

**AVIA 3133
INSTRUMENT PROCEDURES
UNIVERSITY OF OKLAHOMA**

_____, 20_____

I, _____, have acquired and have in my possession a copy of the training course outline, training syllabus, and safety procedures and practices for AVIA 3133, Instrument Flight.

Student Signature

Flight Instructor Signature

Chief Flight Instructor Signature

**UNIVERSITY OF OKLAHOMA UNIVERSITY OF OKLAHOMA
DEPARTMENT OF AVIATION**

**AVIATION 3133 SYLLABUS
INSTRUMENT PROCEDURES**

March 31, 1999

Instructor: David McClurkin

Any student in this course who has a disability that may prevent him or her from fully demonstrating his or her abilities should contact department personnel as soon as possible to discuss accommodations necessary to ensure full participation and facilitate educational opportunities.

All copyrights and royalties to the rights holders of the intellectual property contained herein have been cleared

**INSTRUMENT PILOT
GROUND TRAINING SYLLABUS
GROUND TRAINING COURSE OBJECTIVES**

The student will obtain the necessary aeronautical knowledge and meet the prerequisites specified in Federal Aviation Regulation Part 61 for an instrument pilot written test. Additionally, the student will be introduced to the concepts of flying safety, professionalism, and decision making needed to become a safe, professional instrument pilot.

GROUND TRAINING COMPLETION STANDARDS

The student will demonstrate through discussion, written and oral quizzes, and written examinations that the prerequisite knowledge required by Federal Aviation Regulation Part 61 has been met, and that the knowledge needed to pass the instrument pilot written test has been obtained.

UNIVERSITY OF OKLAHOMA
INSTRUMENT GROUND TRAINING SYLLABUS
 Part 141 - A*

STAGE I

Lesson 1 -	Chapter 1,	Section A	1.3 hrs	
Lesson 2 -	Chapter 2,	Section A	1.3 hrs	
Lesson 3 -	Chapter 2,	Section B	1.3 hrs	
Lesson 4 -	Chapter 2,	Section C	1.3 hrs	
Lesson 5 -	FARS	1, 61, 91, NTSB 830	1.3 hrs	
Lesson 6 -	Chapter 3,	Section A	1.3 hrs	
Lesson 7 -	Chapter 3,	Section B	1.3 hrs	
Lesson 8 -	Chapter 3,	Section C	1.3 hrs	
Lesson 9 -	Stage Review		1.3 hrs	
Lesson 10 -	Stage Exam			1.3hrs

STAGE II

Lesson 1 -	Chapter 4,	Sections A & B	1.3 hrs	
Lesson 2 -	Chapter 5,	Sections A & B	1.3 hrs	
Lesson 3 -	Chapter 5,	Section C	1.3 hrs	
Lesson 4 -	Chapter 6,	Sections A & B	1.3 hrs	
Lesson 5 -	Chapter 7,	Sections A & B	2.6 hrs	
Lesson 6 -	Chapter 8,	Sections A, B, & C	2.6 hrs	
Lesson 7 -	Stage Review		1.3 hrs	
Lesson 8 -	Stage Exam			1.3 hrs

STAGE III

Lesson 1 -	Chapter 9,	Section A	2.6 hrs	
Lesson 2 -	Chapter 9,	Section B	1.3 hrs	
Lesson 3 -	Chapter 9,	Sections C, D, & E	2.6 hrs	
Lesson 4 -	Chapter 10,	Sections A & B	1.3 hrs	
Lesson 5 -	Chapter 10,	Section C	1.3 hrs	
Lesson 6 -	Stage Review		1.3 hrs	
Lesson 7 -	Stage Exam			1.3 hrs
Lesson 8 -	Comprehensive Final			1.3 hrs

TOTALS			33.8 hrs	5.2 hrs	
GRAND TOTAL-					39.0 HOURS

Note: The chapters and sections referred to in this syllabus are based on the Instrument Commercial Manual, published by Jeppesen Sanderson, Inc, Englewood, Colorado. Exercises are incorporated into the textbook at the end of each section. The hours designated for each chapter are suggested guidelines only, and may vary at the instructor's discretion. At no time will the hours of instruction be less than the total number of hours defined in this syllabus.

