LOUISIANA TECH UNIVERSITY
Department of Professional Aviation

14 CFR 141 PILOT SCHOOL

INSTRUMENT RATING—AIRPLANE
TRAINING COURSE OUTLINE

October 15, 2008,
Revision 1, October 1, 2010
Revision 2, October 26, 1011
Revision 3, May 9, 2014
Revision 4, May 16, 2017
Revision 5, June 30, 2021
Revision 6, June 14, 2023

LIST OF EFFECTIVE PAGES

INSTRUMENT RATING—AIRPLANE TRAINING COURSE OUTLINE

Changes are highlighted with a vertical border.

Page	Revision
1-108	6

FAA APPROVED
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JOHN O SHAMBLIN
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LIST OF REVISED PAGES
Future revisions may be posted by pen-and-ink in the space provided.

DATE	REVISION #	PAGES AFFECTED

Summary of changes

Revision 6, June 14, 2023

Removed revision date from footer of document. It is clearly stated on the cover, and all pages are considered to be of the present revision.

TABLE OF CONTENTS. Added reference to FAA LOAs.

Ground syllabus. Replaced references to "computer knowledge testing" with "airman knowledge testing."

Flight syllabus. Deleted NDB approach as a gradable line item. Revised two briefing references formerly about NDB approach to read "bearing pointer-only approach."

Flight syllabus. Added two Units (and associated training hours) at the beginning of Stage 1: PRIVATE PILOT KNOWLEDGE CHECK and PRIVATE PILOT STANDARDS CHECK.

Flight syllabus. Lesson 2, APPROACHES SUB-STAGE CHECK, duration of ATD increased from 1.0 to 1.5 hours.

Flight syllabus. Revised Stage 2, Lesson 4, entitling it LESSON 4: PRACTICAL TEST PREPARATION. This lesson continues to include the FINAL INSTRUMENT STAGE CHECK, but that check is now preceded by INSTRUMENT KNOWLEDGE REVIEW and INSTRUMENT REVIEW FLIGHT, and followed by an oral Unit devoted to PRACTICAL TEST PREPARATION, all including associated training hours.

Flight syllabus. Adjusted flight training summary pages to reflect the above.

Revision 5, June 30, 2021

Entire document. Altered each instance of "FTD" to read "ATD."

Entire document. Altered each instance of "PTS" or "Practical Training Standards" to read "Airman Certification Standards (ACS)."

LEP. All pages are now listed as the current revision.

TRAINING FACILITIES AND LOCATIONS, Training Devices. Removed Frasca Level 6 Cessna flight training device (FTD) as an approved training device. Added Frasca International, Inc. Model Reconfigurable Training Device (RTD) (Cessna 172 G1000 NXi) as an approved training device.

GROUND STAGE 1, LESSON 3, CONTENT. Added Item 5, Integrated Flight Displays to reflect the modern textbook.

GROUND STAGE 2, LESSON 16, Item 12. Deleted an outdated reference to LORAN.

FLIGHT TRAINING SYLLABUS. Deleted multiple references to NDB/ADF, but retained NDB as a discussion item in Flight Stage 2, under "Special Syllabus." Deleted NDB approach as a testable item on stage checks.

FLIGHT STAGE 2, LESSON 3, Briefing areas. Deleted reference to DUATS, replaced with "electronic filing."

Revision 4, May 16, 2017

COURSEWARE AND REFERENCES. Deleted alphabetical suffixes from FAA publication series numbers. Added GARMIN *G1000 Integrated Flight Deck Pilot's Guide* and GIFD trainer software.

INSTRUMENT RATING-AIRPLANE COURSE PLANNED TRAINING TIMES. Revised "Key" at bottom to include ATD with FTD time. Clarified "*Note".

TRAINING FACILITIES AND LOCATIONS. Added Frasca Mentor 172 G1000 Advanced Aviation Training Device (AATD) as an approved training device.

