



# INSTRUMENT PILOT SYLLABUS

## Ground Training



# Gold Seal Ground School

## Instrument Pilot Syllabus Ground Training

Instrument Rating - Airplane

**First Edition**

**Meets Part 61 and 141 Aeronautical Knowledge Requirements**

14 CFR 141, Appendix L - Pilot Ground School Course

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# Welcome to the Gold Seal Instrument Pilot Ground School

Welcome aboard! We are thrilled to welcome you to the Gold Seal Instrument Pilot Ground School. Your decision to embark on this journey marks a significant milestone in your aviation career, and we're here to support you every step of the way.

You are about to immerse yourself in an advanced realm of aeronautical knowledge and skills, focusing on the intricacies of instrument flying. The journey to becoming an instrument-rated pilot is challenging yet incredibly rewarding, filled with learning opportunities and discoveries. Our course is carefully crafted to ensure this journey is as smooth and engaging as possible. Featuring interactive and comprehensive lessons, along with a wealth of engaging resources, our curriculum is designed to make even the most complex instrument flying concepts accessible and understandable.

We recognize the unique challenges and demands of instrument pilot training. That's why our dedicated team is committed to providing you with the necessary guidance and support throughout your training journey. Our course goes beyond simply fulfilling requirements; it aims to build your confidence, competence, and most importantly, a deep-seated passion for instrument flying.

With your determination and our expert guidance, success is within your reach. We are thrilled to be part of your journey towards mastering the skills of instrument flight. Get ready to elevate your piloting skills with Gold Seal Ground School and take the next significant step in your aviation journey. The skies await, and we're excited to watch you excel in this new chapter of your flying!

## Course Objective

The objective of this Gold Seal Instrument Pilot Ground School Training Syllabus is to provide learners with the comprehensive aeronautical knowledge necessary for earning the Federal Aviation Administration (FAA) Instrument Rating in the Airplane category. This specialized curriculum meticulously covers all subject areas mandated by the FAA for instrument training, ensuring a detailed understanding of advanced navigation, meteorology, flight instruments, and Instrument Flight Rules (IFR) procedures. Our structured learning approach guarantees meeting the required aeronautical knowledge experience hours through the interactive Gold Seal Ground School while emphasizing the practical application of these concepts in real-world instrument flying scenarios. Upon completion of this course, learners will be thoroughly prepared to excel in the **FAA Instrument Rating Airplane (IRA) knowledge test** and, equally importantly, to operate safely and proficiently as instrument-rated pilots.

## Enrollment Prerequisites

**Ground Training Prerequisites:** Enrolling in the Gold Seal Instrument Pilot Ground School Training marks a significant advancement in your aviation journey. While there are no strict prerequisites to begin this ground training, it is essential that you are able to read, speak, and understand the English language. This competency is crucial as it forms the basis of all the learning materials, communication during training, and interaction with aviation resources including Air Traffic Control and Flight Service, particularly under IFR conditions.

**Flight Training Prerequisites:** While this syllabus covers ground school training, as you prepare for the practical aspect of becoming an instrument rated pilot, there are a few key prerequisites for enrolling in an Instrument Pilot flight training certification course. Your flight school may have additional enrollment requirements.

1. **Pilot Certification:** You must hold at least a private pilot certificate, specifically with the category and class corresponding to the rating sought, e.g. airplane category and single-engine land class rating. This prerequisite is essential as it confirms that you already possess the fundamental skills and knowledge of piloting an airplane, upon which instrument training builds.
2. **Citizenship Verification:** It's necessary to verify your citizenship with your flight school or Certificated Flight Instructor (CFI), who will provide a citizenship verification endorsement. This process is a standard security measure in aviation training required by the Transportation Security Administration (TSA). Your CFI or flight school can provide you with a list of documents accepted by the TSA for this purpose.
3. **Language Proficiency:** You must be able to read, speak, write, and understand the English language proficiently. This ability is crucial for effective communication, especially under IFR conditions, and for understanding the technical and regulatory aspects of instrument flying.
4. **Medical Standards:** You need to meet the physical standards required for at least a third-class medical certificate or operate under BasicMed. This ensures that you are medically fit to undertake the additional challenges and responsibilities associated with instrument flight.

These prerequisites are designed to ensure that you are adequately prepared for the complexities of instrument flight training, both in terms of your existing piloting skills and your overall readiness to undertake this advanced certification.

## How to Complete the Course: A Guide to Your Success in Gold Seal Ground School

This syllabus is meticulously designed to guide you through your journey to becoming a Instrument Rated Pilot. It is organized into eight stages, where each stage is comprised of multiple modules that group individual lessons together. Within our Gold Seal Ground School Course, these **stages** are referred to as **sections**. Each module within a stage covers a series of lessons that systematically address specific aeronautical knowledge topics, ensuring a comprehensive progression from foundational concepts to more complex aviation skills. This structured approach builds a solid foundation and steadily increases your expertise, ensuring readiness for each subsequent phase of your pilot training.

**Interactive Learning Experience:** Our course is hosted on the innovative Gold Seal Ground School online platform. Each lesson is a blend of engaging videos, some with unique interactive content, to promote active learning. This format ensures that you are not just a passive participant but an active learner, engaging with the material in a meaningful way. Our interactive features are unparalleled in quality, making our course stand out in terms of content delivery, ease of use, and effectiveness.

## Description of the Checks and Tests to Measure Learner Accomplishments

**Quizzes and Stage Checks:** While not all lessons include a quiz, those that do are crucial in evaluating your knowledge and identifying areas that may require additional study. These quizzes are an integral part of the learning process, encompassing knowledge test questions modeled after the actual FAA test. Following each of the eight sections, you will encounter a stage check. These 30-question comprehensive quizzes cover all topics presented in the section and must be passed with a minimum grade of 90%.

**End-of-Course Test:** Upon viewing all lessons and passing all stage checks, you will take the end-of-course test at the completion of the final section. This 60-question test is designed to simulate the FAA knowledge test and must be passed with a 90%. You can attempt this test multiple times, but only once every 24 hours, providing ample opportunity for review and preparation. To prepare for the end-of-course test, we provide you with practice exams that you can take as many times as you'd like.

**Earning Your Certificate of Completion:** Completing all lessons meets the aeronautical knowledge ground school requirements earning you a Certificate of Completion. This is a critical step towards eligibility for the Instrument Rating-Airplane practical certification test, also known as the "checkride." In addition, passing the end-of-course test, (which serves as the final exam) earns you the signed endorsement required to take the FAA Instrument Rating-Airplane (IRA) knowledge test. If you are completing this course under 14 CFR Part 61, the completion certificate also serves as an endorsement for completing a home course of study.

**Our Commitment to Your Success:** The Gold Seal course is designed to expedite your training with minimum effort, thanks to our easy-to-use platform, high-quality content, engaging videos, animations, and a constantly updated question database. We are confident that this course is the best available resource in your aviation training journey, guiding you smoothly from the basics to the complexities of pilot training.

## Graduation Requirements

To graduate from the course, learners are required to complete at least 30 hours\* of aeronautical knowledge training, as prescribed in 14 CFR (Code of Federal Regulations) 141 Appendix C (3)(a)(1), and successfully pass all course tests, including lesson quizzes, where applicable, and comprehensive stage checks. Each module and lesson within every stage must be completed to ensure a thorough learning experience, culminating in the successful completion of the end-of-course test. This structured approach, completed via the Gold Seal Ground School, ensures that learners acquire a comprehensive understanding of aeronautical knowledge, essential for passing the FAA Instrument Rating-Airplane (IRA) knowledge test and for a safe, skilled piloting career.

\* The minimum time requirement does not apply to learners training under Part 61.