* This time allocation table to be used for college credit students.

UNIVERSITY OF OKLAHOMA
INSTRUMENT GROUND TRAINING SYLLABUS
 Part 141 – B*

STAGE I

Lesson 1 -	Chapter 1,	Section A	1.0 hr	
Lesson 2 -	Chapter 2,	Section A	1.0 hr	
Lesson 3 -	Chapter 2,	Section B	1.0 hr	
Lesson 4 -	Chapter 2,	Section C	1.0 hr	
Lesson 5 -	FARS	1, 61, 91, NTSB 830	1.0 hr	
Lesson 6 -	Chapter 3,	Section A	1.0 hr	
Lesson 7 -	Chapter 3,	Section B	1.0 hr	
Lesson 8 -	Chapter 3,	Section C	1.0 hr	
Lesson 9 -	Stage Review		1.0 hr	
Lesson 10 -	Stage Exam			1.0 hr

STAGE II

Lesson 1 -	Chapter 4,	Sections A & B	1.0 hr	
Lesson 2 -	Chapter 5,	Sections A & B	1.0 hr	
Lesson 3 -	Chapter 5,	Section C	1.0 hr	
Lesson 4 -	Chapter 6,	Sections A & B	1.0 hr	
Lesson 5 -	Chapter 7,	Sections A & B	2.0 hrs	
Lesson 6 -	Chapter 8,	Sections A, B, & C	2.0 hrs	
Lesson 7 -	Stage Review		1.0 hr	
Lesson 8 -	Stage Exam			1.0 hr

STAGE III

Lesson 1 -	Chapter 9,	Section A	2.0 hrs	
Lesson 2 -	Chapter 9,	Section B	1.0 hr	
Lesson 3 -	Chapter 9,	Sections C, D, & E	2.0 hrs	
Lesson 4 -	Chapter 10,	Sections A & B	1.0 hr	
Lesson 5 -	Chapter 10,	Section C	1.0 hr	
Lesson 6 -	Stage Review		1.0 hr	
Lesson 7 -	Stage Exam			1.0 hr
Lesson 8 -	Comprehensive Final			1.0 hr

TOTALS			26.0 hours	4.0 hours	
GRAND TOTAL -					30.0 hours

Note: The chapters and sections referred to in this syllabus are based on the Instrument Commercial Manual, published by Jeppesen Sanderson, Inc, Englewood, Colorado. Exercises are incorporated into the textbook at the end of each section. The hours designated for each chapter are suggested guidelines only, and may vary at the instructor's discretion. At no time will the hours of instruction be less than the total number of hours defined in this syllabus.

*This time allocation table to be used for non-credit students only.

**UNIVERSITY OF OKLAHOMA
STAGE I**

STAGE OBJECTIVE

During this stage, the student will learn the principles of instrument flight, including the operation use, and limitations of flight instruments and instrument navigation using VOR, DME, and ADF. The student will learn the function of the air traffic control as well as the FARs applicable to instrument flight operations.

STAGE COMPLETION STANDARD

This stage is complete when the student has taken the Stage I written exam with a minimum passing score of 70%, and the instructor has reviewed each incorrect response to ensure complete understanding before the student progresses to Stage II.

STAGE I GROUND LESSON 1

TEXT REFERENCE: Instrument Commercial Manual - Chapter 1, Section A, "Instrument and Commercial Training and Opportunities"

LESSON OBJECTIVE: The student will gain an appreciation for the history of instrument flight, advantages of an instrument rating and instrument currency requirements.

CONTENT:

Section A - "Instrument and Commercial Training and Opportunities"

Instrument Flight History

Why an Instrument Rating?

Instrument Training

Currency

COMPLETION STANDARDS

Through oral quizzing and discussion, the student will demonstrate an understanding of instrument flight history, advantages of obtaining an instrument rating and currency requirements prior to progressing to Ground Lesson I-2.