FLIGHT STAGE 1, LESSON 1. Added special syllabus Item 1 requiring students without prior G1000 experience to complete additional training. Renumbered remaining items.

FS2, L1, UNITS 3 THROUGH 7: (7.0 HR FTD) INSTRUMENT APPROACH TRAINING. Deleted NDB Approach as a required maneuver item.

FS2, L3, UNITS 2 THROUGH 5: (9.5 HR DUAL) INSTRUMENT CROSS-COUNTRY TRAINING. Deleted NDB Approach as a required maneuver item.

Revision 3, May 9, 2014

Deleted "FLIGHT OPERATIONS" from cover page. Front matter changed. Deleted assistant chief instructor. Facilities updated with revised floor plan of the Flight Operations building. No material changes to maneuvers.

Revision 2, October 26, 2011

Flight Lessons have been broken into more Units per lesson. The purpose of this is reduce the number of sorties graded Incomplete. Incomplete should be used only if the sortie was truncated due to weather, maintenance, etc. There are no material changes to the maneuvers. Talon/ETA will reflect the additional sorties. Talon/ETA sorties may be "zero-time" completed, if the student has met standards and minimum time in less than the allotted sorties.

Revision 1, October1, 2010

This document is substantially revised. All pages are renumbered. Multiple typographical and formatting errors were corrected.

Front matter (Preface, Training Facilities pages, Table of Contents, etc.) is rewritten and rearranged. Drawings were revised.

Ground Training Course Outline is now called Ground Training Syllabus, but is largely unchanged for content. References are moved to the front matter. Although it remains available, Professional Aviation 239, Aviation Weather, is no longer considered an included stage of the Instrument Rating—Airplane Course.

Flight Training Course Outline is now called Flight Training Syllabus. Grading procedures are changed. Maneuvers and daily overall grades use the Unsatisfactory-Fair-Good-Excellent scheme, vice the former A-B-C-F. Only stage checks are now graded A-B-C-F. The layout has changed. Flight lessons are divided into units. Lesson contents are directed either by line items or by "Special Syllabus" requirements. To indicated which line items are considered required, the convention was adopted of marking them on the Unit page with a '+'.

The Flight Training Course is now comprised of two stages, vice the previous four. Stage One consolidates Basic Attitudes, Navigation, and Communication. Stage Two now includes the Approaches and Cross-country categories, with Approaches getting a "Sub-stage Check" instead of being a separate stage.

Net flight times for the course are unchanged. One hour of FTD training was moved from the first half to the second half.

PREFACE

Standardization of pilot training within the Louisiana Tech University Department of Professional Aviation is achieved by the use of the Private, Instrument, and Commercial Training Course Outlines (TCOs). This TCO outlines the training required by 14 CFR 141 to achieve the proficiency specified in the FAA Airman Certification Standards (ACS). It prescribes the course content, instructions to conduct the training, and the approximate time necessary to successfully complete all requirements. Each Louisiana Tech University TCO is divided into a Ground Training Syllabus and a Flight Training Syllabus. Ground training lesson times will be divided as appropriate to fit a normal college class schedule. Flight times indicated in the Flight Training Syllabus are planned times. Individual lesson times may be reduced or increased. Cross-country times will be, at minimum, those specified in 14 CFR 141. The final totals (dual and solo) will be no lower than those listed in the applicable Appendix to 14 CFR 141:

Private Pilot: 35 hours ground instruction, three hours cross-country, 35 hours total flight time, 20 hours dual, five hours solo, three hours night, three hours instrument, three hours in the 60 days preceding a practical test.

Instrument Rating: 30 hours ground instruction, 35 instrument flight training.

Commercial Pilot: 35 hours ground instruction, four hours cross-country, 120 hours total flight time, 55 hours dual, 10 hours solo, five hours night VFR, 10 hours in a complex or technically advanced airplane, 10 hours instrument, three hours in the 60 days preceding a practical test.