**Embark on this journey with us, where learning is not just about passing tests but becoming a skilled, knowledgeable, confident, and safe pilot ready to take on the skies!**



## Requirements to Become an Instrument Rated Pilot

To earn an Instrument Rating and elevate your piloting capabilities, there are specific requirements that you must meet. These criteria are designed to ensure that you have the necessary knowledge, skills, and experience to safely and proficiently conduct flights under IFR. Here are the key requirements:

- **Pilot Certification:** Hold at least a private pilot certificate pursuant to the rating sought, (e.g. airplane, single-engine land category and class).
- **Language Proficiency:** Ability to read, speak, and understand the English language, which is essential for clear communication and understanding of IFR procedures and regulations.
- **Flight Time Requirements:** Meet the flight time requirements specified under either Part 61 or Part 141, which details the minimum hours of flight training and experience you must have.
- **Medical Certificate:** Possess at least a third class medical certificate issued by an Aviation Medical Examiner (AME), or operate under BasicMed guidelines.
- **FAA Airman Knowledge Exam:** Successfully pass the FAA Airman Knowledge Exam for Instrument Rating-Airplane (IRA) with a score of 70% or better.
- **CFI Endorsements:** Obtain the required endorsements from your certificated flight instructor instrument (CFII).
- **Practical Test:** Pass a practical test, which includes both an oral examination and a flight evaluation to assess your IFR skills.
- **Additional Experience for Part 61 Programs:** 50 hours of cross-country pilot-in-command (PIC) flight time, with no minimum ground training time specified.

The Gold Seal Ground School will guide you through each of these steps. Our comprehensive curriculum, combined with the support of your CFII and flight school staff, will ensure you are well-prepared for each requirement. With our resources and your dedication, you'll be well on your way to earning your instrument rating and expanding your flying horizons.

## Required Materials

- Gold Seal Instrument Pilot Ground School.



## Recommended Materials

While the resources listed below are not mandatory for course completion, we highly recommend a selection of supplementary materials to enrich your learning experience. Many of these resources are available at no cost from the FAA, offering an invaluable supplement to your studies. Within each module and lesson, you will find a curated list of additional resources that we suggest bolstering your understanding and depth of knowledge in various topics. These materials serve as an excellent complement to the core content of our course, providing a broader perspective and deeper insight into the fascinating world of aviation.

- Flight Computer (Manual E6B or Electronic)
- Federal Aviation Regulations (officially, the Code of Federal Regulations, i.e. 14 CFRs)
- Aeronautical Information Manual (AIM)
- Aeronautical Chart Users' Guide
- Instrument Flying Handbook (IFH), FAA-H-8083-15 (and Errata Sheet, Addendum, and Addendum B)
- Instrument Procedure Handbook (IPH), FAA-H-8083-16
- Aviation Weather Handbook (AWH), FAA-H-8083-28
- Pilot's Handbook of Aeronautical Knowledge (PHAK), FAA-H-8083-25
- Risk Management Handbook (RMH), FAA-H-8083-2
- Instrument Rating - Airplane Airman Certification Standards (ACS), FAA-S-ACS-8
- Airman Knowledge Testing Supplement (AKTS) for Instrument Rating, FAA-CT-8080-3

Current FAA documents and handbook versions should be used for the most up-to-date information.

## Instrument Pilot Ground Training Modules

This Gold Seal Instrument Pilot Ground School Course syllabus is aligned with the standards set forth in 14 CFR 141, Appendix L - Pilot Ground School Course. Presented below is a recommended timeline, detailing estimated completion times for each module, to meet the aeronautical knowledge requirements specified in 14 CFR 141 Appendix C - Instrument Rating Course. This schedule is provided as a guideline to assist both learners and instructors in planning and pacing the course effectively. Please note that these time estimates are not mandatory, but suggested durations. Ground instruction time encompasses active engagement with the Gold Seal Ground School course, including online study of the lessons, quiz participation and analysis, and review.

Module	Section 1	Time* (Hours)
1	Introduction	1.4
2	Systems and Instruments	3.4
3	Attitude Instrument Flying	1.9
4	Flight Planning	1.0
	<b>Stage One Check</b>	0.5
Module	Section 2	
5	VOR and DME	2.0
6	GPS, HSI, and TAA	2.6
	<b>Stage Two Check</b>	0.5
Module	Section 3	
7	Airport Signs, Markings, and Safety	2.5
8	ATC Clearances and Compliance	1.8
	<b>Stage Three Check</b>	0.5
Module	Section 4	
9	Enroute Environment	3.9
	<b>Stage Four Check</b>	0.5
Module	Section 5	
10	Types of Instrument Approaches	2.6
11	Minimums and Missed Approach Procedures	2.0
12	Flying the Approach	2.5
	<b>Stage Five Check</b>	0.5
Module	Section 6	
13	Weather Theory	2.7
14	Weather Hazards	2.6
15	Weather Reports and Forecasts	3.0
	<b>Stage Six Check</b>	0.5
Module	Section 7	
16	Physiology, ADM, and Judgment	1.7
	<b>Stage Seven Check</b>	0.5
Module	Section 8	
17	Regulations	3.2
	<b>Stage Eight Check</b>	0.5
	<b>End-of-Course Test</b>	2.0
<b>Total Time (hours)</b>		<b>46.8</b>

\*Note: The total time indicated is an estimated duration based on the course content and assessments. While under Part 141, a minimum of 30.0 hours of ground training is mandated, training under Part 61 does not specify a minimum time requirement. Many learners may find that they require more time than the estimated duration to fully grasp the concepts and complete their training effectively.

## Required Aeronautical Knowledge Training - Instrument Pilot

List of the aeronautical knowledge subjects required for ground training and where each is located within this syllabus. In accordance with the requirements of 14 CFR 141 Appendix C and Appendix L.

3.(b)	Subject	Course		
		Section	Module	Lesson(s)
1	Applicable Federal Aviation Regulations for IFR flight operations	8	17	Pilot Regulations Plane Regulations Planning Regulations
2	Appropriate information in the "Aeronautical Information Manual"	8	17	Aeronautical Information Manual
3	Air traffic control system and procedures for instrument flight operations	3	8	Departure Clearances Instrument Departures Instrument Arrivals ATC Compliance
4	IFR navigation and approaches by use of navigation systems	2	5	VOR Operations - Part 1 VOR Operations - Part 2 VOR Operations - Part 3 DME - Distance Measuring Equipment
		2	6	GPS Overview GPS Navigation - Part 1 GPS Navigation - Part 2
		5	10	Precision, Non-Precision, and APV The Runway Localizer ILS - Instrument Landing System
5	Use of IFR en route and instrument approach procedure charts	4	9	Enroute Charts - Part 1 Enroute Charts - Part 2
		5	10	Approach Charts - Overview
		5	11	Approach Minimums - Part 1 Approach Minimums - Part 2 Missed Approaches
		5	12	Published Course Reversals
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	6	15	Aviation Weather Charts Aviation Weather Reports
7	Safe and efficient operation of aircraft under instrument flight rules and conditions	7	16	Safe and Efficient Operation of Aircraft

8	Recognition of critical weather situations and windshear avoidance	6	13	Weather Theory Part 1 Weather Theory Part 2 Atmospheric Stability
		6	14	Critical Weather Situations Windshear Recognition and Avoidance Inflight Icing - Part 1 Inflight Icing - Part 2
9	Aeronautical decision making and judgment	7	16	Aeronautical Decision Making and Judgment
10	Crew resource management, to include crew communication and coordination	7	16	CRM, Crew Communication, and Coordination

# Stage 1 - IFR Fundamentals

## Objective

In Stage One, learners will embark on their journey into instrument flight, acquiring essential knowledge and skills fundamental to IFR operations. They will be introduced to the intricacies of instrument flying, beginning with a comprehensive understanding of aircraft systems and instruments. This foundation paves the way for mastering attitude instrument flying, which covers the techniques and principles of controlling an aircraft solely based on instrument indications. The stage also focuses on flight planning, equipping learners with the skills to plan and execute IFR flights. This stage is crafted to lay a robust groundwork for learners, enabling them to develop into safe, proficient, and knowledgeable instrument-rated pilots.

Module	Title
1	Introduction
2	Systems and Instruments
3	Attitude Instrument Flying
4	Flight Planning
	<b>Stage One Check</b>

## Completion Standards

Stage completion is achieved when the learner fulfills the objectives of each module, exhibiting proficiency in understanding and applying the associated processes, exercises, and activities. Successful completion of the stage is demonstrated by the learner's ability to achieve a minimum score of 90% on the stage check assessment and complete a comprehensive review of any topics where deficiencies are noted.