STAGE I GROUND LESSON 2

TEXT REFERENCE: Instrument Commercial Manual - Chapter 2, Section A, "Flight Instrument Systems"

VIDEO PRESENTATION: Instrument Commercial Video - Part I, Subject Areas, "Flight Instrument Systems"

LESSON OBJECTIVE: The student will gain a working knowledge of the function, use, and limitations of the flight instruments.

CONTENT:

Section A - "Flight Instrument Systems"

- Gyroscopic Flight Instruments
- Instrument Checks
- Magnetic Compass
- Pitot-Static Instruments
- System Errors

COMPLETION STANDARDS:

Through oral quizzing and discussion, the student will demonstrate an understanding of flight instrument systems before progressing to Ground Lesson I-3.

STAGE I GROUND LESSON 3

TEXT REFERENCE: Instrument Commercial Manual - Chapter 2, Section B, "Attitude Instrument Flying"

VIDEO PRESENTATION: Instrument Commercial Video - Part I, Subject Area, "Attitude Instrument Flying"

LESSON OBJECTIVE: The student will learn the fundamentals of attitude instrument flying and how the various flight instruments are used to maintain aircraft control.

CONTENT:

Section B - "Attitude Instrument Flying"

- Concepts and Skills
- Straight-and-Level Flight
- Level Turns
- Steep Turns
- Climbs and Descents
- Constant Airspeed Climbs
- Constant Airspeed Descents
- Constant-Rate Climbs
- Constant-Rate Descents
- Climbing and Descending Turns
- Unusual Attitude Recovery
- Stalls
- Partial Panel Flying
- Timed Turns

COMPLETION STANDARDS:

Through oral quizzing and discussions, the student will demonstrate an understanding of attitude instrument flight before progressing on to Ground Lesson I-4.

STAGE I GROUND LESSON 4

TEXT REFERENCE: Instrument Rating Manual - Chapter 2, Section C, "Instrument Navigation"

VIDEO PRESENTATION: Instrument Commercial Video - Part I, Subject Area, "Instrument Navigation"

LESSON OBJECTIVE: The student will learn and understand the function, use, and limitations of VOR, DME, and ADF radio equipment for IFR navigation.

CONTENT:

Section C - "Instrument Navigation"

- VOR Facilities
- VOR Accuracy Checks
- Interpreting VOR Indicators
- VOR Orientation
- Time and Distance
- VOR Limitations
- Distance Measuring Equipment
- Horizontal Situation Indicator
- ADF Facilities
- Nondirectional Radio Beacons
- Commercial Broadcast Stations
- Interpreting ADF Indications
- Radio Magnetic Indicator
- DME Arcs

COMPLETION STANDARDS:

Through oral quizzes and discussion, the student will demonstrate an understanding of instrument navigation before progressing to Ground Lesson I-5.

STAGE I GROUND LESSON 5

TEXT REFERENCE: FAR Booklet - Instrument Rating FARs

LESSON OBJECTIVE: During the study of the Federal Aviation Regulations, the student will learn the regulations that relate specifically to instrument flight. This will enable the student to safely conduct operations in the national airspace system. Additionally, NTSB Part 830 will be reviewed.

CONTENT:

- FAR Part 1
- FAR Part 61
- FAR Part 91
- NTSB Part 830

COMPLETION STANDARDS:

Through oral quizzes and discussion, the student will demonstrate an understanding of the Federal Aviation Regulations before progressing to Ground Lesson I-6.

STAGE I GROUND LESSON 6

TEXT REFERENCE: Instrument Commercial Manual - Chapter 3, Section A, "Airports, Airspace, and Flight Information"

VIDEO PRESENTATION: Instrument Commercial Video - Part I, Subject Area, "Airports, Airspace, and Flight Information"

LESSON OBJECTIVE: The student's knowledge of the national airspace system will be expanded. This will include airports and flight information publications as they relate to instrument flight operations.