Students enrolled in Louisiana Tech Professional Aviation flight courses will be provided a copy of the TCO appropriate to their course. Instructors are required to use the TCO as a guide for ground and flight instruction. This assures that all required items are covered and that the training program has continuity based upon a building block approach. The Chief Instructor ensures that the TCOs are relevant, current, and comply with the Federal Aviation Administration requirements.

The TCOs are augmented by *FLIGHT OPERATIONS SAFETY PROCEDURES AND PRACTICES, POLICIES, AND STANDARD OPERATING PROCEDURES*, which is published as a separate document.

This Training Course Outline (TCO) is published solely for the use of The Department of Professional Aviation, Louisiana Tech University. The Department of Professional Aviation is owned and operated in the name of:

Louisiana Tech University, Department of Professional Aviation
P.O. Box 3181, Ruston, Louisiana 71272

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TABLE OF CONTENTS

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INSTRUMENT RATING—AIRPLANE TRAINING COURSE OUTLINE

COURSE OBJECTIVES

The student will obtain the aeronautical knowledge, skill, and experience to meet the requirements for an Instrument Rating—Airplane.

COURSEWARE AND REFERENCES:

Guided Flight Discovery Instrument Commercial Manual, Jeppesen Sanderson, Inc.
FAA Airman Certification Standards
AC 00-6 Aviation Weather
AC 00-45 Aviation Weather Services
AC 60-22 Aeronautical Decision Making
AC 61-65 Certification: Pilots and Flight Instructors
AC 61-84 Role of Preflight Preparation
AC 90-48 Pilots' Role in Collision Avoidance
AC 120-51 Crew Resource Management Training
FAA-H-8083-15 Instrument Flying Handbook
FAA-H-8083-1 Aircraft Weight and Balance Handbook
FAA-H-8083-3 Airplane Flying Handbook
FAA-H-8083-25 Pilot's Handbook of Aeronautical Knowledge
FAA-H-8083-27 Student Pilot Guide
Federal Aviation Regulations/Aeronautical Information Manual
Notices to Airmen
Louisiana Tech University Department of Professional Aviation *Flight Operations Safety Procedures and Practices, Policies, and Standard Operating Procedures*
Cessna 172 Pilot's Operating Handbook and Airplane Flight Manual
Applicable flight information publications
GARMIN *G1000 Integrated Flight Deck Pilot's Guide* and GIFD trainer software

INSTRUMENT RATING—AIRPLANE COURSE PLANNED TRAINING TIMES

TRAINING STAGE	GROUND	DU	SO	ATD	ORL	INST	XC
GROUND STAGE ONE	35.0						
GROUND STAGE TWO	35.0						
FLIGHT STAGE ONE		9.8	0.0	7.5	14.0	15.3	0.0
FLIGHT STAGE TWO		12.7	1.6	8.5	13.5	20.6	9.5
TOTALS	**70.0**	**22.5**	**1.6**	**16.0**	**27.5**	**35.9**	**9.5**

Key: GROUND: formal ground school (aeronautical knowledge training); DU: dual instruction in aircraft; SO: solo in aircraft; ATD: Aviation Training Device (simulator); ORL: oral instruction associated with flight training; INST: instrument time; XC: cross-country

Dual flight instruction and instruction in the ATD combine to meet or exceed the total instruction required by 14 CFR 141.

COURSE COMPLETION STANDARDS

The student must demonstrate to suitable authority through written, oral, and flight tests that he or she possesses the aeronautical knowledge and skill consistent with the Instrument Rating Airman Certification Standards (ASEL), as well as the ability to manage the risks of flight in order to act as pilot in command. Additionally, school records must reflect the experience requirements necessary are accomplished.

