway
- Land from both straight-in and circling approaches
- Complete a progress check to ensure you can safely fly instrument approaches

Web-based KNOWLEDGE

INCORPORATING AUTOMATION
VOR AND NDB APPROACHES
ATC CLEARANCES, SERVICES, AND MORE APPROACHES
ATC PROCEDURES

6.1 INCORPORATING AUTOMATION

Objective: You will learn how automatic flight control systems work and how to use the one in your airplane to manage risk.

6.1.1 Automatic Flight Control System (AFCS)

How an Automatic Flight Control System (AFCS) Works
Using an Automatic Flight Control System (AFCS)

6.2 VOR AND NDB APPROACHES

Objective: You will learn about VOR and NDB approach procedures.

6.2.1 VOR Approaches

VOR Approach

6.2.2 Flying the NDB Approach

NDB Approach

6.3 ATC CLEARANCES, SERVICES, AND MORE APPROACHES

Objective: You will know your responsibilities when operating under an IFR clearance and techniques for flying circle-to-land, contact and visual approaches.

6.3.1 Clearances, Procedures, and Responsibilities

Clearances
IFR Clearances That Include VFR Conditions
Radar Services in the Terminal Area
Aeronautical Information Manual (AIM)

6.3.2 Circling, Contact, and Visual Approaches

Circling Approaches
Contact and Visual Approaches

6.4 ATC PROCEDURES

Objective: You will know what to do in the case of a communications failure.

6.4.1 ATC Procedures

Increasing Traffic Flow
Communications Failure
Complete Radio Failure

FLIGHT SCENARIOS

VOR/NDB APPROACHES
CIRCLING APPROACHES
MORE ILS AND NONPRECISION APPROACHES
PROGRESS STAGE 3 CHECK

Flight scenarios will be repeated as necessary to reach the desired proficiency

SCENARIO 1: VOR/NDB Approaches

FSTD MAY BE USED

Note: Although you may use an FSTD for this scenario, the maximum time that may be credited in an FSTD depends on the device category (FFS, FTD, AATD, BATD) and course enrollment (Part 61 or Part 141). E.g., a Part 61 course allows 10 hours instrument time in a BATD or 20 hours in an AATD [§61.65(i)]. The Part 141 course maximum is 25% (BATD) or 40% (AATD) of the total instrument training requirement (35 hours) [§141 Appendix C, 4.(b)(3)]. See §61.65(h) or §141 Appendix C, 4.(b)(1)-(3) for FFS or FTD.

Objective:
Learn how to fly a VOR nonprecision approach to the minimum descent altitude and missed approach point and decide whether to make a missed approach or continue below the approach minimums. If your airplane has a functioning ADF and there is a NDB approach available, you will also fly a nonprecision NDB approach.

Purpose/pressures (real or simulated):
You are making an after-work flight to a nearby airport to participate in a seminar on technically advanced aircraft.

Where to go:
An airport within 30 minutes flight time that has a suitable VOR approach and an airport with a suitable NDB approach if the airplane is ADF equipped.

How to get there:
Vectors or assigned route using navigation systems

Planned deviations:
As appropriate to deal with communication failure
As necessary if the airport environment is not in sight at the missed approach point

Planned malfunctions:
Loss of all communication radios during radar vectors for the approach

Risks (real or simulated):
Terrain rises over 3,000 feet above the destination airport elevation within 18 miles.
The only published approaches at the destination airport are nonprecision using ground-based navaids.
The forecast calls for ceilings at 400 feet above the VOR/NDB approach MDA and a visibility of 1 mile greater than the lowest approach minimums.

New this scenario:
VOR/NDB approach
Loss of communications

Improving your skills:
Communication with ATC
Compliance with ATC clearance
Approach briefing
Checklist usage
TAA or course reversal
Descend to the minimum descent altitude (MDA)
Identify the missed approach point
Execute missed approach procedure
Transition to landing from a straight-in approach

SCENARIO 2: Circling Approaches

Objective:
Fly a circling approach to the minimum descent altitude, initiate a circle-to-land maneuver as appropriate for your category of aircraft, and land on the appropriate runway.
Purpose/pressures (real or simulated):
You are flying to a nearby airport to look at an airplane for sale.
Where to go:
An airport within 30 minutes flight time that has a suitable nonprecision approach including the authorized circling procedures
How to get there:
Vectors or assigned route using navigation systems
Planned deviations:
As necessary if the airport environment is not in sight at the missed approach point or is lost during the circling maneuver
Planned malfunctions:
RAIM failure
Risks (real or simulated):
The destination airport has only one published instrument approach but multiple runways
The current and forecast winds make a 12 knot crosswind component with the straight-in runway
Forecast ceiling is no greater than 150 feet above the applicable circling MDA and visibility no greater than ¾ mile more than applicable minimum (not having the airport environment in sight at the missed approach point or losing sight of the runway while circling)

New this scenario:
Circling approach
- Determine circling approach minima
- Select and fly circling maneuver
- Execute missed approach during circling approach
- Transition to landing from a circling approach

Improving your skills:
Communication with ATC
Compliance with ATC clearance
Approach briefing
Checklist usage
TAA or course reversal
Descend to the minimum descent altitude (MDA)
Identify the missed approach point

SCENARIO 3: More ILS and Nonprecision Approaches

FSTD MAY BE USED

Note: Although you may use an FSTD for this scenario, the maximum time that may be credited in an FSTD depends on the device category (FFS, FTD, AATD, BATD) and course enrollment (Part 61 or Part 141). E.g., a Part 61 course allows 10 hours instrument time in a BATD or 20 hours in an AATD [§61.65(i)]. The Part 141 course maximum is 25% (BATD) or 40% (AATD) of the total instrument training requirement (35 hours) [§141 Appendix C, 4.(b)(3)]. See §61.65(h) or §141 Appendix C, 4.(b)(1)-(3) for FFS or FTD.