# Module 1 - Introduction

## Objective

The objective of this comprehensive module is to equip learners pursuing an FAA instrument rating with a foundational understanding of key aviation concepts, tailored to the complexities of instrument flying. The module begins with an introduction to the structure and expectations of the instrument rating training program. Learners will then explore the national airspace system, with a specific focus on aspects crucial to instrument flight, such as IFR operations and airspace classifications. The module also covers the requirements for obtaining an instrument rating. In addition, learners will study the currency requirements pertinent to instrument-rated pilots, emphasizing the need for maintaining proficiency in instrument flight conditions. Finally, the module addresses aircraft requirements with a focus on required instrument equipment, and the documentation necessary for IFR operations. This targeted approach aims to prepare learners comprehensively for the challenges and responsibilities of flying under IFR, ensuring a high level of safety and proficiency.

## Gold Seal Instrument Pilot Ground School: Section 1 - IFR Fundamentals

Required Lessons	Additional Resources
<input type="checkbox"/> Introduction - Watch this first!	<input type="checkbox"/> FAA Safety.gov <input type="checkbox"/> Instrument Pilot ACS
<input type="checkbox"/> National Airspace System	<input type="checkbox"/> National Airspace System (FAA IFH) <input type="checkbox"/> AIM - Chapter 3. Airspace <input type="checkbox"/> PART 71- Designation of Airspace Areas; Air Traffic Service Routes; and Reporting Points
<input type="checkbox"/> Pilot Requirements	<input type="checkbox"/> 14 CFR 61.65 Instrument Rating Requirements <input type="checkbox"/> Instrument Rating Requirements (FAA IFH) <input type="checkbox"/> Part 141 Instrument Training Requirements <input type="checkbox"/> Instrument Pilot ACS
<input type="checkbox"/> Currency Requirements	<input type="checkbox"/> 14 CFR 61.57
<input type="checkbox"/> Aircraft Requirements	<input type="checkbox"/> 14 CFR 91.205 Instrument and equipment requirements. <input type="checkbox"/> 14 CFR 91.203 Civil aircraft: Certifications required. <input type="checkbox"/> 14 CFR 91.413 ATC transponder tests and inspections. <input type="checkbox"/> 14 CFR 91.171 VOR equipment check for IFR operations. <input type="checkbox"/> 14 CFR 91.411 Altimeter system and altitude reporting equipment tests and inspections. <input type="checkbox"/> 14 CFR 91.409 Required Aircraft Inspections.

## Completion Standards

This module is successfully completed when the learner has engaged with and understood all topics presented within the module lessons. Lesson quizzes must be completed to identify areas needing further study. The learner is expected to review any incorrect responses to ensure a thorough grasp of the content before progressing.

## Training Log

Study Date(s)

Completion Date

Learner Signature

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## Module 2 - Systems and Instruments

### Objective

In this module, learners will gain an in-depth understanding of the various instruments essential for instrument flight. The module begins with a detailed study of the magnetic compass, including its principles, limitations, and errors. Learners will then explore gyroscopic instruments, their operation, types, and significance in maintaining aircraft attitude and direction under instrument flight rules. The module also comprehensively covers pitot-static instruments, focusing on their functions, the impact of system failures, and corrective actions. A critical part of the module is understanding different altitude types and their relevance in IFR operations. This is followed by an exploration of primary and supporting instruments, where learners will be able to distinguish between these instruments and understand their integrated use for flight control. Lastly, the module will guide learners through the essential steps of instrument preflight checks, emphasizing the importance of ensuring all instruments are functional and properly set for safe IFR operations. This module equips learners with the necessary knowledge to interpret and utilize aircraft instruments effectively, a crucial aspect of flying under instrument flight rules.

### Gold Seal Instrument Pilot Ground School: Section 1 - IFR Fundamentals

Required Lessons	Additional Resources
<input type="checkbox"/> Magnetic Compass	<input type="checkbox"/> IFH Chapter 5 - Magnetic Compass
<input type="checkbox"/> Gyroscopic Instruments	<input type="checkbox"/> Gyroscopic Precession - Kitchen Table Science! <input type="checkbox"/> Gyroscopic Instruments (FAA IFH)
<input type="checkbox"/> Pitot-Static Instruments	<input type="checkbox"/> IFH Chapter 5 - Pitot/Static Instruments
<input type="checkbox"/> Altitude Types	<input type="checkbox"/> PHAK Chapter 10 - Altimeter
<input type="checkbox"/> Primary & Supporting Instruments	<input type="checkbox"/> IFH Chapter 6 - Primary and Supporting Method
<input type="checkbox"/> Instrument Preflight	<input type="checkbox"/> IFH Chapter 5 - Required System Inspections <input type="checkbox"/> AC 91-46, Gyroscopic Instruments

### Completion Standards

This module is successfully completed when the learner has engaged with and understood all topics presented within the module lessons. Lesson quizzes must be completed to identify areas needing further study. The learner is expected to review any incorrect responses to ensure a thorough grasp of the content before progressing.

### Training Log

Study Date(s)

Completion Date

Learner Signature

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## Module 3 - Attitude Instrument Flying

### Objective

In this module, learners will develop a solid foundation in the three fundamental skills of instrument flying: instrument interpretation, aircraft control, and cross-checking. The module will introduce basic attitude flying, where learners will understand how to maintain aircraft control solely through instrument readings, emphasizing the importance of attitude, pitch, and power settings. Following this, the focus will shift to unusual attitude recoveries, teaching learners how to recognize and correct both nose-high and nose-low attitudes, as well as banked attitudes, using instrument indications. This module is designed to equip learners with critical skills for maintaining aircraft control in various flight attitudes, ensuring they can respond effectively to unexpected situations during instrument flight.

### Gold Seal Instrument Pilot Ground School: Section 1 - IFR Fundamentals

Required Lessons	Additional Resources
<input type="checkbox"/> Three Fundamental Skills	<input type="checkbox"/> IFH Chapter 8 - Instrument Flight
<input type="checkbox"/> Basic Attitude Flying	<input type="checkbox"/> IFH Chapter 6 - Control and Performance Method
<input type="checkbox"/> Unusual Attitude Recoveries	<input type="checkbox"/> Unusual Attitudes (FAA IFH)

### Completion Standards

This module is successfully completed when the learner has engaged with and understood all topics presented within the module lessons. Lesson quizzes must be completed to identify areas needing further study. The learner is expected to review any incorrect responses to ensure a thorough grasp of the content before progressing.

### Training Log

Study Date(s)

Completion Date

Learner Signature

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## Module 4 - Flight Planning

### Objective

The objective of this module is to provide learners with comprehensive knowledge and practical skills in preflight planning for IFR operations. Learners will first understand the importance and components of thorough preflight planning, including weather analysis, route selection, alternate planning, and regulatory requirements. The module then focuses on the IFR flight planning form, guiding learners through each section of the form to ensure a complete and accurate flight plan. Emphasis will be placed on the integration of aeronautical information, fuel calculations, and time estimations for a safe and efficient IFR flight. This module aims to equip learners with the ability to efficiently plan and execute IFR flights, a critical skill for any instrument-rated pilot.

### Gold Seal Instrument Pilot Ground School: Section 1 - IFR Fundamentals

Required Lessons	Additional Resources
<input type="checkbox"/> Preflight Planning	<input type="checkbox"/> IFH Chapter 10 - Conducting an IFR Flight
<input type="checkbox"/> IFR Flight Planning Form	<input type="checkbox"/> ICAO Flight Plan Form Instructions
	<input type="checkbox"/> ICAO Flight Plan Form

### Completion Standards

This module is successfully completed when the learner has engaged with and understood all topics presented within the module lessons. Lesson quizzes must be completed to identify areas needing further study. The learner is expected to review any incorrect responses to ensure a thorough grasp of the content before progressing.

### Training Log

Study Date(s)

Completion Date

Learner Signature

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# Stage One Check

## Objective

The objective of the stage one check is to thoroughly assess the learner's understanding and proficiency in the foundational aspects of aviation covered in this initial phase of training. The comprehensive stage check will encompass topics from each of the modules in this stage. Prior to undertaking the stage check, the learner must have completed all associated quizzes within the stage. Successful completion of this stage check is crucial in demonstrating the learner's grasp of essential aeronautical knowledge for this stage of their training.