CONTENT:

Section A - "Airports, Airspace, and Flight Information"

- Runway Markings
- Special Purpose Areas
- Lighting Systems
- Runway Lighting
- Controlled Airspace
- Special Use Airspace
- Class G Airspace
- Airport/Facility Directory
- Airman's Information Manual
- Notices to Airmen
- International Flight Information manual
- Advisory Circulars
- Jeppesen J-AID

COMPLETION STANDARDS:

Through oral quizzes and discussion, the student will demonstrate an understanding of airports, airspace, and flight information before progressing to Ground Lesson I-7.

STAGE I GROUND LESSON 7

TEXT REFERENCE: Instrument Commercial Manual - Chapter 3, Section B, "Air Traffic Control System"

VIDEO PRESENTATION: Instrument Commercial Video - Part I, Subject Area, "Air Traffic Control System"

LESSON OBJECTIVE: The student will learn how the air traffic control system functions, including the use and limitations of radar and transponders.

CONTENT:

Section B - "Air Traffic Control System"

- Air Route Traffic Control Center
- Processing the IFR Flight Plan
- Enroute Traffic Separation
- Weather Information
- Safety Alerts
- Emergency Assistance
- ATIS
- Clearance Delivery
- Control Tower
- Approach and Departure Control
- Radar Service for VFR Aircraft
- Class A Airspace
- Class B Airspace
- Class C Airspace
- Class D Airspace
- Class E Airspace
- Class G Airspace
- Traffic Advisories
- Flight Service Stations

COMPLETION STANDARDS:

Through oral quizzes and discussion, the student will demonstrate an understanding of the air traffic control system before progressing to Ground Lesson I-8.

STAGE I GROUND LESSON 8

TEXT REFERENCE: Instrument Commercial Manual - Chapter 3, Section C, "ATC Clearances"

VIDEO PRESENTATION: Instrument Commercial Video - Part I, Subject Area, "ATC Clearances"

LESSON OBJECTIVE: The student will become familiar with the various ATC clearances and their use in IFR flight operations. Additionally, the student will learn clearance shorthand symbols.

CONTENT:

Section C - "ATC Clearances"

- Pilot Responsibilities
- Where a Clearance is Required
- Elements of an IFR Clearance
- Abbreviated IFR Departure Clearance
- Cruise Clearance
- Approach Clearances
- VFR On Top
- VFR Restrictions to an IFR Clearance
- Composite Flight Plan
- Hold For Release
- Clearance Void Time
- Clearance Readback
- Clearance Shorthand

COMPLETION STANDARDS:

Through oral quizzing and discussion, the student will demonstrate an understanding of ATC clearances before progressing to Ground Lesson I-9.

STAGE I GROUND LESSON 9 STAGE I - REVIEW

TEXT REFERENCE: Instrument Commercial Manual - Chapters 1, 2 and 3
FAR's 1, 61, 91, NTSB 830

LESSON OBJECTIVE: The instructor will review material presented in the previous eight lessons and the student will be prepared to discuss any material they wish clarified.

CONTENT:

Any material from the previous eight lessons.

COMPLETION STANDARDS:

Through oral quizzing and review, the student will demonstrate continued and complete understanding of material presented in Stage I, prior to taking the Stage I Exam.

STAGE I GROUND LESSON 10 STAGE I – EXAM

LESSON OBJECTIVE: The student will complete a written test covering the material in the Stage I, Ground Lessons 1-8.

CONTENT:

Stage I Exam

“Instrument and Commercial Training and Opportunities”

“Flight Instrument Systems”

“Attitude Instrument Flying”

“Instrument Navigation”

Instrument Rating FARs

“Airports, Airspace, and Flight Information”

“Air Traffic Control System”

“ATC Clearances”

COMPLETION STANDARDS:

The student will demonstrate understanding of the test material by passing the test with a minimum score of 70%, and the instructor has reviewed each incorrect response to ensure complete understanding before the student progresses to Stage II.

STAGE II

STAGE OBJECTIVE

During this stage, the student will learn the use of instrument flight charts for IFR planning and flight as well as the procedures used to execute the various IFR approaches and the procedures for IFR departure, enroute, and arrival operations.