Objective:
Polish your ability to fly a precision instrument approach while incorporating departure and holding procedures.
Purpose/pressures (real or simulated):
You are flying to a business meeting that has been planned for a month.
Where to go:
A nearby area with suitable ILS and nonprecision approaches at one or more airports
How to get there:
Vectors or assigned route using navigation systems utilizing a departure procedure at one airport
Planned deviations:
En route holding because of a weather delay at the destination
As necessary if the airport environment is not in sight at the missed approach point or is lost during the circling maneuver
Planned malfunctions:
Possible radio failure
Risks (real or simulated):
Low instrument conditions forecast for destination airport (ceiling no greater than 50 feet higher above the applicable minimum altitude and visibility no greater than ½ mile more than applicable minimums)
Reduced fuel reserve because of unexpected holding
The last pilot to fly the airplane noted intermittent static in the radios

Improving your skills:
Single-pilot resource management
Preflight preparation
Communication with ATC
Compliance with ATC clearance
Approach briefing
Checklist usage
Departure procedures
Holding procedures
TAA or course reversal
Precision approach
Nonprecision approach
Circling approach
Execute missed approach procedure
Landing from a straight-in or circling approach
Loss of communications

Phase 6 Ground Training Checklist

*All items to be graded independently by the instructor and customer, then discussed and a final grade assessed. *Desired outcome for all tasks by the end of the phase is "Explain"*	Instruction Given	Describe	Explain
Using an automatic flight control system			
Determining circling approach minima			
Circling approach			
Required ATC communications			
Loss of communications			

Phase 6 Proficiency Checklist

*All items to be graded independently by the instructor and customer, then discussed and a final grade assessed. *Desired outcome for all tasks by the end of the phase is "Perform" or "Manage/Decide"*	Practice	Perform	Manage/ Decide
Single-pilot resource management *Utilizes all resources available to ensure the successful completion of the flight*			
Preflight preparation *Utilizes all resources necessary and current publications to prepare for the IFR flight, including research of published NOTAMS for any updates to approach minimums*			
Checklist usage *Uses checklists for all phases of flight*			
Communication with ATC *Is able to respond to and understand ATC calls*			
Compliance with ATC clearance *Understands, confirms, and flies clearances. Queries ATC if clearance may compromise safety*			
Departure procedures *Follows instructor, ATC, or published procedures ensuring obstacle clearance*			
Approach briefing *Makes an adequate, concise approach briefing to include missed approach point and procedures*			
Terminal Arrival Area (TAA) procedure or course reversal *Accurately flies the TAA or course reversal as published or cleared by ATC*			
VOR/NDB approach *No more than 3/4 scale deflection, continues from the MDA or makes a missed approach*			
Descend to minimum descent altitude (MDA) *Descends to +100 feet / -0 feet of MDA and flies to the missed approach point*			
Identify the missed approach point (MAP) *Identifies the MAP and makes a decision to continue below minimums or execute a missed approach*			
Circling approach *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Determine circling minima *Correctly determines approach category and required distance to maintain from runway*			
Select and fly circling maneuver *Selects and complies with the appropriate circling approach procedure considering turbulence, wind shear, and maneuvering capabilities of aircraft*			
Execute missed approach during circling approach *Executes a safe missed approach procedure if sight of the runway is lost*			
Transition to landing from a circling approach *Does not exceed visibility criteria or descend below the circling altitude until a position from which a descent to a normal landing can be made*			

Phase 6 Proficiency Checklist *continued*

Holding procedures *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Loss of communications *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Precision approach *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Nonprecision approach *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Execute missed approach procedure *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Transition to landing from a straight-in approach *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			

Phase 6 completion standards:

You have completed Phase 6 when you

- Fully understand instrument approach procedures
- Fly precision and nonprecision instrument approaches to meet the airman certification standards
- Make required communications with ATC
- Understand procedures for loss of communications
- Maintain situational awareness during actual or simulated IMC flights
- Use the checklist throughout the flight and on the ground as necessary
- Make safety-conscious approach briefings
- Have reviewed the Phase Progress Report with your instructor

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INSTRUCTOR NOTES:

SCENARIO 4: ***Progress Stage 3 Check***

Objective:
Fly with a check instructor to ensure you're able to safely fly instrument approaches to meet the Airman Certification Standards (ACS).
Purpose/pressures (real or simulated):
You are completing the flight portion of an interview and are flying with the chief pilot of the company you hope to work for.
Where to go:
A nearby area with suitable ILS and nonprecision approaches at one or more airports
How to get there:
Vectors or assigned route using navigation systems utilizing a departure procedure at one airport
Planned deviations:
None
Planned malfunctions:
Radio failure (not simultaneous with next malfunction)
Loss of navigation system (not simultaneous with previous malfunction)
Risks (real or simulated):
Stress from being evaluated

Testing your skills and knowledge:
Single-pilot resource management
Preflight preparation
Instrument cockpit check
Communication with ATC
Compliance with ATC clearances
Approach briefing
Checklist usage
Departure procedures
Holding procedures
TAA or course reversal
Precision approach
Nonprecision approach
Circling approach
Execute missed approach procedure
Landing from a straight-in or circling approach
Loss of communications

Phase 6 **Progress Stage 3 Check*- Oral*

Desired outcome for all tasks for the Progress Check is "Explain"	Instruction Given	Describe	Explain
Instrument approach procedures			
Single-pilot resource management			
Loss of communications			
Departure procedures			
Holding procedures			
Required ATC communications			
Emergency operations			

Phase 6 **Progress Check*- Flight*

Desired outcome for all tasks for the Progress Check is "Perform" or "Manage/Decide"	Practice	Perform	Manage/ Decide
Single-pilot resource management *Utilizes all resources available to ensure the successful completion of the flight*			
Preflight preparation *Utilizes all resources necessary and current publications to prepare for the IFR flight, including research of published NOTAMs for any updates to approach minimums*			
Checklist usage *Utilizes checklist during all ground and flight operations*			
Instrument cockpit check *Performs and ensures airplane is fit for IFR flight*			
Communication with ATC *Is able to respond to and understand ATC calls*			
Compliance with ATC clearances *Understands, confirms, and flies clearances. Queries ATC if clearance may compromise safety*			
Departure procedures *Follows instructor, ATC, or published procedures ensuring obstacle clearance*			
Holding procedures *Uses correct entry and communication procedures and flies a stable holding pattern*			
Approach briefing *Briefs approaches before FAF*			
Terminal arrival area (TAA) procedure or course reversal *Accurately flies the TAA or course reversal as published or cleared by ATC*			
Precision approach *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Nonprecision approach *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Circling approach *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Execute missed approach procedures *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Landing from a straight-in or circling approach *Approach to landing and touchdown are safe and utilize normal procedures conforming to ACS*			
Loss of communications *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			

*Phase 6 *Progress Stage 3 Check* completion standards:*

You have completed the Phase 4 **Progress Check** when you

- Perform and understand all preparation necessary for IFR flight
- Can safely perform instrument approach procedures to meet the airman certification standards
- Apply single-pilot resource management
- Demonstrate to the check instructor that the safety of flight is never in doubt