Louisiana Tech University
TRAINING FACILITIES

TRAINING FACILITIES AND LOCATIONS

1. Louisiana Tech University trains pilots at both the main campus in Ruston, LA, and at Louisiana Tech Flight Operations, Ruston Regional Airport. For description of rooms (size and maximum number of students), refer to pages 14-16.
2. Type training aids: Refer to page 15-17.
3. Aviation training devices (ATD):
    a. Frasca Mentor Cessna 172 advanced aviation training device (AATD) located in Davison Hall, Room 110.
    b. Frasca International, Inc. Model Reconfigurable Training Device (RTD) (Cessna 172 G1000 NXi) located in Davison Hall, Room 110.
4. Airports at which training flights originate: Ruston Regional Airport, which meets the requirements of 14 CFR 141.38.
    a. Description of facilities: Louisiana Tech Flight Operations is located at Ruston Regional Airport; the building contains suitable offices, a dispatch area, and numerous training rooms.
    b. Pilot briefing areas: Located in Louisiana Tech Flight Operations building and consist of planning area, cubicles, and a large class room.
5. Aircraft: Cessna 172R/172S airplanes will be used for all flight training in this course.
6. Minimum qualifications and ratings for each instructor assigned: FAA Instrument Ground Instructor Certificate or FAA Flight Instructor Certificate, with Instrument Rating.
7. This course is listed in the Louisiana Tech University catalog as Instrument Ground I (PRAV 240), Instrument Ground II (PRAV 241), Instrument Flight I (PRAV 242), and Instrument Flight II (PRAV 243).
8. Chief Instructor for the course: James Zachry Staten.

TRAINING RECORDS:
Louisiana Tech University maintains flight training records in accordance with 14 CFR 141.101. Academic records are maintained per University policy.

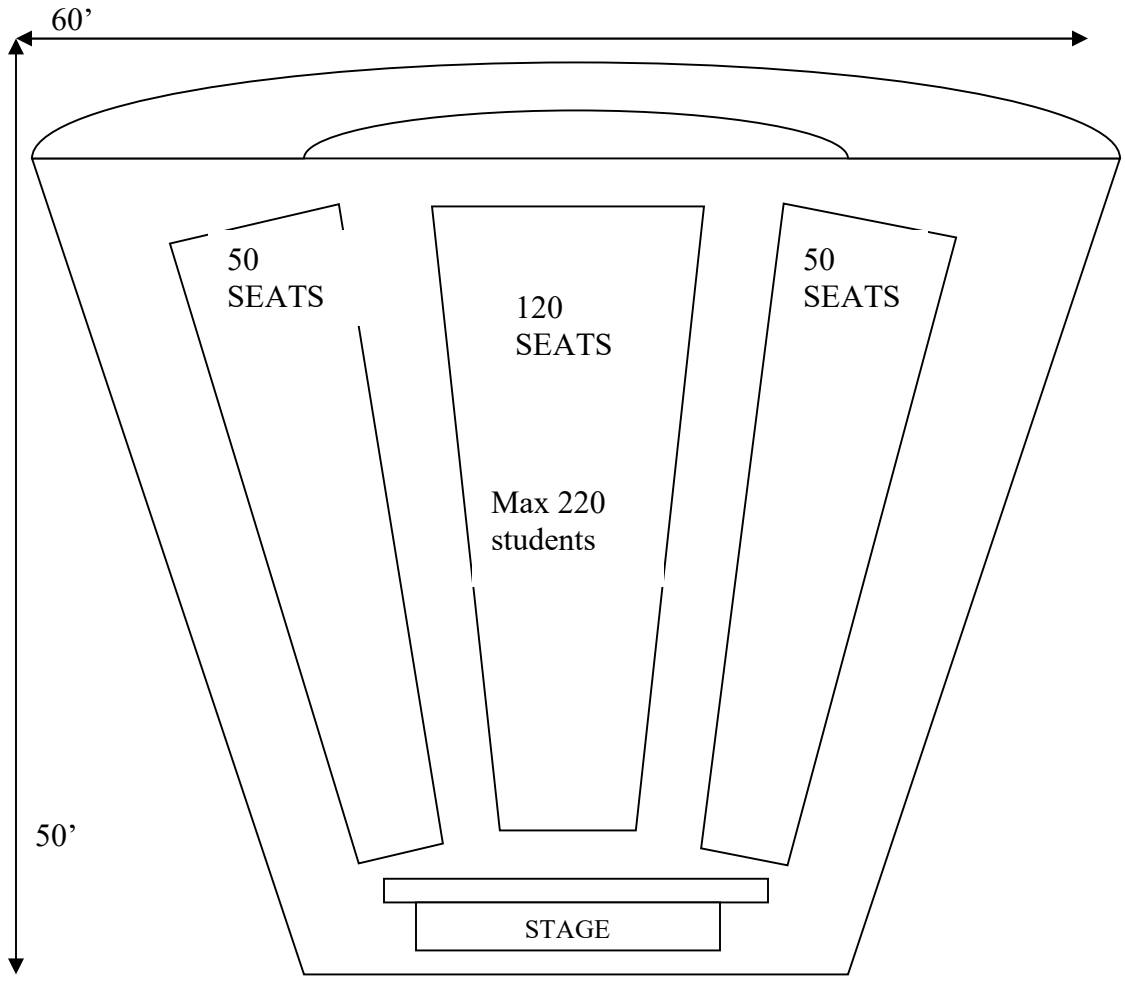
TALON: Talon Systems' Education and Training Administration (ETA) and Resource Management System (RMS) are web-based programs that assist in training management and record keeping. Talon/ETA supports all facets of training operations including curriculum management, instructor currencies, student training records, student accounting, resource management, resource planning, and scheduling and operations. This TCO and ETA will mirror each other. ETA typically refers to individual lesson activities as "Units", so that convention is used in the flight syllabus portion of the TCO.