STAGE COMPLETION STANDARD

This stage is complete when the student has taken the Stage II written exam with a minimum passing score of 70%, and the instructor has reviewed each incorrect response to ensure complete understanding before the student progresses to Stage III.

STAGE II GROUND LESSON 1

TEXT REFERENCE: Instrument Commercial Manual – Chapter 4, Section A, “Departure Charts” and Section B, “Departure Procedures”

VIDEO PRESENTATION: Instrument Commercial Video – Part II, Segment 1, Subject Area, “Departure Charts”

Instrument Commercial Video – Part II, Segment 1, Subject Area, “Departure Procedures”

LESSON OBJECTIVE: The student will learn the use of SID charts and IFR departure procedures and the operational considerations of the departure.

CONTENT:

Section A – “Departure Charts”

- Standard Instrument Departure
- Pilot Nav SID
- Vector SID

Section B – “Departure Procedures”

- Takeoff Minimums
- Visibility
- Departure Considerations
- Standard Instrument Departure (SID)
- IFR Departure Procedures
- Radar Departures
- Nonradar Departures
- IFR Climb Consideration

COMPLETION STANDARDS:

Through oral quizzes and discussion, the student will demonstrate an understanding of departure charts and procedures before proceeding to Ground Lesson II-2.

STAGE II GROUND LESSON 2

TEXT REFERENCE: Instrument Commercial Manual – Chapter 5, Section A, “Enroute and Area Charts” and Section B, “Enroute Procedures”

VIDEO PRESENTATION: Instrument Commercial Video – Part II, Segment 1, Subject Area, “Enroute and Area Charts”

Instrument Commercial Video – Part II, Segment 1, Subject Area, “Enroute Procedures”

LESSON OBJECTIVE: The student will become familiar with IFR enroute and area charts, including the information contained on the charts and the symbols used to present that information and IFR enroute procedures.

CONTENT:

Section A – “Enroute and Area Charts”

- Enroute Charts
- Front Panel
- Navigation Aids
- Victor airways
- Communications
- Airports
- Depiction of Class A-G and Special Use Airspace
- Area Charts

Section B – “Enroute Procedures”

- Enroute Radar Procedures
- Communication
- Reporting Procedures in Radar and Non-Radar Environment
- Enroute Navigation Using GPS
- IFR Cruising Altitude
- Descending From the Enroute Segment

COMPLETION STANDARDS:

Through oral quizzing and discussions, the student will demonstrate an understanding of enroute and area charts and enroute procedures before progressing to Ground Lesson II-3.

STAGE II GROUND LESSON 3

TEXT REFERENCE: Instrument Commercial Manual – Chapter 5, Section C, “Holding Procedures”

VIDEO PRESENTATION: Instrument Commercial Video – Part II, Segment 1, Subject Area, “Holding Procedures”

LESSON OBJECTIVE: The student will learn the purpose of holds, types of holds, holding fixes, holding entries and timing and wind correction to maintain the hold.

CONTENT:

Section A – “Holding Procedures”

- Standard and Non-Standard Holding Patterns
- Outbound and Inbound Timing
- Crosswind Correction
- Maximum Holding Speed
- Holding Pattern Entries
- Visualizing Entry Procedures
- ATC Holding Instructions

COMPLETION STANDARDS:

Through oral quizzing and discussions, the student will demonstrate an understanding of holding procedures before progressing to Ground Lesson II-4.

STAGE II GROUND LESSON 4

TEXT REFERENCE: Instrument Commercial Manual – Chapter 6, Section A, “Arrival Charts” and Section B, “Arrival Procedures”

VIDEO PRESENTATION: Instrument Commercial Video – Part II, Segment 1, Subject Area, “Arrival Charts”

Instrument Commercial Video – Part II, Segment 1, Subject Area, “Arrival Procedures”

LESSON OBJECTIVE: The student will learn the use of STAR Charts, IFR arrival procedures and operational considerations of the arrival.