## Gold Seal Instrument Pilot Ground School: Stage One Check

## Completion Standards

The stage check is successfully completed when the learner demonstrates an understanding of all material covered in stage one by achieving a minimum passing score of 90% on the comprehensive assessment. Any areas of deficiency identified in the stage check must be thoroughly reviewed and understood by the learner to ensure a solid foundation of knowledge for this stage of training.

## Training Log

Study Date(s)

Completion Date

Learner Signature

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## Stage 2 - Navigation Systems

### Objective

Stage Two advances learner's comprehension of navigation systems, focusing on the use and interpretation of VOR (VHF Omnidirectional Range), DME (Distance Measuring Equipment), and GPS (Global Positioning System). Learners will explore the functionalities and operational procedures of these navigational aids, understanding how to integrate them into precise flight planning and execution. Additionally, this stage covers the application of the Horizontal Situation Indicator (HSI) and the complexities of flying Technically Advanced Airplanes (TAA). The objective of this stage is to equip learners with the skills to confidently navigate using these advanced systems, a crucial competency for modern instrument-rated pilots.

Module	Title
5	VOR and DME
6	GPS, HSI, and TAA
	<b>Stage Two Check</b>

### Completion Standards

Stage completion is achieved when the learner fulfills the objectives of each module, exhibiting proficiency in understanding and applying the associated processes, exercises, and activities. Successful completion of the stage is demonstrated by the learner's ability to achieve a minimum score of 90% on the stage check assessment and complete a comprehensive review of any topics where deficiencies are noted.

## Module 5 - VOR and DME

### Objective

This module on VOR and DME operations is segmented into three parts covering the VOR, each designed to build upon the previous, and DME, providing learners with a thorough understanding of these important navigation systems. In Part 1 of VOR Operations, learners will be introduced to the basics of VOR technology, including its principles, components, and basic use in navigation. Part 2 will advance into more complex VOR operations, focusing on interpreting VOR signals, identifying aircraft positions relative to VOR stations, and using VOR for enroute navigation. Part 3 will explore deeper into advanced VOR techniques and system limitation, such as reverse sensing, ambiguity, the cone of confusion, and determining VOR accuracy. The module then covers DME, exploring its operation, integration with VOR for distance measurement, and practical applications in flight planning and navigation. By the end of this module, learners will have developed the knowledge and skills to effectively use VOR and DME for accurate and reliable navigation under instrument flight rules.

### Gold Seal Instrument Pilot Ground School: Section 2 - Navigation Systems

Required Lessons	Additional Resources
<input type="checkbox"/> VOR Operations - Part 1	<input type="checkbox"/> VOR Systems (IFH)
<input type="checkbox"/> VOR Operations - Part 2	
<input type="checkbox"/> VOR Operations - Part 3	
<input type="checkbox"/> DME - Distance Measuring Equipment	<input type="checkbox"/> DME (Instrument Flying Handbook)

### Completion Standards

This module is successfully completed when the learner has engaged with and understood all topics presented within the module lessons. Lesson quizzes must be completed to identify areas needing further study. The learner is expected to review any incorrect responses to ensure a thorough grasp of the content before progressing.

### Training Log

Study Date(s)

Completion Date

Learner Signature

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## Module 6 - GPS, HSI, and TAA

### Objective

This module's objective is to foster a higher-order understanding and application of GPS navigation and its integration with modern aviation technology, including the HSI and TAA. It starts with an overview of GPS, covering the basic principles and functionalities of GPS in aviation. Learners will analyze and comprehend the fundamental concepts of GPS technology in aviation, gaining a foundational understanding of its role and functionalities. Further, learners will synthesize information by examining the HSI, interpreting its utility in concert with GPS for improved flight situational awareness. The culmination of this learning process involves evaluating and applying the knowledge of GPS in the context of TAA, where learners assess and engage with the unique operational features and safety protocols of these advanced systems. By the end of this module, learners will have gained proficiency in GPS navigation and an understanding of its critical role in modern avionic systems.

### Gold Seal Instrument Pilot Ground School: Section 2 - Navigation Systems

Required Lessons	Additional Resources
<input type="checkbox"/> GPS Overview	<input type="checkbox"/> IFH Chapter 9 - Global Positioning System
<input type="checkbox"/> GPS Navigation - Part 1	
<input type="checkbox"/> GPS Navigation - Part 2	
<input type="checkbox"/> HSI - The Horizontal Situation Indicator	<input type="checkbox"/> IFH Chapter 5 - Horizontal Situation Indicator
<input type="checkbox"/> TAA - Technically Advanced Airplanes	<input type="checkbox"/> PHAK Chapter 8 - Electronic Flight Display

### Completion Standards

This module is successfully completed when the learner has engaged with and understood all topics presented within the module lessons. Lesson quizzes must be completed to identify areas needing further study. The learner is expected to review any incorrect responses to ensure a thorough grasp of the content before progressing.

### Training Log

Study Date(s)

Completion Date

Learner Signature

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# Stage Two Check

## Objective

The objective of the stage two check is to evaluate the learner's comprehensive understanding and practical application of the concepts and skills introduced in this stage. Prior to undertaking the stage check, the learner must have completed all associated quizzes within the stage. Successful completion of this stage check ensures the learner is well-prepared and competent in both theoretical knowledge and practical skills necessary for utilizing navigational aids..

## Gold Seal Instrument Pilot Ground School: Stage Two Check

### Completion Standards

The stage check is successfully completed when the learner demonstrates an understanding of all material covered in stage two by achieving a minimum passing score of 90% on the comprehensive assessment. Any areas of deficiency identified in the stage check must be thoroughly reviewed and understood by the learner to ensure a solid foundation of knowledge for this stage of training.

### Training Log

Study Date(s)

Completion Date

Learner Signature

\_\_\_\_\_



## Stage 3 - Terminal Environment

### Objective

Stage Three is designed to deepen the learner's understanding of ground operations and air traffic control interactions, essential components of safe instrument flying. This stage emphasizes proficiency in interpreting airport signs and markings, enhancing learner's awareness and navigation skills on the ground for improved safety. Alongside this, learners will engage in a detailed study of air traffic control (ATC) clearances and compliance, focusing on the nuances of receiving, understanding, and adhering to ATC instructions and procedures. The aim of this stage is to cultivate meticulous compliance and effective communication skills, ensuring learners can operate safely and efficiently in complex airport environments and under ATC guidance.

### Module Title

7	Airport Signs, Markings, and Safety
8	ATC Clearances and Compliance
	<b>Stage Three Check</b>

### Completion Standards

Stage completion is achieved when the learner fulfills the objectives of each module, exhibiting proficiency in understanding and applying the associated processes, exercises, and activities. Successful completion of the stage is demonstrated by the learner's ability to achieve a minimum score of 90% on the stage check assessment and complete a comprehensive review of any topics where deficiencies are noted.

## Module 7 - Airport Signs, Markings, and Safety

### Objective

This module is designed to enhance learner's understanding and practical skills in airport navigation and safety. It begins with an in-depth analysis of airport diagrams, teaching learners to interpret and navigate complex airport layouts effectively. The focus then shifts to runway signs and markings, where learners will learn to recognize and comprehend their meanings for safe airport operations. An exploration of runway lighting systems will equip learners with the knowledge to identify different lighting configurations, crucial for operations in low visibility conditions. The module also addresses hydroplaning, providing insights into its causes and strategies for prevention, crucial for maintaining control on wet runways. Lastly, learners will gain a deeper understanding of wake turbulence avoidance, learning to identify risks and apply effective strategies to mitigate wake turbulence during critical phases of flight. This module aims to provide comprehensive knowledge and practical application in key areas of airport operations and safety.