While printing gradesheets can be done from Talon/ETA, only completed stage checks will be printed. Daily flight training course lessons will be input and maintained online, in Talon. Upon request from the FAA or the student, a full set of paper daily training lesson gradesheets will be provided for any student.

In the event of local Internet outage, instructors will print and use the applicable TCO page as a manual gradesheet (with subsequent input to Talon).

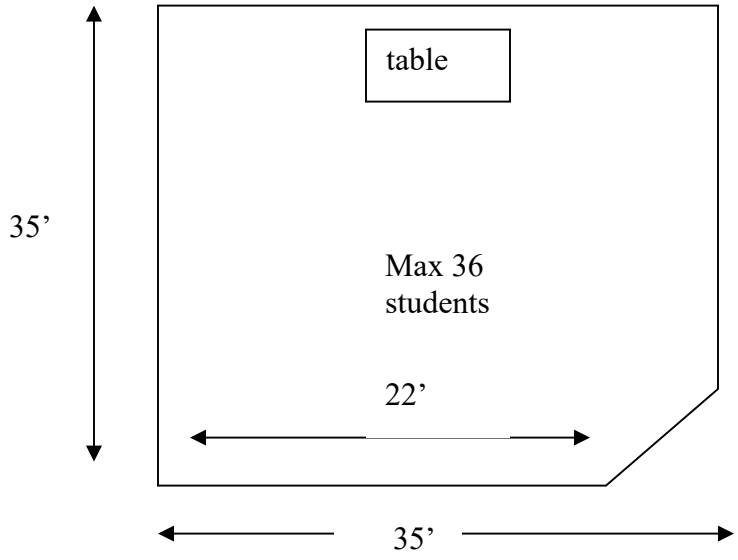
BUILDINGS/ROOMS