CONTENT:

Section A - "Arrival Charts"

- Standard Terminal Arrival Route
- Interpreting the STAR
- Vertical Navigation Planning

Section B - "Arrival Procedures"

- Preparing For the Arrival
- Reviewing the Approach
- Altitude and Airspeed Considerations

COMPLETION STANDARDS:

Through oral quizzes and discussion the student will demonstrate an understanding of STAR charts and arrival procedures before progressing to Ground Lesson II-5.

STAGE II GROUND LESSON 5

TEXT REFERENCE: Instrument Commercial Manual - Chapter 7, Section A, "Instrument Approach Charts" and Section B, "Approach Procedures"

VIDEO PRESENTATION: Instrument Commercial Video - Part II, Segment 2, Subject Area, "Approach Charts"

Instrument Commercial Video - Part II, Segment 2, Subject Area, "Approach Procedures"

LESSON OBJECTIVE: The student will learn to interpret and use the information published on instrument approach charts and gain an understanding of instrument approach procedures.

CONTENT:

Section A - "Instrument Approach Charts"

- Approach Chart
- Approach Segments
- Heading Section
- Plan View
- Profile View
- Stepdown Fix and VDP
- Landing Minimums
- Aircraft Categories
- Visibility Requirements
- Minimum Altitude Requirements
- Inoperative Components
- Airport Chart
- Heading Section
- Plan View and Additional Runway Information
- Takeoff and Alternate Minimums

Section B - "Approach Procedures"

- Approach Chart Review
- Approach Clearance
- Straight In Approach
- Use of ATC Radar for Approaches
- Course Reversal
- Timed Approaches from a Holding Fix
- Final Approach
- Circling Approaches
- Sidestep Maneuver
- Missed Approach Procedures
- Visual and Contact Approaches

COMPLETION STANDARDS:

Through oral quizzes and discussion, the student will demonstrate an understanding of instrument approach charts and approach procedures before progressing on to Ground Lesson II-6

STAGE II GROUND LESSON 6

TEXT REFERENCE: Instrument Commercial Manual - Chapter 8, Section A, "VOR and NDB Approaches", Section B, "ILS Approaches", Section C, "GPS and RNAV Approaches"

VIDEO PRESENTATION: Instrument Commercial Video - Part II, Segment 2, Subject Area, "VOR and NDB Approaches"

Instrument Commercial Video - Part II, Segment 2, Subject Area, "ILS Approaches"

LESSON OBJECTIVE: The student learns the methods and procedures used to perform VOR, NDB, ILS, GPS and RNAV approaches.

CONTENT:

Section A - "VOR and NDB Approaches"

- Flying the VOR Approach

- Flying the NDB Approach

Section B - "ILS Approaches"

- ILS Categories and Minimums

- ILS Components

- Flying the ILS Approach

- Localizer and Localizer Backcourse Approaches

- LDA, SDF and MLS Approaches

Section C - "GPS and RNAV Approaches"

- GPS Approaches, Overlay and Stand Alone

- GPS Equipment Requirements

- Flying the Approach

- VOR/DME RNAV Approaches

COMPLETION STANDARDS:

Through oral quizzing and discussion, the student will demonstrate an understanding VOR, NDB, ILS, GPS and RNAV approaches before progressing to Ground Lesson II-7.

STAGE II Ground Lesson 7 STAGE II - REVIEW

TEXT REFERENCE: Instrument Commercial Manual - Chapters 4, 5, 6, 7 and 8.

The instructor will review material presented in the previous six lessons and the student will be prepared to discuss any material they wish clarified.

CONTENT:

Any material from the previous six lessons.

COMPLETION STANDARDS:

Through oral quizzing and review, the student will demonstrate continued and complete understanding of material presented in Stage II, prior to taking the Stage II Exam.

STAGE II GROUND LESSON 8 STAGE II - EXAM

LESSON OBJECTIVE: The student will complete a written test covering the material in the Stage II, Ground Lessons 1 through 6.