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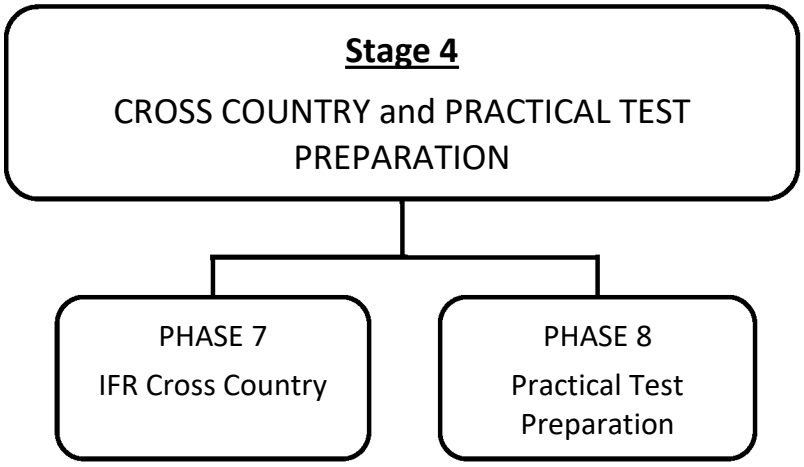
INSTRUCTOR NOTES:



Stage 4 consists of two Phases
- IFR Cross Country
- Practical Test Preparation

Stage Objective: During this stage you will
- File an IFR flight plan and receive an IFR clearance
- Fly cross country on an instrument flight plan
- Complete FAA IFR cross-country requirements
- Safely control the airplane using proper instrument cross-check and interpretation
- Polish all instrument flying skills
- Review for the oral and flight portion of the practical test
- Fly with a check instructor to check your readiness for the FAA practical test

Each phase contains **Web-based Knowledge Instruction**
- The web-based knowledge instruction for the phase should be completed prior to starting the flight scenarios to ensure fundamental knowledge before the flight.

Each phase contains multiple **Flight Scenarios** that can be
- Customized for your local training environment
- Repeated, or
- Omitted if all items in the Phase Proficiency Checklist are completed to standard.

At the end of each Phase are the **Ground Training Checklist** and **Phase Proficiency Checklist**
- All items in the checklist must be completed to the appropriate standard listed before the Phase is considered complete.

PHASE 7: IFR Cross Country

Phase Objective: During this phase you will
- Safely plan and conduct IFR cross-country flights
- Meet the FAA requirements for cross-country training

Web-based KNOWLEDGE INSTRUCTION

PROCEDURES FOR FLYING CROSS-COUNTRY IFR
PLANNING YOUR CROSS-COUNTRY FLIGHT
SAFETY TIPS AND TOOLS

7.1 PROCEDURES FOR FLYING CROSS COUNTRY IFR

Objective: You will know how to fly cross-country under instrument flight rules.

7.1.1 Cross-Country IFR

Radar Procedures and Services Enroute
IFR Procedures and Reports

7.2 PLANNING YOUR CROSS-COUNTRY FLIGHT

Objective: You will discover the wealth of resources available to help you plan a safe IFR cross-country flight.

7.2.1 IFR Cross-Country Planning

Chart Supplement
Gathering Weather Information
Preflight Planning
IFR Flight Plan

7.3 SAFETY TIPS AND TOOLS

Objective: You will gain insight on how to enhance safety during ground, departure, and arrival phases of your IFR flight.

7.3.1 Tips and Tools

Visual Illusions
Aeromedical Factors and Oxygen Rules
Avoiding Other Aircraft
Arriving IFR at a Non-Towered Airport
Flying Across Pressure and Temperature Changes
Avoiding Special Hazards at Airports
Visual Glideslope Indicators
Airport Signs and Markings
Flying in Icing Conditions
Operating the Autopilot During IFR Flight

7.3.2 Risk Management

Personal Minimums
PAVE Checklist
CARE Checklist
Two Rules for Safe IFR Flying

FLIGHT SCENARIOS

FLYING AN IFR CROSS COUNTRY
APPROACH WITH LOSS OF PRIMARY FLIGHT INSTRUMENTS
LONG IFR CROSS COUNTRY

Flight scenarios will be repeated as necessary to reach the desired proficiency

SCENARIO 1: FLYING AN IFR CROSS COUNTRY

Objective:
Plan and fly an instrument cross-country flight to your destination airport.
Purpose/pressures (real or simulated):
You are flying for a second look at an airplane you are interested in buying. You are bringing along your friend who is an experienced IFR pilot and certificated airframe and powerplant mechanic.
Where to go:
An airport at least 50 nm straight-line distance
How to get there:
Route as assigned (or modified) in ATC clearance, using installed navigation equipment and vectors (if assigned)
Planned deviations:
Diversion to another destination because of weather
Planned malfunctions:
Communications failure, navigation equipment failure (on return leg)
Risks (real or simulated):
Approaching front at your destination airport with rain showers, low ceilings, low visibilities, and winds gusting to 20 knots.
Runway favored by the wind does not have a straight-in approach
Confusion in the cockpit as to who is the pilot-in-command

New this scenario:
Automation management
Cross-country planning procedures
Compliance with departure, en route, and arrival procedures
Required ATC reports
Autopilot use

Improving your skills:
Single-pilot resource management
Communication with ATC
Compliance with ATC clearances
Intercepting and tracking navigational systems
Precision approach
Nonprecision approach
Landing from a straight-in or circling approach

SCENARIO 2: Approach with Loss of Primary Flight Instruments

FSTD MAY BE USED

Note: Although you may use an FSTD for this scenario, the maximum time that may be credited in an FSTD depends on the device category (FFS, FTD, AATD, BATD) and course enrollment (Part 61 or Part 141). E.g., a Part 61 course allows 10 hours instrument time in a BATD or 20 hours in an AATD [§61.65(i)]. The Part 141 course maximum is 25% (BATD) or 40% (AATD) of the total instrument training requirement (35 hours) [§141 Appendix C, 4.(b)(3)]. See §61.65(h) or §141 Appendix C, 4.(b)(1)-(3) for FFS or FTD.