### Gold Seal Instrument Pilot Ground School: Section 3 - Terminal Environment

Required Lessons	Additional Resources
<input type="checkbox"/> Airport Diagrams <input type="checkbox"/> Runway Signs and Markings	<input type="checkbox"/> Airport Diagrams Used in FAA Instruments Exam <input type="checkbox"/> Airport Signs and Markings Reference Card <input type="checkbox"/> FAA PHAK 14 - Airport Operations (Signs & Markings) p.5
<input type="checkbox"/> Runway Lighting Systems <input type="checkbox"/> Hydroplaning	<input type="checkbox"/> Approach Lighting Systems - Legend <input type="checkbox"/> Hydroplaning (FAA AFH)
<input type="checkbox"/> Wake Turbulence Avoidance	<input type="checkbox"/> Wake Turbulence (AIM) <input type="checkbox"/> FAA PHAK 14 - Airport Operations (Wake Turbulence) p.26

### Completion Standards

This module is successfully completed when the learner has engaged with and understood all topics presented within the module lessons. Lesson quizzes must be completed to identify areas needing further study. The learner is expected to review any incorrect responses to ensure a thorough grasp of the content before progressing.

### Training Log

Study Date(s)

Completion Date

Learner Signature

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## Module 8 - ATC Clearances and Compliance

### Objective

This module provides learners with essential knowledge for effectively managing departures and arrivals under IFR, as well as ensuring compliance with ATC directives. The module begins with departure clearances, where learners will understand the process of obtaining and interpreting clearance for IFR departures, emphasizing the importance of precise communication and adherence to specified routes and altitudes. Following this, the focus shifts to instrument departures, teaching learners the procedures and navigation techniques for executing standard and non-standard instrument departure procedures. In the section on instrument arrivals, learners will explore arrival procedures, including Standard Terminal Arrival Routes (STARs) and the flight segments transitioning into approaches, gaining proficiency in executing these procedures with different types of ATC clearances. The final part of the module, ATC compliance, is designed to reinforce the importance of accurate and timely communication with ATC, and the adherence to ATC instructions and procedures for maintaining safe and efficient flight operations. This module aims to equip learners with the necessary competencies for managing critical phases of flight in instrument meteorological conditions, ensuring safety and regulatory compliance.

### Gold Seal Instrument Pilot Ground School: Section 3 - Terminal Environment

Required Lessons	Additional Resources
<input type="checkbox"/> Departure Clearances <input type="checkbox"/> Instrument Departures	<input type="checkbox"/> IFH Chapter 2 - Communication Facilities <input type="checkbox"/> Instrument Takeoff Minimums Used in FAA Exam <input type="checkbox"/> Instrument Departures Used in FAA Exams
<input type="checkbox"/> Instrument Arrivals <input type="checkbox"/> ATC Compliance	<input type="checkbox"/> Instrument Arrivals Used in FAA Exams <input type="checkbox"/> 14 CFR 91.123 Compliance with ATC clearances and instructions.

### Completion Standards

This module is successfully completed when the learner has engaged with and understood all topics presented within the module lessons. Lesson quizzes must be completed to identify areas needing further study. The learner is expected to review any incorrect responses to ensure a thorough grasp of the content before progressing.

### Training Log

Study Date(s)

Completion Date

Learner Signature

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# Stage Three Check

## Objective

The objective of the stage three check is to evaluate the learner's comprehensive understanding and practical application of the concepts and skills introduced in this stage. Prior to undertaking the stage check, the learner must have completed all associated quizzes within the stage. Successful completion of this stage check confirms that the learner is proficient in navigating airport environments and adhering to ATC directives, which are critical for safe and efficient operations within terminal areas.

## Gold Seal Instrument Pilot Ground School: Stage Three Check

## Completion Standards

The stage check is successfully completed when the learner demonstrates an understanding of all material covered in stage three by achieving a minimum passing score of 90% on the comprehensive assessment. Any areas of deficiency identified in the stage check must be thoroughly reviewed and understood by the learner to ensure a solid foundation of knowledge for this stage of training.

## Training Log

Study Date(s)

Completion Date

Learner Signature

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## Stage 4 - Enroute Environment

### Objective

Stage Four immerses learners in the complexities of the enroute environment, a critical aspect of instrument flight. This stage is designed to provide an extensive understanding of the various factors and considerations that come into play during the enroute phase of IFR flights. The focus will be on developing the ability to navigate safely and efficiently through different airspace classes, understand ATC routing and altitude assignments, and manage in-flight adjustments. The goal of this stage is to equip learners with the skills and knowledge necessary to confidently manage the enroute segment of instrument flights, ensuring a seamless transition from departure to approach phases.

### Module Title

Module	Title
9	Enroute Environment
	<b>Stage Four Check</b>

### Completion Standards

Stage completion is achieved when the learner fulfills the objectives of each module, exhibiting proficiency in understanding and applying the associated processes, exercises, and activities. Successful completion of the stage is demonstrated by the learner's ability to achieve a minimum score of 90% on the stage check assessment and complete a comprehensive review of any topics where deficiencies are noted.

# Module 9 - Enroute Environment

## Objective

This module is designed to equip learners with a comprehensive understanding and proficiency in key aspects of enroute navigation and introduce emergency procedures in instrument flight. In enroute charts - Part 1 and Part 2, learners will understand how to read and interpret associated charts, covering everything from symbols and airspace structure to navigation aids and route planning. For holding procedures - Part 1 and Part 2, the focus will be on mastering the techniques and rules for standard and non-standard holding patterns, including entry methods, timing considerations, and required ATC communications. The module also teaches learners how to utilize ATC clearances for cruise, VFR on top, and VFR over the top for efficiency and flexibility in flight planning. Lastly, the module addresses the critical procedures for lost communications, ensuring learners are prepared to maintain safety and navigate effectively in the event of communication failure. By the end of this module, learners will have gained a thorough understanding and skill set for successful navigation and contingency management in IFR conditions.

## Gold Seal Instrument Pilot Ground School: Section 3 - Skill Building

Required Lessons	Additional Resources
<input type="checkbox"/> Enroute Charts - Part 1	<input type="checkbox"/> Enroute Charts (FAA IFH)
<input type="checkbox"/> Enroute Charts - Part 2	<input type="checkbox"/> Enroute Charts (FAA IFH) <input type="checkbox"/> Enroute Charts Used in FAA Exam
<input type="checkbox"/> Holding Procedures - Part 1	<input type="checkbox"/> Navigating Holding Patterns <input type="checkbox"/> Holding Procedures (FAA IFH)
<input type="checkbox"/> Holding Procedures - Part 2	<input type="checkbox"/> Holding Procedures (FAA IFH)
<input type="checkbox"/> Cruise, VFR on Top	<input type="checkbox"/> IFH Chapter 10 - VFR-On-Top
<input type="checkbox"/> Lost Communications	<input type="checkbox"/> Communication Failure (FAA IFH)

## Completion Standards

This module is successfully completed when the learner has engaged with and understood all topics presented within the module lessons. Lesson quizzes must be completed to identify areas needing further study. The learner is expected to review any incorrect responses to ensure a thorough grasp of the content before progressing.

## Training Log

Study Date(s)

Completion Date

Learner Signature

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# Stage Four Check

## Objective

The objective of the stage four check is to evaluate the learner's comprehensive understanding and practical application of the concepts and skills introduced in this stage. Prior to undertaking the stage check, the learner must have completed all associated quizzes within the stage. Successful completion of this stage check confirms the learner's proficiency in utilizing enroute charts, executing holding procedures, managing cruise operations, and handling emergencies such as lost communications.

## Gold Seal Instrument Pilot Ground School: Stage Four Check

## Completion Standards

The stage check is successfully completed when the learner demonstrates an understanding of all material covered in stage four by achieving a minimum passing score of 90% on the comprehensive assessment. Any areas of deficiency identified in the stage check must be thoroughly reviewed and understood by the learner to ensure a solid foundation of knowledge for this stage of training.

## Training Log

Study Date(s)

Completion Date

Learner Signature

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## Stage 5 - Instrument Approach Procedures

### Objective

In Stage Five, learners will integrate the critical components of instrument approach procedures. This stage is designed to provide learners with a comprehensive understanding of the types of instrument approaches. Learners will gain insights into the distinct features and requirements of each approach type, offer practical insights into the execution of various instrument approaches, and the importance of understanding and adhering to approach minimums and the procedures for executing a missed approach when necessary. The aim of this stage is to equip learners with the knowledge and skills required to conduct instrument approaches safely and efficiently under various conditions, enhancing their proficiency as instrument-rated pilots.