Main LTU Campus, Davison Hall, Room 113



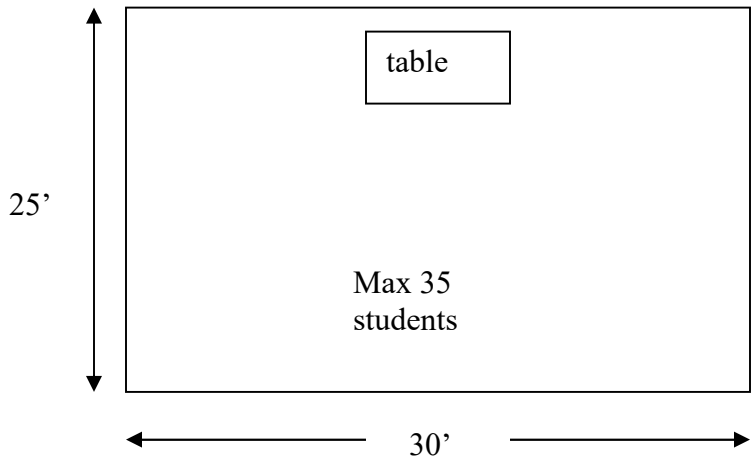
This room is used for safety meetings and other events of the Aviation Department. It is equipped with overhead projector, white board, computer, and TV/DVD/VCR player.

Main LTU Campus, Davison Hall, Room 310



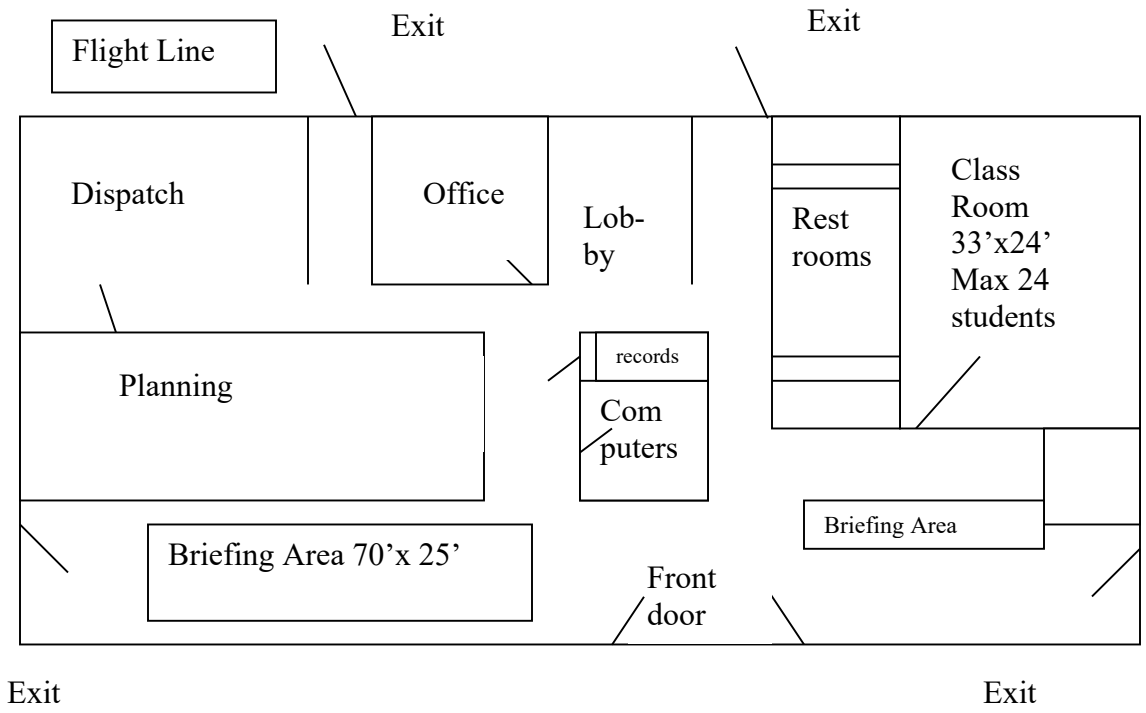
This room is used for larger classes and other events of the Aviation Department. It is equipped with blackboard, overhead projector, white board, computer, and TV/DVD/VCR player.