Objective:
Fly an instrument approach with failed primary flight instruments.
Purpose/pressures (real or simulated):
You are flying, with your significant other, to a nearby town to a business meeting with a prospective client and/or investor. After departure your significant other wants to immediately return because of motion sickness.
Where to go:
A nearby area where one or more airports have suitable precision and nonprecision instrument approaches
How to get there:
Vectors or assigned route using navigation systems
Planned deviations:
Need to return to departure airport because of a sick passenger
Planned malfunctions:
Loss of primary flight instruments
Risks (real or simulated):
Controlled flight into terrain
Loss of situational awareness
Pilot disorientation
Distractions in the cockpit

New this scenario:
Precision approach with the loss of primary flight instruments
Nonprecision approach with the loss of primary flight instruments

Improving your skills:
Task management
Situational awareness
Automation management
Communication with ATC
Compliance with ATC clearances
Required ATC reports
Intercepting and tracking navigational systems
Precision approach
Nonprecision approach
Landing from a straight-in or circling approach

SCENARIO 3: Long IFR Cross Country

Objective:
Fly a 250 nm distance along airways or ATC-directed routing, with one segment of the flight consisting of at least a straight-line distance of 100 nm between airports.
Purpose/pressures (real or simulated):
You have a freelance assignment to take photos of the top FBOs at three different airports. Your deadline is the day after the scheduled flight.
Where to go:
Three different airports with an instrument approach at each airport involving three different kinds of approaches with the use of navigation systems
How to get there:
Route as assigned (or modified) in ATC clearance, using installed navigation equipment and vectors (if assigned)
Planned deviations:
As required en route
Planned malfunctions:
Alternator failure during missed approach (simulated by using reversionary mode)
Risks (real or simulated):
Unforecast weather
Limited battery life
Possible no-flap landing (because of low battery power)

New this scenario:
Alternator failure in IMC
No-flap approach and landing

Improving your skills:
Single-pilot resource management
Automation management
Cross-country planning procedures
Compliance with departure, en route, and arrival procedures
Communication with ATC
Compliance with ATC clearances
Required ATC reports
Autopilot use
Intercepting and tracking navigational systems
Precision approach
Nonprecision approach
Landing from a straight-in or circling approach
Nonprecision approach with the loss of primary flight instruments

Phase 7 Ground Training Checklist

*All items to be graded independently by the instructor and customer, then discussed and a final grade assessed. *Desired outcome for all tasks by the end of the phase is "Explain"*	Instruction Given	Describe	Explain
Cross-country planning procedures			
Filing an IFR flight plan and alternate planning			
IFR procedures and reports			

Phase 7 Proficiency Checklist

*All items to be graded independently by the instructor and customer, then discussed and a final grade assessed. *Desired outcome for all tasks by the end of the phase is "Perform" or "Manage/Decide"*	Practice	Perform	Manage/ Decide
Single-pilot resource management *Utilizes all resources available to ensure the successful completion of the flight*			
Task management *Prioritizes and completes tasks, executes checklists in a manner that minimizes distraction from flying the airplane*			
Automation management *Use the autopilot to reduce workload as appropriate*			
Situational awareness *Utilizes and monitors available resources to maintain situational awareness*			
Preflight procedures			
Cross-country planning procedures *Uses all appropriate resources to plan for cross-country flight*			
In-flight			
Communications with ATC *Is able to respond to and understand ATC calls*			
Compliance with ATC clearances *Follows instructor, ATC, or published procedures ensuring obstacle clearance*			
Required ATC reports *Makes any required reports*			
Intercepting and tracking navigational systems *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Precision approach *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Nonprecision approach *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Precision approach with the loss of primary flight instruments *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Nonprecision approach with the loss of primary flight instruments *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Landing from a straight-in or circling approach *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			

Phase 7 Proficiency Checklist *continued*

Autopilot use *Can engage/manipulate the appropriate functions of the autopilot and monitor its operation*			
Compliance with departure, en route, and arrival procedures *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Alternator failure in IMC *Takes prompt, decisive action to deal with and mitigate this emergency*			
No-flap approach and landing *Evaluates conditions, runway suitability, and makes the adjustments necessary for successful landing*			

Phase 7 completion standards:

You have completed Phase 7 when you

- Complete FAA IFR cross-country requirements
- Maintain situational awareness during actual or simulated IMC flights
- Use the checklist throughout the flight and on the ground as necessary
- Make safety-conscious approach briefings
- Have reviewed the Phase Progress Report with your instructor

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Stage 4, Phase 7: IFR Cross Country

INSTRUCTOR NOTES:

PHASE 8: Practical Test Preparation

Phase Objective: During this phase you will

- Review all required material in preparation for the practical test
- Meet or exceed the Instrument Rating Airman Certification Standards (ACS)

Web-based KNOWLEDGE

ACHIEVING YOUR INSTRUMENT RATING

8.1 ACHIEVING YOUR INSTRUMENT RATING

Objectives: You will know how to pass your practical test and use your instrument rating.

8.1.1 Instrument Rating Practical Test

Passing the Test
Your New Rating

FLIGHT SCENARIOS

POLISHING ALL IFR SKILLS
FINAL PROGRESS STAGE 4 CHECK

Flight scenarios will be repeated as necessary to reach the desired proficiency

SCENARIO 1: Polishing All IFR Skills

Objective:
This is a review flight before the final progress check in order to polish all skills to the current Instrument Rating Airman Certification Standards (ACS).
Purpose/pressures (real or simulated):
This flight will be tailored to your individual needs and focused on areas requiring special assistance or review.
Where to go:
An area free of dense traffic having one or more airports with appropriate published instrument approach procedures
How to get there:
Vectors or assigned route using navigation systems
Planned deviations:
As assigned
Planned malfunctions:
As assigned
Risks (real or simulated):
As assigned

Improving your skills:
Special emphasis areas
- Positive aircraft control
- Positive exchange of the flight controls
- Stall/spin awareness
- Collision avoidance
- Wake turbulence avoidance
- Land and hold short operations (LAHSO)
- Runway incursion avoidance
- Checklist usage
- Icing conditions: operational hazards, and anti-icing and deicing equipment

Single-pilot resource management
- Aeronautical decision making
- Risk management
- Task management
- Situational awareness
- Controlled flight into terrain awareness
- Automation management

Preflight preparation
- Pilot qualifications
- Weather information
- Cross-country flight planning
- Preflight procedures
- Aircraft systems related to IFR operations
- Aircraft flight instruments and navigation equipment
- Instrument cockpit check

Air traffic control clearances and procedures
- ATC clearances
- Compliance with departure, en route, and arrival procedures and clearances
- Holding procedures

Flight by reference to instruments
- Basic instrument flight maneuvers
- Recovery from unusual flight attitudes