Module	Title
10	Types of Instrument Approaches
11	Minimums and Missed Approach Procedures
12	Flying the Approach
	<b>Stage Five Check</b>

### Completion Standards

Stage completion is achieved when the learner fulfills the objectives of each module, exhibiting proficiency in understanding and applying the associated processes, exercises, and activities. Successful completion of the stage is demonstrated by the learner's ability to achieve a minimum score of 90% on the stage check assessment and complete a comprehensive review of any topics where deficiencies are noted.

# Module 10 - Types of Instrument Approaches

## Objective

In this module, learners will gain an in-depth understanding of various instrument approach procedures, crucial for precision and safety in instrument flight. The module begins by differentiating between precision approaches, non-precision approaches, and approaches with vertical guidance (APV), enabling learners to comprehend the characteristics, requirements, and operational procedures of each type. In the runway localizer lesson, learners will explore its role in providing lateral guidance for approaches. A key component of the module is the instrument landing system (ILS), where learners will master its components, functionality, and the techniques for executing an ILS approach. The module also covers visual and contact approaches, teaching learners to transition from instrument to visual flying in appropriate conditions. The module then addresses other types of approaches, including airport surveillance radar (ASR), precision approach radar (PAR), no-gyro, and precision runway monitor (PRM) approaches, enhancing learner's versatility and adaptability in various flight scenarios. Finally, the module covers an overview of approach charts, where learners will acquire the skills to interpret and utilize these charts effectively, including understanding symbology, minimums, and navigational information. This module aims to equip learners with the knowledge and skills to execute a range of instrument approach procedures confidently and accurately, a critical aspect of IFR operations.

## Gold Seal Instrument Pilot Ground School: Section 5 - Approach Procedures

Required Lessons	Additional Resources
<input type="checkbox"/> Precision, Non-Precision, and APV	<input type="checkbox"/> IFH Chapter 10 - Approaches
<input type="checkbox"/> The Runway Localizer	<input type="checkbox"/> IFH Chapter 9 - Localizer
<input type="checkbox"/> ILS - Instrument Landing System	<input type="checkbox"/> IFH Chapter 9 - Localizer <input type="checkbox"/> ILS (IFH)
<input type="checkbox"/> Visual and Contact Approaches	<input type="checkbox"/> Visual and Contact Approaches (FAA IFH)
<input type="checkbox"/> Other Types of Approaches	<input type="checkbox"/> IPH Chapter 4 - Precision Runway Monitoring <input type="checkbox"/> IPH Chapter 4 - Radar Approaches, PAR, ASR
<input type="checkbox"/> Approach Charts - Overview	<input type="checkbox"/> Approach Charts Used in Quiz

## Completion Standards

This module is successfully completed when the learner has engaged with and understood all topics presented within the module lessons. Lesson quizzes must be completed to identify areas needing further study. The learner is expected to review any incorrect responses to ensure a thorough grasp of the content before progressing.

## Training Log

Study Date(s)

Completion Date

Learner Signature

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# Module 11 - Minimums and Missed Approach Procedures

## Objective

This module enhances learner's understanding and application of critical concepts in instrument approach procedures, focusing on approach minimums and missed approaches. Learners will first explore approach minimums, gaining insight into their determination, significance, and how to apply them for safe decision-making during instrument approaches. This includes understanding visibility and altitude requirements for different types of approaches. The module then shifts to missed approaches, where learners will learn the standard procedures, reasons for executing a missed approach, and the importance of immediate action and clear communication. Through this module, learners will develop the skills to assess approach feasibility, execute missed approach procedures confidently, and maintain safety in adverse conditions, essential competencies for IFR operations.

## Gold Seal Instrument Pilot Ground School: Section 5 - Approach Procedures

Required Lessons	Additional Resources
<input type="checkbox"/> Approach Minimums - Part 1	<input type="checkbox"/> IPH Chapter 4 - MDA, DA, and DH
<input type="checkbox"/> Approach Minimums - Part 2	<input type="checkbox"/> Approach Charts Used in Quiz
<input type="checkbox"/> Missed Approaches	<input type="checkbox"/> Approach Charts Used in Quiz <input type="checkbox"/> Missed Approaches (FAA IPH)

## Completion Standards

This module is successfully completed when the learner has engaged with and understood all topics presented within the module lessons. Lesson quizzes must be completed to identify areas needing further study. The learner is expected to review any incorrect responses to ensure a thorough grasp of the content before progressing.

## Training Log

Study Date(s)

Completion Date

Learner Signature

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## Module 12 - Flying the Approach

### Objective

This module provides learners with a comprehensive understanding of instrument approach procedures, emphasizing the practical application of approach charts and related concepts in instrument flight. The module begins with published course reversals, teaching learners how to identify and execute procedure turn maneuvers during approaches and the required communications. The lesson on approach clearances focuses on understanding and complying with ATC instructions during approach phases, emphasizing clear communication and situational awareness. Learners will also explore approach alternates, gaining knowledge on when an alternate airport is required, and how to choose an alternate, a critical skill in flight planning and safety management. Finally, the module addresses approach briefings, guiding learners to conduct thorough and systematic briefings, ensuring a comprehensive understanding of the approach procedure and preparedness for various scenarios. By the end of this module, learners will have developed the necessary competencies to effectively manage the approach phases in IFR flight, contributing to overall flight safety and efficiency.

### Gold Seal Instrument Pilot Ground School: Section 5 - Approach Procedures

Required Lessons	Additional Resources
<input type="checkbox"/> Published Course Reversals	<input type="checkbox"/> IPH Chapter 4 - Course Reversal
<input type="checkbox"/> Approach Clearances	<input type="checkbox"/> IPH Chapter 4 - Approach Clearance
<input type="checkbox"/> Approach Alternates	<input type="checkbox"/> Alternate Airport Alternatives - IFR Magazine <input type="checkbox"/> 14 CFR 91.169 IFR Alternates
<input type="checkbox"/> Approach Briefings	<input type="checkbox"/> IPH Chapter 4 - Example Approach Briefing

### Completion Standards

This module is successfully completed when the learner has engaged with and understood all topics presented within the module lessons. Lesson quizzes must be completed to identify areas needing further study. The learner is expected to review any incorrect responses to ensure a thorough grasp of the content before progressing.

### Training Log

Study Date(s)

Completion Date

Learner Signature

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# Stage Five Check

## Objective

The objective of the stage five check is to evaluate the learner's comprehensive understanding and practical application of the concepts and skills introduced in this stage. Prior to undertaking the stage check, the learner must have completed all associated quizzes within the stage. Successful completion of this stage check verifies that the learner is adept at navigating various instrument approaches, effectively executing approach maneuvers, and handling procedures for minimums and missed approaches.

## Gold Seal Instrument Pilot Ground School: Stage Five Check

## Completion Standards

The stage check is successfully completed when the learner demonstrates an understanding of all material covered in stage five by achieving a minimum passing score of 90% on the comprehensive assessment. Any areas of deficiency identified in the stage check must be thoroughly reviewed and understood by the learner to ensure a solid foundation of knowledge for this stage of training.

## Training Log

Study Date(s)

Completion Date

Learner Signature

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## Stage 6 - Aviation Weather

### Objective

In Stage Six, learners are immersed in the critical aspects of aviation meteorology, essential for safe and proficient instrument flying. Learners will develop a comprehensive understanding of atmospheric dynamics, weather systems, and how they impact flight operations. Learners will be able to identify and mitigate risks associated with adverse weather conditions such as turbulence, icing, and thunderstorms. Finally, learners will know how to accurately interpret and utilize weather reports and forecasts for effective flight planning and decision-making. The goal of this stage is to equip learners with a robust meteorological knowledge base and practical skills, enabling them to anticipate and respond to weather challenges in instrument flight.

Module	Title
13	Weather Theory
14	Weather Hazards
15	Weather Reports and Forecasts
	<b>Stage Six Check</b>

### Completion Standards

Stage completion is achieved when the learner fulfills the objectives of each module, exhibiting proficiency in understanding and applying the associated processes, exercises, and activities. Successful completion of the stage is demonstrated by the learner's ability to achieve a minimum score of 90% on the stage check assessment and complete a comprehensive review of any topics where deficiencies are noted.