CONTENT:

Stage II Exam

"Departure Charts"

"Departure Procedures"

"Enroute and Area Charts"

"Enroute Procedures"

"Holding Procedures"

"Arrival Charts"

"Arrival Procedures"

"Instrument Approach Charts"

"Approach Procedures"

"VOR and NDB Approaches"

"ILS Approaches"

"GPS and RNAV Approaches"

COMPLETION STANDARDS

The student will demonstrate understanding of the test material by passing the test with a minimum score of 70%, and the instructor has reviewed each incorrect response to ensure complete understanding before the student progresses to Stage III.

STAGE III

STAGE OBJECTIVE

During this stage, the student will learn to analyze weather information, conditions, and trends while on the ground and in flight. In addition, the student will learn IFR flight planning and emergency procedures and gain insight into the psychological factors affecting pilot decision making.

STAGE COMPLETION STANDARD

This stage is complete when the student has taken the Stage III Examination and the Instrument Rating Final Exam and the instructor has reviewed each incorrect response to ensure complete understanding.

STAGE III GROUND LESSON 1

TEXT REFERENCE: Instrument Commercial Manual - Chapter 9, Section A, "Weather Factors"

VIDEO PRESENTATION: Instrument Commercial Video – Part III, Subject Area, "Weather Factors"

LESSON OBJECTIVE: The student will learn the major factors that affect weather patterns, and cause hazardous weather situations.

CONTENT:

Section A - "Weather Factors"

- The Atmosphere
- Moisture
- Atmospheric Stability
- Clouds
- Airmasses
- Fronts
- Types of Fronts

COMPLETION STANDARDS:

Through oral quizzes and discussions, the student will demonstrate an understanding of weather factors, before progressing to Ground Lesson III-2.

STAGE III GROUND LESSON 2

TEXT REFERENCE: Instrument Commercial Manual - Chapter 9, Section B, "Weather Hazards"

VIDEO PRESENTATION: Instrument Commercial Video – Part III, Subject Area, "Weather Hazards"

LESSON OBJECTIVE: The student will learn weather hazards causes, recognition and avoidance.

CONTENT:

Section B – "Weather Hazards"

- Thunderstorms
- Turbulence
- Wind Shear
- Low Visibility
- Volcanic Ash
- Icing

COMPLETION STANDARDS:

Through oral quizzing and discussion, the student will demonstrate an understanding of weather hazards before progressing to Ground Lesson III-3.

STAGE III GROUND LESSON 3

TEXT REFERENCE: Instrument Commercial Manual - Chapter 9, Section C, "Printed Reports and Forecasts", Section D, "Graphic Weather Products" and Section E, "Sources of Weather Information"

VIDEO PRESENTATION: Instrument Commercial Video – Part III, Subject Area, "Printed Reports and Forecasts"

Instrument Commercial Video – Part III, Subject Area, "Graphic Weather Products"

Instrument Commercial Video – Part III, Subject Area, "Sources of Weather Information"

LESSON OBJECTIVE: The student will learn how to interpret printed and graphic weather products and how to obtain weather information on the ground and in the air.

CONTENT:

Section C - "Printed Reports and Forecasts"

- METAR
- Radar Weather Reports
- PIREPs's
- TAF's
- Area Forecasts
- Winds and Temperatures Aloft Forecasts
- Severe Weather Reports and Forecasts

Section D – "Graphic Weather Products"

- Surface Analysis Chart
- Weather Depiction Chart
- Radar Summary Chart
- Satellite Weather Pictures
- Composite Moisture Stability Chart
- Constant Pressure Analysis Chart
- Observed Winds and Temperatures Aloft Chart
- Low-Level Significant Weather Prog Chart
- High-Level Significant Weather Prog Chart
- Severe Weather Outlook Chart
- Forecast Winds and Temperatures Aloft Chart
- Tropopause Data Chart

Section E – "Sources of Weather Information"

- Preflight Sources of Weather (FSS, DUATS, Private Industry, WWW)
- In-Flight Weather Sources (ATC, FSS, EFAS)
- In-Flight Weather Advisories
- Center Weather Advisories
- HIWAS
- TWEB
- Weather Radar Services
- AWOS/ASOS
- Airborne Weather Equipment

COMPLETION STANDARDS:

Through oral quizzing and discussion, the student will demonstrate an understanding of printed and graphic weather products as well as sources of weather information before progressing to Ground Lesson III-4.