Navigation systems
- Intercepting and tracking navigation systems and DME arcs

SCENARIO 1: Polishing All IFR Skills *continued*

Instrument approach procedures
- Nonprecision approach
- Precision approach
- Missed approach
- Circling approach
- Landing from a straight-in or circling approach

Emergency operations
- Loss of communications
- Approach with loss of primary flight instrument indicators

Postflight procedures
- Note and document equipment and/or aircraft malfunctions

Phase 8 Ground Training Checklist

*All items to be graded independently by the instructor and customer, then discussed and a final grade assessed. *Desired outcome for all tasks by the end of the phase is "Explain"*	Instruction Given	Describe	Explain
Special emphasis areas			
Single-pilot resource management			
Pilot qualifications			
Weather information			
Cross-country flight planning			
Airplane systems related to IFR operations			
Airplane flight instruments and navigation equipment			
Instrument cockpit check			
Terminal Publication Procedures (TPP)			
Aeronautical decision making			
Risk management			
Task management			
Situational awareness			
Controlled flight into terrain awareness			
Automation management			
Crew resource management			
Use of checklists			
Use of distractions during practical test			
Positive exchange of flight controls			
Attitude instrument flying			
Emergency instrument procedures			

Phase 8 Proficiency Checklist

*All items to be graded independently by the instructor and customer, then discussed and a final grade assessed. *Desired outcome for all tasks by the end of the phase is "Perform" or "Manage/Decide"*	Practice	Perform	Manage/ Decide
Single-pilot resource management (SRM) *Utilizes all resources available to ensure the successful completion of the flight*			
Preflight procedures			
Preflight preparation *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Instrument cockpit check *Performs preflight on instruments, avionics, and navigation equipment*			
Checklist usage *Utilizes checklist during all ground and flight operations*			
In-flight			
Communication with air traffic control and clearances *Is able to respond to and understand ATC calls and clearances and make required reports*			
Compliance with departure, en route, and arrival procedures and clearances *Follows clearances and assigned published procedures*			

Phase 8 Proficiency Checklist *continued*

Holding procedures *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Basic instrument flight maneuvers *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Recovery from unusual flight attitudes *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Intercepting and tracking navigational systems and DME arcs *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Nonprecision approach (NPA) *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Precision approach (PA) *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Missed approach *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Circling approach *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Landing from a straight-in or circling approach *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Emergency operations — Loss of communications *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Emergency operations — Approach with loss of primary flight instrument indicators *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Postflight procedures			
Checking instrument and equipment *Notes all flight equipment for proper operation and documents malfunctions*			

Phase 8 completion standards:

You have completed Phase 8 when you

- Meet the standards outlined in the Instrument Rating Airman Certification Standards.

SCENARIO 2: **Final Progress Stage 4 Check**

Objective:
Complete the final progress check for the course.
Purpose/pressures (real or simulated):
This flight will be conducted in accordance with the current Instrument Rating Airman Certification Standards (ACS) and is considered a mock practical test.
Where to go:
As assigned
How to get there:
Vectors, ATC clearance
Planned deviations:
As assigned
Planned malfunctions:
As assigned
Risks (real or simulated):
As assigned

Checking your skills and knowledge:
Special emphasis areas
- Positive aircraft control
- Positive exchange of the flight controls
- Stall/spin awareness
- Collision avoidance
- Wake turbulence avoidance
- Land and hold short operations (LAHSO)
- Runway incursion avoidance
- Checklist usage
- Icing conditions: operational hazards, and anti-icing and deicing equipment

Single-pilot resource management
- Aeronautical decision making
- Risk management
- Task management
- Situational awareness
- Controlled flight into terrain awareness
- Automation management

Preflight preparation
- Pilot qualifications
- Weather information
- Cross-country flight planning

Preflight procedures
- Aircraft systems related to IFR operations
- Aircraft flight instruments and navigation equipment
- Instrument cockpit check

Air traffic control clearances and procedures
- ATC clearances
- Compliance with departure, en route, and arrival procedures and clearances
- Holding procedures

Flight by reference to instruments
- Basic instrument flight maneuvers
- Recovery from unusual flight attitudes

Navigation systems
- Intercepting and tracking navigation systems and DME arcs

SCENARIO 2: **Final Progress Stage 4 Check* continued*

Instrument approach procedures
- Nonprecision approach
- Precision approach
- Missed approach
- Circling approach
- Landing from a straight-in or circling approach

Emergency operations
- Loss of communications
- Approach with loss of primary flight instrument indicators

Postflight procedures
- Checking instruments and equipment

Phase 8 **Progress Stage 4 Check*- Oral*

Desired outcome for all tasks for the Progress Check Oral is "Explain" *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*	Instruction Given	Describe	Explain
Special emphasis areas			
Single-pilot resource management			
Pilot qualifications			
Weather information			
Cross-country flight planning			
Airplane systems related to IFR operations			
Airplane flight instruments and navigation equipment			
Instrument cockpit check			
Terminal Publication Procedures (TPP)			

Phase 8 **Progress Stage 4 Check*- Flight*

Desired outcome for all tasks for the Progress Check is "Perform" or "Manage/Decide"	Practice	Perform	Manage/ Decide
Single-pilot resource management (SRM) *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Preflight procedures			
Preflight preparation *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Instrument cockpit check *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Checklist usage *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
In-flight			
Communication with air traffic control and clearances *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Compliance with departure, en route, and arrival procedures and clearances *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Holding procedures *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Basic instrument flight maneuvers *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Recovery from unusual flight attitudes *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Intercepting and tracking navigational systems and DME arcs *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Nonprecision approach (NPA) *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Precision approach (PA) *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Missed approach *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			

Phase 8 **Progress Stage 4 Check*- Flight continued*

Circling approach *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Landing from a straight-in or circling approach *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Emergency operations — Loss of communications *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Emergency operations — Approach with loss of primary flight instrument indicators *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			
Postflight procedures			
Checking instruments and equipment *Refer to Instrument Rating Airman Certification Standards (FAA-S-ACS-8) in the course Library*			

*Phase 8 *Progress Stage 4 Check* completion standards:*

You have completed the Phase 8 **Progress Check** when you

- Demonstrate the aeronautical knowledge and skill to safely perform at or above the airman certification standards and demonstrate sound decision-making.
- Have demonstrated your ability as an instrument rated pilot

Stage 4, Phase 8: Practical Test Preparation

INSTRUCTOR NOTES:

Cessna Instrument Rating Course Training Requirements

Requirements for enrollment

Prior to enrolling in the flight portion of the Instrument Rating course, the customer must

- Hold at least a Private Pilot certificate with
    - An airplane category, single engine land class rating

Ground training requirements

The customer must successfully complete

- All web-based knowledge instruction and flight previews
- All Ground Training Checklists
- All Progress Checks
- Cessna Pilot Center Final Exam

Flight training requirements

Prior to completing the Cessna Instrument Rating Course

- The applicable minimum hourly requirements must be met
- As well as the successful completion of all Phase Proficiency Checklists and Progress Checks

Requirements for graduation

To obtain a graduation certificate for the Instrument Rating course, the applicant must:

- Be able to read, speak, write and understand English
- Complete all ground training requirements
- Complete all flight training requirements
- Complete the FAA Instrument Rating-Airplane Knowledge Test

Minimum flight time requirements

The course is designed to meet the minimum hour requirements of

- 14 CFR Part 141, Appendix C
- 14 CFR Part 61 Subpart B

The minimum FAA hour requirements

- Vary depending upon your course of enrollment
- Are to be thought of as minimums only
    - The goal is to prepare you to be a competent, proficient instrument pilot

What you get at an FAA certificated flight school (under 14 CFR Part 141)

If you take a course with this syllabus under Part 141 of the Federal Aviation Regulations, you are assured that flight school has been approved by the FAA and is required to demonstrate and maintain

- Standardized flight operations, including *Safety Procedures and Practices*
- A structured training environment
- Detailed training records available for regular and unannounced FAA checks and inspection
- At least an 80% first attempt pass rate for certificate or rating applicants training under Part 141

Because of this level of structure and supervision, a Part 141 approved curriculum is authorized to graduate qualified applicants in fewer flight hours.

Appendix A

GROUND TRAINING SUMMARY

Phase	Online Knowledge Lessons*	Online Flight Previews	Pre-flight & Post-flight Briefings**	Ground Training Checklist	Total
1	6.9	1.2	1.5	1.5	11.1
2	6.4	0.6	2.0	1.5	10.5
Stage 1 Totals	13.3	1.8	3.5	3.0	21.6
3	5.1	0.6	1.5	2.0	9.2
4	3.0	0.4	1.5	1.5	6.4
Stage 2 Totals	8.1	1.0	3.0	3.5	15.6
5	4.6	1.0	2.0	1.0	8.6
6	2.2	0.6	2.0	1.5	6.3
Stage 3 Totals	6.8	1.6	4.0	2.5	14.9
7	2.9	0.4	1.5	1.5	6.3
8	0.3	0.0	1.0	1.0	2.3
Stage 4 Totals	3.2	0.4	2.5	2.5	8.6
Totals	**31.4**	**4.8**	**13.0**	**11.5**	**60.7**

* Based on a 45 second average per each lesson page and question.

** Based on 0.5 hour average total pre-flight and post-briefing per flight.

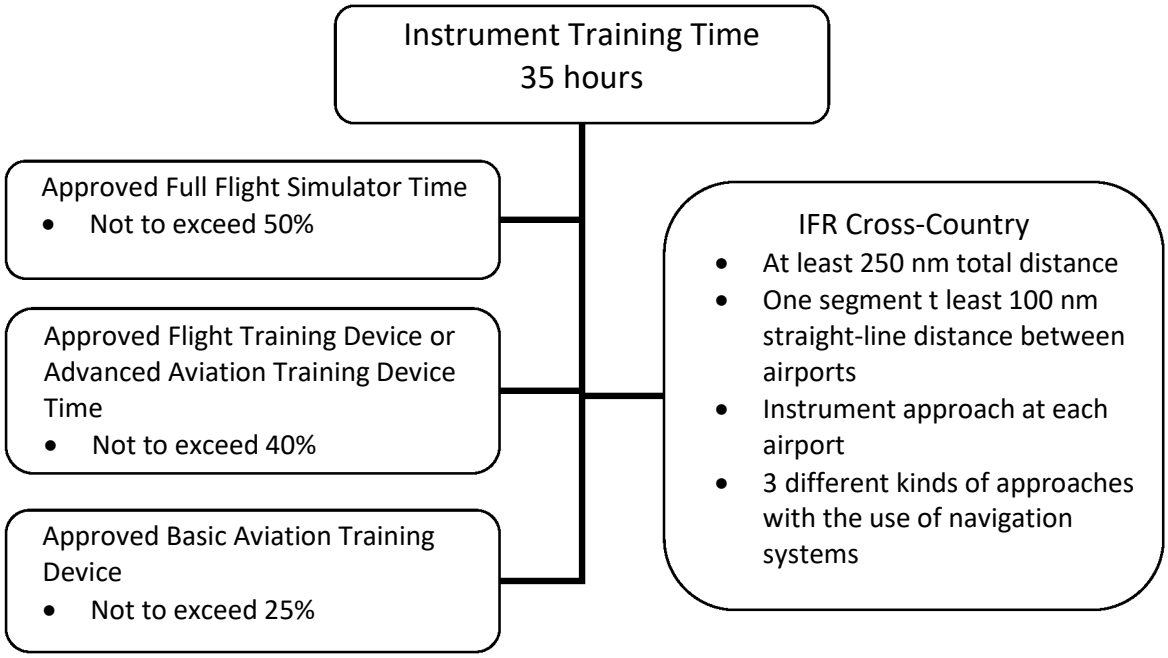
This syllabus accommodates the required 30-hour minimum aeronautical knowledge training when used as a Part 141, Appendix C curriculum as shown in the table above.

The aeronautical knowledge training occurs through multiple paths including online tested self study, viewing the online flight-preparatory video segments, and instructor/customer interaction in the pre- and post-flight briefings. Instruction will also be given during the instructor/customer Ground Training Checklist reviews.