# Module 13 - Weather Theory

## Objective

In this module, learners will gain a comprehensive understanding of weather theory and its impact on aviation. In Weather Theory Part 1, learners will explore the fundamental concepts of meteorology, including the structure of the atmosphere, weather systems, and the factors influencing weather patterns. Weather Theory Part 2 covers weather phenomena relevant to aviation, such as factors that affect wind, moisture, and types of fog. Finally, in the atmospheric stability lesson, learners will understand the characteristics of stable and unstable air, determining stability, and its implications for flight conditions including turbulence, cloud development, and weather changes. Through this module, learners will gain essential meteorological knowledge and the ability to apply this understanding in assessing weather conditions for safe flight planning and decision-making.

## Gold Seal Instrument Pilot Ground School: Section 6 - Aviation Weather

Required Lessons	Additional Resources
<input type="checkbox"/> Weather Theory Part 1	<input type="checkbox"/> Aviation Weather Handbook FAA-H-8083-28
<input type="checkbox"/> Weather Theory Part 2	<input type="checkbox"/> Aviation Weather Handbook FAA-H-8083-28
<input type="checkbox"/> Atmospheric Stability	<input type="checkbox"/> AWH Chapter 13 - Atmospheric Stability

## Completion Standards

This module is successfully completed when the learner has engaged with and understood all topics presented within the module lessons. Lesson quizzes must be completed to identify areas needing further study. The learner is expected to review any incorrect responses to ensure a thorough grasp of the content before progressing.

## Training Log

Study Date(s)

Completion Date

Learner Signature

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## Module 14 - Weather Hazards

### Objective

This module equips learners with the knowledge and skills to identify, understand, and respond to various critical weather situations that pose risks to aviation safety. The module will first focus on critical weather situations, where learners will be able to recognize and evaluate weather conditions such as severe storms, turbulence, and low visibility that can significantly impact flight operations. The Windshear Recognition and Avoidance lesson provides learners with insights into the causes and characteristics of windshear and microbursts, along with strategies for its recognition and avoidance during flight. The inflight icing lessons introduce the concepts of, types of, and formation processes of icing, along with the practical aspects of icing, including forecasting, detection, prevention, and the effects of icing on aircraft performance. By the end of this module, learners will be well-prepared to anticipate, recognize, and manage the risks associated with various weather hazards, enhancing flight safety in adverse weather conditions.

### Gold Seal Instrument Pilot Ground School: Section 6 - Aviation Weather

Required Lessons	Additional Resources
<input type="checkbox"/> Critical Weather Situations	
<input type="checkbox"/> Windshear Recognition and Avoidance	
<input type="checkbox"/> Inflight Icing - Part 1	<input type="checkbox"/> Inflight Icing (FAA IFH) <input type="checkbox"/> Aviation Weather Handbook Chap. 20 - Icing
<input type="checkbox"/> Inflight Icing - Part 2	<input type="checkbox"/> Inflight Icing (FAA IFH) <input type="checkbox"/> Aviation Weather Handbook Chap. 20 - Icing

### Completion Standards

This module is successfully completed when the learner has engaged with and understood all topics presented within the module lessons. Lesson quizzes must be completed to identify areas needing further study. The learner is expected to review any incorrect responses to ensure a thorough grasp of the content before progressing.

### Training Log

Study Date(s)

Completion Date

Learner Signature

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# Module 15 - Weather Reports and Forecasts

## Objective

This module is designed to enhance the learner's proficiency in interpreting and utilizing aviation weather charts and aviation weather reports, critical tools for safe and informed flight planning and decision-making. The first part of the module, focusing on aviation weather charts, equips learners with the skills to read and analyze various types of weather charts, including surface analysis, prognostic, significant weather charts, and graphical forecasts for aviation (GFA). Learners will understand how to extract and apply pertinent weather information, such as fronts, pressure systems, and areas of precipitation, to their flight planning. In the aviation weather reports lesson, learners will develop a working understanding to interpret different types of weather reports, including METARs (Meteorological Terminal Aviation Routine Weather Reports), TAFs (Terminal Aerodrome Forecasts), PIREPs (Pilot Reports), AIRMETS, and SIGMETS. Learners will be able to decode these reports, discerning crucial information about current and forecasted weather conditions. Additionally, the module incorporates training on personal observation of weather conditions to complement chart analysis and report interpretation for comprehensive weather assessment. By the end of this module, learners will have developed the capability to effectively integrate weather chart analysis and weather report interpretations into their flight planning process, ensuring a comprehensive approach to weather considerations in aviation.

## Gold Seal Instrument Pilot Ground School: Section 6 - Aviation Weather

Required Lessons	Additional Resources
<input type="checkbox"/> Aviation Weather Charts	<input type="checkbox"/> NOAA GFA Charts Online <input type="checkbox"/> Weather Charts Used in FAA Instrument Exam <input type="checkbox"/> AWH Chapter 25 - Analysis
<input type="checkbox"/> Aviation Weather Reports	<input type="checkbox"/> AWH Chapter 24 - Observations

## Completion Standards

This module is successfully completed when the learner has engaged with and understood all topics presented within the module lessons. Lesson quizzes must be completed to identify areas needing further study. The learner is expected to review any incorrect responses to ensure a thorough grasp of the content before progressing.

## Training Log

Study Date(s)

Completion Date

Learner Signature

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# Stage Six Check

## Objective

The objective of the stage six check is to evaluate the learner's comprehensive understanding and practical application of the concepts and skills introduced in this stage. Prior to undertaking the stage check, the learner must have completed all associated quizzes within the stage. Successful completion of this stage check demonstrates the learner's proficiency in interpreting and applying weather information effectively.

## Gold Seal Instrument Pilot Ground School: Stage Six Check

## Completion Standards

The stage check is successfully completed when the learner demonstrates an understanding of all material covered in stage six by achieving a minimum passing score of 90% on the comprehensive assessment. Any areas of deficiency identified in the stage check must be thoroughly reviewed and understood by the learner to ensure a solid foundation of knowledge for this stage of training.

## Training Log

Study Date(s)

Completion Date

Learner Signature

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## Stage 7 - Human Factors

### Objective

In Stage Seven, learners will integrate human factors into aviation. This stage covers the physiological aspects affecting pilot performance, and their impact on safe flight operations. It also focuses on enhancing aeronautical decision-making and judgment skills, crucial for effective problem-solving and risk management in flight. This stage is designed to develop a deeper understanding of how human factors intertwine with technical knowledge, contributing to overall flight safety and efficiency in instrument flying.

Module	Title
16	Physiology, ADM, and Judgment
	<b>Stage Seven Check</b>

### Completion Standards

Stage completion is achieved when the learner fulfills the objectives of each module, exhibiting proficiency in understanding and applying the associated processes, exercises, and activities. Successful completion of the stage is demonstrated by the learner's ability to achieve a minimum score of 90% on the stage check assessment and complete a comprehensive review of any topics where deficiencies are noted.

# Module 16 - Physiology, ADM, and Judgment

## Objective

This module is specifically designed to address key aspects of flight safety and efficiency, focusing on physiological factors, cognitive skills, and crew coordination. It begins with the safe and efficient operation of aircraft under instrument flight rules and conditions, where learners will review best practices and strategies to maintain high safety standards while optimizing operational efficiency. The module then progresses to spatial disorientation and optical illusions, educating learners on recognizing and managing these common perceptual challenges faced by pilots. Attention is also given to physiological concerns such as hypoxia and hyperventilation, and fatigue, highlighting their effects on pilot performance and strategies for prevention and mitigation. A significant component of the module is aeronautical decision making (ADM) and judgment, where learners will develop skills in critical thinking, risk assessment, and effective decision-making in complex flight scenarios. Lastly, the module covers crew resource management (CRM), crew communication, and coordination, focusing on the importance of teamwork, clear communication, and resource management in enhancing flight safety and operational effectiveness. This comprehensive approach ensures learners are well-equipped to handle various challenges and responsibilities inherent in aviation.