STAGE III GROUND LESSON 4

TEXT REFERENCE: Instrument Commercial Manual - Chapter 10, Section A, "IFR Emergencies", and Section B, "IFR Decision Making"

VIDEO PRESENTATION: Instrument Commercial Video – Part III, Subject Area, "IFR Emergencies"
Instrument Commercial Video – Part III, Subject Area, "IFR Decision Making and Flight Considerations"

LESSON OBJECTIVE: The student will learn the correct procedures to be used during IFR emergencies and gain insight into the psychological factors that affect decision making. This lesson will also provide the knowledge necessary for safe and efficient operation of airplanes in IFR conditions.

CONTENT:

Section A - "IFR Emergencies"

- Declaring an Emergency
- Alerting ATC
- Use of Transponder
- Route
- Altitude
- Leave Clearance Limit
- Surveillance Approach
- No-Gyro Approach
- Malfunction Reports

Section B - "IFR Decision Making"

- Applying the Decision Making Process
- Pilot-In-Command Responsibility
- Communication
- Resource Use
- Workload Management
- Situational Awareness

COMPLETION STANDARDS:

Through oral quizzing and discussion, the student will demonstrate an understanding of IFR emergency procedures as well as decision making and flight considerations before progressing to Ground Lesson III-5.

STAGE III GROUND LESSON 5

TEXT REFERENCE Instrument Commercial Manual – Chapter 10, Section C, "IFR Flight Planning"

VIDEO PRESENTATION: Instrument Commercial Video – Part III, Subject Area, "IFR Flight Planning"

LESSON OBJECTIVE: The student will learn to plan IFR cross-country flights, including the use of flight information publications, obtaining weather briefings, and the preparation of a navigation log.

CONTENT:

Section C – "IFR Flight Planning"

- Flight Overview
- Flight Planning
- Flight Information Publications
- Weather Considerations
- Completing the Navigation Log
- Filing the Flight Plan

COMPLETION STANDARDS:

Through oral quizzing and discussion the student will demonstrate and understanding of IFR Flight Planning before progressing to Ground Lesson III-6.

STAGE III Ground Lesson 6 STAGE III - REVIEW

TEXT REFERENCE: Instrument Commercial Manual - Chapters 9 and 10.

The instructor will review material presented in the previous five lessons and the student will be prepared to discuss any material they wish clarified.

CONTENT:

Any material from the previous five lessons.

COMPLETION STANDARDS:

Through oral quizzing and review, the student will demonstrate continued and complete understanding of material presented in Stage III, prior to taking the Stage III Exam.

STAGE III GROUND LESSON 7 STAGE III - EXAM

LESSON OBJECTIVE: The student will complete a written test covering the material in the Stage III, Ground Lessons 1 through 5.

CONTENT:

Instrument Stage III Exam

"Weather Factors"

"Weather Hazards"

"Printed Reports and Forecasts"

"Graphic Weather Products"

"Sources of Weather Information"

"IFR Emergencies"

"IFR Decision Making"

"IFR Flight Planning"

COMPLETION STANDARDS:

The student will demonstrate understanding of the test material by passing the test with a minimum score of 70%, and the instructor has reviewed each incorrect response to ensure complete understanding before the student takes the comprehensive final.

STAGE III GROUND LESSON 8 FINAL EXAM

LESSON OBJECTIVE: This testing session is designed to evaluate the student's comprehension of the academic material presented in Stages I, II, and III in preparation for the FAA Instrument Rating Written Exam.

CONTENT:

Instrument Rating Exam

COMPLETION STANDARDS:

The student will complete the Instrument Rating Final Exam with a minimum passing score of 70%, and the instructor will review each incorrect response to ensure complete understanding before the student progresses to the FAA Instrument Rating Written Examination.