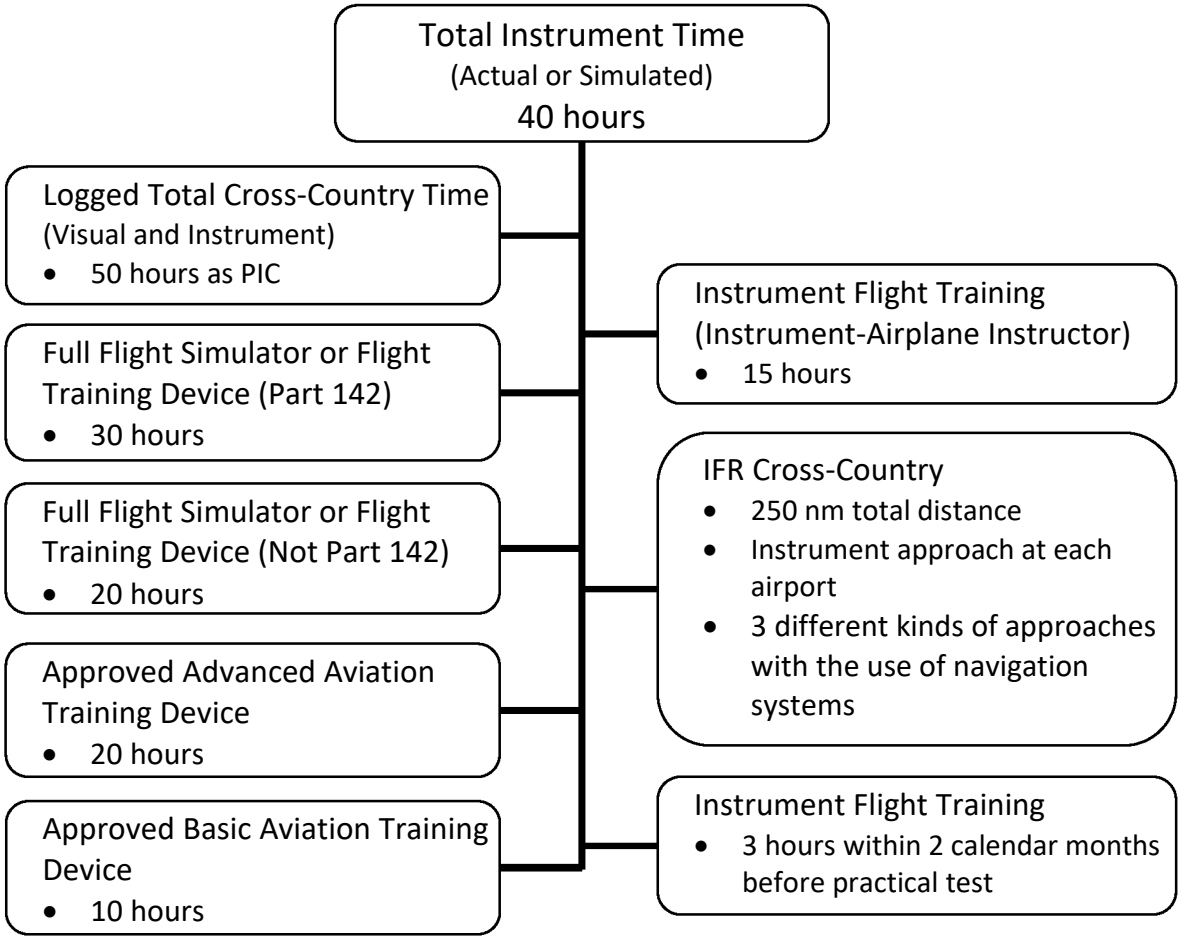
A customer receives credit for the online course study when they complete every lesson within the course. To complete a lesson, the customer must satisfactorily complete every question within that lesson.

Customer aeronautical knowledge competence is assured through instructor/customer Ground Training Checklist reviews that must be demonstrated to the Explain level and the Cessna Pilot Center (CPC) knowledge test.

Instrument Rating Course, Part 141



Instrument Rating Course, Part 61



Appendix A

RECOMMENDED FLIGHT TIMES

- All times listed are the minimum requirements for that flight training category. The 50 hours of Cross-Country PIC time for a Part 61 curriculum must be met prior to the practical test.
- Flight Training (often called “dual”) means time spent receiving flight instruction from an authorized instructor.
- By equaling or exceeding the times in each category listed in the following tables, you are assured that you have met the minimum flight time requirements for your course.
- Since Cessna 172 Skyhawks may be equipped with either analog (“round dial”) flight instruments or the G1000 advanced avionics system, some scenarios are designated as specific to the instrument platform. When appropriate, there are parallel scenarios with the same objective, but tailored for the platform (G1000 or Analog). Only of one of each set of parallel scenarios are intended to be flown. Shading denotes parallel scenarios.
- Some scenarios are designated such that they may be flown on a Flight Simulation Training Device (FSTD). Instrument training or flight time performed on an Aviation Training Device (ATD), a Full Flight Simulator (FSS), or a Flight Training Device (FTD) that exceeds the restrictions permitted for either Part 141 or Part 61 curriculum will not apply to the total instrument training/time requirements.

Instrument Rating (Part 141)

STAGE 1 ***(INSTRUMENT RATING, Part 141)***

Phase #	Scenario #	Platform	Total Time	Instrument Flight Training	Instrument Cross-country	Full Flight Simulator	Flight Training Device	Aviation Training Device
1	1	Either	1.0	1.0				
	2	Either	1.0	1.0				
	3	G1000	1.0	1.0				
	4	Analog	1.0	1.0				
2	1	Either	1.0	1.0				
	2	G1000	1.0	1.0				
	3	Analog	1.0	1.0				
	4	G1000 FSTD	1.0	1.0				
	5	G1000	1.0	1.0				
	6	Analog	1.0	1.0				
	7 ***Prog*** √	G1000	1.0	1.0				
	8 ***Prog*** √	Analog	1.0	1.0				
Stage	**7**		**7.0**	**7.0**				
Total	**7**		**7.0**	**7.0**				

STAGE 2 ***(INSTRUMENT RATING, Part 141)***

Phase #	Scenario #	Platform	Total Time	Instrument Flight Training	Instrument Cross-country	Full Flight Simulator	Flight Training Device	Aviation Training Device
3	1	Either	1.0	1.0				
	2	Either	1.0	1.0				
	3	Either	1.0	1.0				
4	1	Either	1.0	1.0				
	2	Either	1.0	1.0				
	3 ***Prog*** √	Either	1.0	1.0				
Stage	**6**		**6.0**	**6.0**				
Total	**13**		**13.0**	**13.0**				

STAGE 3 ***(INSTRUMENT RATING, Part 141)***

Phase #	Scenario #	Platform	Total Time	Instrument Flight Training	Instrument Cross-country	Full Flight Simulator	Flight Training Device	Aviation Training Device
5	1	Either	1.4	1.4				
	2	Either	1.4	1.4				
	3	Either	1.4	1.4				
	4	Either	1.4	1.4				
6	1	Either	1.5	1.5				
	2	Either	1.4	1.4				
	3	Either	1.4	1.4				
	4 ***Prog*** √	Either	1.9	1.9				
Stage	**8**		**11.8**	**11.8**				
Total	**21**		**24.8**	**24.8**				