## Gold Seal Instrument Pilot Ground School: Section 7 - Human Factors

Required Lessons	Additional Resources
<input type="checkbox"/> Safe and Efficient Operation of Aircraft	
<input type="checkbox"/> Spatial Disorientation	<input type="checkbox"/> Human Factors (FAA IFH)
<input type="checkbox"/> Optical Illusions	<input type="checkbox"/> Human Factors (FAA IFH)
<input type="checkbox"/> Hypoxia and Hyperventilation	<input type="checkbox"/> PHAK Chapter 17 - Hypoxia
<input type="checkbox"/> Fatigue	<input type="checkbox"/> PHAK Chapter 17 - Fatigue
<input type="checkbox"/> Aeronautical Decision Making and Judgment	<input type="checkbox"/> Test Topics <input type="checkbox"/> PHAK Chapter 2 - Aeronautical Decision Making
<input type="checkbox"/> CRM, Crew Communication, and Coordination	<input type="checkbox"/> Single Pilot Resource Management (PDF) <input type="checkbox"/> AC 120-51E: Crew Resource Management Training

## Completion Standards

This module is successfully completed when the learner has engaged with and understood all topics presented within the module lessons. Lesson quizzes must be completed to identify areas needing further study. The learner is expected to review any incorrect responses to ensure a thorough grasp of the content before progressing.

## Training Log

Study Date(s)

Completion Date

Learner Signature

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# Stage Seven Check

## Objective

The objective of the stage seven check is to evaluate the learner's comprehensive understanding and practical application of the concepts and skills introduced in this stage. Prior to undertaking the stage check, the learner must have completed all associated quizzes within the stage. Successful completion of this stage check confirms that the learner has a comprehensive grasp of human factors, demonstrating their ability to apply this knowledge practically in managing and mitigating risks associated with instrument flight.

## Gold Seal Instrument Pilot Ground School: Stage Seven Check

## Completion Standards

The stage check is successfully completed when the learner demonstrates an understanding of all material covered in stage seven by achieving a minimum passing score of 90% on the comprehensive assessment. Any areas of deficiency identified in the stage check must be thoroughly reviewed and understood by the learner to ensure a solid foundation of knowledge for this stage of training.

## Training Log

Study Date(s)

Completion Date

Learner Signature

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## Stage 8 - Regulations

### Objective

In Stage Eight, learners will focus exclusively on the comprehensive understanding of aviation regulations. This final stage centers around an in-depth exploration of the various regulatory requirements that govern instrument flight, including pilot certifications, aircraft airworthiness, and flight operation standards. Learners will thoroughly examine the nuances of these regulations, understanding their impact on safe and compliant flight operations. The goal of this stage is to ensure that learners have a profound and detailed knowledge of the regulatory framework, enabling them to integrate this critical information into their flight planning and execution, thereby upholding the highest standards of safety and efficiency in instrument flying.

Module	Title
17	Regulations
	Stage Eight Check

### Completion Standards

Stage completion is achieved when the learner fulfills the objectives of each module, exhibiting proficiency in understanding and applying the associated processes, exercises, and activities. Successful completion of the stage is demonstrated by the learner's ability to achieve a minimum score of 90% on the stage check assessment and complete a comprehensive review of any topics where deficiencies are noted.

# Module 17 - Regulations

## Objective

This module is tailored to provide learners with an in-depth understanding of the regulatory framework specifically relevant to instrument flight, encompassing pilot, aircraft, and flight planning regulations, along with the applicable sections of the Aeronautical Information Manual (AIM). The module begins with an overview of the pertinent sections of the AIM, emphasizing its application in instrument flight for regulatory guidance, procedural norms, and best practices. The lesson titled pilot regulations focuses on the specific legal requirements and responsibilities for instrument-rated pilots, including currency and proficiency standards. In the lesson titled plane regulations, learners will review the airworthiness standards, maintenance requirements, and documentation specific to aircraft equipped for instrument flight, ensuring compliance and safety. The planning regulations lesson teaches the critical aspects of IFR flight planning, highlighting the legalities and procedural requirements for filing IFR flight plans, navigating airspace, and adhering to ATC instructions. By the end of this module, learners will have a comprehensive understanding of the regulations and guidelines that are essential for safe and compliant instrument flight operations.

## Gold Seal Instrument Pilot Ground School: Section 8 - Regulations

Required Lessons	Required Resources*
<input type="checkbox"/> Regulations and the Aeronautical Information Manual	<input type="checkbox"/> The FAA AIM Online Version
<input type="checkbox"/> Pilot Regulations	<input type="checkbox"/> The FAA Regulations (ecfr.gov)
<input type="checkbox"/> Plane Regulations	<input type="checkbox"/> IFR Pilot Regulations Guide
<input type="checkbox"/> Planning Regulations	<input type="checkbox"/> IFR Plane Regulations Guide
	<input type="checkbox"/> IFR Planning Regulations Guide

\*Note: The resources in this lesson are **required**, as they are invaluable guides toward understanding the complexities of regulations.

## Completion Standards

This module is successfully completed when the learner has engaged with and understood all topics presented within the module lessons. Lesson quizzes must be completed to identify areas needing further study. The learner is expected to review any incorrect responses to ensure a thorough grasp of the content before progressing.

## Training Log

Study Date(s)

Completion Date

Learner Signature

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# Stage Eight Check

## Objective

The objective of the stage eight check is to evaluate the learner's comprehensive understanding and practical application of the concepts and skills introduced in this stage. Prior to undertaking the stage check, the learner must have completed all associated quizzes within the stage. Successful completion of this stage check confirms the learner's proficiency in navigating the complex regulatory environment of aviation, demonstrating their ability to apply these regulations effectively in planning and conducting flights.

## Gold Seal Instrument Pilot Ground School: Stage Eight Check

## Completion Standards

The stage check is successfully completed when the learner demonstrates a comprehensive understanding of all material covered in stage eight by achieving a minimum passing score of 90% on the comprehensive assessment. Any areas of deficiency identified in the stage check must be thoroughly reviewed and understood by the learner to ensure a solid foundation of knowledge for this stage of training.

## Training Log

Study Date(s)

Completion Date

Learner Signature

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# End-of-Course Test

## Objective

The objective of the end-of-course test is to rigorously assess the learner's grasp of all the material presented throughout the ground training course, thereby gauging their preparedness for the FAA Instrument Rating-Airplane knowledge test. The end-of-course test, comprising 60 questions, mirrors the format and scope of the FAA exam, serving as both a benchmark for the learner's proficiency and a final step before undertaking the official FAA exam. Learners are encouraged to take advantage of unlimited practice exams available within the exams menu, ensuring they approach the end-of-course test with confidence and a robust understanding of the subject matter.

## Gold Seal Instrument Pilot Ground School: End-of-Course Test

### Completion Standards

The end-of-course test is completed successfully when the learner achieves a minimum passing score of 90%, demonstrating a comprehensive understanding of the course material and readiness for the FAA Instrument Rating-Airplane Pilot knowledge test. Upon completion, the learner is required to review all incorrect answers to reinforce understanding and rectify any deficiencies. This review process is critical to ensuring the learner has fully grasped the essential concepts and is prepared for the official FAA knowledge test.

### Training Log

Study Date(s)

Completion Date

Learner Signature

\_\_\_\_\_

## Enrollment and Graduation Certificates

### Enrollment Certificate

This is to certify that

\_\_\_\_\_

*Learner Name*

**is enrolled in the Federal Aviation Administration approved Instrument Pilot Ground School Course**

conducted by

\_\_\_\_\_

*School Name and Certificate Number*

\_\_\_\_\_

*Chief Instructor*

\_\_\_\_\_

*Enrollment Date*

### Graduation Certificate

This is to certify that

\_\_\_\_\_

*Learner Name and Number*

**has satisfactorily completed the course requirements, stages and tests, received  
\_\_\_\_\_ hours of cross-country training, and has graduated from the Federal  
Aviation Administration approved Instrument Pilot Ground School Course**

conducted by

\_\_\_\_\_

*School Name and Certificate Number*

\_\_\_\_\_

*Chief Instructor*

\_\_\_\_\_

*Date of Graduation*



**Beyond Learning**

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