STAGE 4 ***(INSTRUMENT RATING, Part 141)***

Phase #	Scenario #	Platform	Total Time	Instrument Flight Training	Instrument Cross-country	Full Flight Simulator	Flight Training Device	Aviation Training Device
7	1	Either	1.7	1.7	1.7			
	2	Either	1.5	1.5				
	3	Either	3.0	3.0	3.0			
8	1	Either	2.0	2.0				
	2 ***Prog*** √	Either	2.0	2.0				
Stage	**5**		**10.2**	**10.2**	**4.7**			

COURSE TOTALS ***(INSTRUMENT RATING, Part 141)***

Total	**26**		**35.0**	**35.0**	**4.7**			

Appendix A

Instrument Rating (Part 61)

STAGE 1 ***(INSTRUMENT RATING, Part 61)***

Phase #	Scenario #	Platform	Total Time	Instrument Flight Training	Instrument Cross-country	Full Flight Simulator	Flight Training Device	Aviation Training Device
1	1	Either	1.2	1.2				
	2	Either	1.2	1.2				
	3	G1000	1.2	1.2				
	4	Analog	1.2	1.2				
2	1	Either	1.2	1.2				
	2	G1000	1.2	1.2				
	3	Analog	1.2	1.2				
	4	G1000 FSTD	1.2	1.2				
	5	G1000	1.2	1.2				
	6	Analog	1.2	1.2				
	7 ***Prog*** √	G1000	1.5	1.5				
	8 ***Prog*** √	Analog	1.5	1.5				
Stage	**7**		**8.7**	**8.7**				
Total	**7**		**8.7**	**8.7**				

STAGE 2 ***(INSTRUMENT RATING, Part 61)***

Phase #	Scenario #	Platform	Total Time	Instrument Flight Training	Instrument Cross-country	Full Flight Simulator	Flight Training Device	Aviation Training Device
3	1	Either	1.3	1.3				
	2	Either	1.3	1.3				
	3	Either	1.3	1.3				
4	1	Either	1.3	1.3				
	2	Either	1.3	1.3				
	3 ***Prog*** √	Either	1.5	1.5				
Stage	**6**		**8.0**	**8.0**				
Total	**13**		**16.7**	**16.7**				

STAGE 3 ***(INSTRUMENT RATING, Part 61)***

Phase #	Scenario #	Platform	Total Time	Instrument Flight Training	Instrument Cross-country	Full Flight Simulator	Flight Training Device	Aviation Training Device
5	1	Either	1.5	1.5				
	2	Either	1.5	1.5				
	3	Either	1.5	1.5				
	4	Either	1.5	1.5				
6	1	Either	1.6	1.6				
	2	Either	1.6	1.6				
	3	Either	1.6	1.6				
	4 ***Prog*** √	Either	2.0	2.0				
Stage	**8**		**12.8**	**12.8**				
Total	**21**		**29.5**	**29.5**				

STAGE 4 ***(INSTRUMENT RATING, Part 61)***

Phase #	Scenario #	Platform	Total Time	Instrument Flight Training	Instrument Cross-country	Full Flight Simulator	Flight Training Device	Aviation Training Device
7	1	Either	2.0	2.0	2.0			
	2	Either	1.5	1.5				
	3	Either	3.0	3.0	3.0			
8	1	Either	2.0	2.0				
	2 ***Prog*** √	Either	2.0	2.0				
Stage	**5**		**10.5**	**10.5**	**5.0**			

COURSE TOTALS ***(INSTRUMENT RATING, Part 61)***

Total	**26**		**40.0**	**40.0**	**5.0**			

PAVE Checklist

PAVE your way to a safe instrument flight. Before you fly, examine your risk factors.

Remember the cumulative effect. Change your plan whenever more than one risk factor is marginal.

Pilot
Aircraft
en**V**ironment
External Pressures

PILOT

Make a frank assessment of your own skills.

- ❑ Am I proficient (not just current) for flying in today's weather?
- ❑ Do I have recent experience in actual instrument conditions?
- ❑ Am I proficient with the avionics and the navigation systems for this flight?
- ❑ Am I rested and have I checked the IMSAFE elements?

AIRCRAFT

Evaluate the capability of the aircraft.

- ❑ Does this airplane have enough redundancy of communication radios, navigation equipment, and flight instruments or display?
- ❑ Is the lighting working and good enough for night instrument flying?
- ❑ Does this airplane have sufficient performance reserve for this flight?
- ❑ Is there enough range reserve to reach a legal and safe alternate?

ENVIRONMENT

Evaluate the environmental factors at the airport and on the runway.

- ❑ Are conditions at my destination forecast for marginal IFR?
- ❑ Are there areas for a good weather alternate within my fuel range?
- ❑ What is the crosswind component on the active runway?
- ❑ Is the runway slick from water, snow, or slush?
- ❑ Are braking action reports available?

External Pressures

Evaluate pressures that influence you to make or complete the flight.

- ❑ Do someone else's plans depend on you completing this flight?
- ❑ Are peers encouraging you to take off or land despite the conditions?
- ❑ What are your strategies for managing the external pressures specific to this flight?

CARE Checklist

Use the CARE attention scan to recognize and manage the changing risk factors in flight and for landing.

Manage your workload so that you have time to use the CARE checklist to deal with changes.

Consequences
Alternatives
Reality
External Pressures

Consequences

- ❑ Am I thinking: What is changing at my destination and alternate?
- ❑ Am I evaluating the consequences of changes I am seeing?
- ❑ Am I prepared for a later arrival, lower ceilings and visibility, gusts, or crosswind component more than I anticipated?
- ❑ Is moisture on the runway, and will temperature be a factor?

Alternatives

- ❑ Do I have more than one alternate course of action?
- ❑ Are conditions changing at my destination?
- ❑ Should I land now to expand my circle of alternatives and remove pressure to land in adverse conditions?

Reality

- ❑ Have I accepted the fact that the weather at my destination airport has changed?
- ❑ Has the goal to land at my destination put me in denial?
- ❑ Am I dealing with things as they really are enroute and at my destination, or just as I planned them?

External Pressures

- ❑ Am I ignoring risk factors in order to land at my destination?
- ❑ Am I managing my own goal-oriented behavior?
- ❑ Are pressures influencing me to continue under unsuitable conditions?