Main LTU Campus, Davison Hall, Room 305



This room is used for smaller classes and other events of the Aviation Department. It is equipped with blackboard and TV/DVD/VCR player.

Louisiana Tech University Flight Operations building, Ruston Regional Airport



INSTRUCTOR QUALIFICATIONS

CHIEF INSTRUCTOR:

1. Is responsible for all instructor, dispatcher, and student training.
2. Will have and maintain the qualifications identified in Part 141.35.
3. Will accomplish a flight instructor refresher course annually.
4. Will be qualified as a Check Instructor.
5. Will conduct stage checks, end-of-course tests, and instructor proficiency checks.
6. Will supervise all Assistant Chief Instructor(s), Check Instructors, Flight Instructors, Ground Instructors, and Dispatchers.
7. Is titled by the University as Director of Flight Education.

ASSISTANT CHIEF INSTRUCTOR(S):

1. Will have and maintain the qualifications identified in Part 141.36.
2. Will conduct stage checks, end-of-course tests, and instructor proficiency checks.
3. Will be qualified as a Check Instructor.
4. Will perform other duties as directed by the Chief Instructor.
5. Is empowered to sign or certify students' training records, graduation certificates, stage check/test reports, and course completions.

CHECK INSTRUCTORS:

1. Will conduct stage checks, end-of-course tests, and instructor proficiency checks.
2. Will have and maintain the qualifications indentified in Part 141.37.
3. Will maintain all the qualifications of Flight Instructor.
4. Will perform other duties as directed by the Chief Instructor.

FLIGHT INSTRUCTORS:

1. Take initial and recurrent proficiency checks with the Chief Instructor or Assistant
2. Will be FAA-certificated flight instructors.
3. Will maintain a current Airman Medical Certificate.
4. Will conduct student flight training as authorized.
5. Will perform other duties as directed by the Chief Instructor.
6. Will be instrument-rated instructors.

GROUND INSTRUCTORS:

1. Will maintain the qualifications identified in Part 141.33 (personnel) and 141.81 (ground instructor).

DISPATCHERS:

1. Will hold a Private Pilot certificate.
2. Will be trained by the Chief Instructor or his Assistant in accordance with Part 141.33.

GROUND TRAINING SYLLABUS
COURSE REQUIREMENTS AND OBJECTIVES

ENROLLMENT PREREQUISITES: Students enrolling in the Instrument Rating—Airplane ground course must enroll as a student at Louisiana Tech University. The student must have completed PRAV 102, Private Pilot Ground II, or hold a Private Pilot certificate.

GROUND TRAINING COURSE OBJECTIVE: The student will develop aeronautical knowledge in the areas specified by 14 CFR 141, Appendix C. Graduates of the ground course should have a sound acquaintance with the principles of instrument flight, the flight environment, meteorology, aircraft performance, and planning and navigation.

GROUND TRAINING CURRICULUM: Ground school for the Instrument Rating—Airplane student consists of two Professional Aviation (PRAV) courses at Louisiana Tech University. Stage One correlates to Instrument Pilot Ground I (PRAV 240) and Stage Two correlates to Instrument Pilot Ground II (PRAV 241). PRAV 240 requires 35 classroom hours and PRAV 241 requires 35 classroom hours. Completion of these courses will result in 70 class hours and six college credit hours. An outline for each lesson is provided below.

GROUND TRAINING TEXTBOOK: The ground training course is structured by the *Guided Flight Discovery* Instrument Commercial Manual, Jeppesen Sanderson, Inc. Ground training lessons generally follow the sequence and content of this textbook. Other reference materials may be deemed required by the instructor.

GROUND TRAINING COURSE COMPLETION STANDARDS: The ground training course will be complete when the student demonstrates aeronautical knowledge that meets or exceeds those standards outlined in the Instrument Rating Airman Certification Standards (ACS) and passes the FAA Instrument Rating Knowledge Test.

GROUND STAGE ONE TRAINING SUMMARY

LESSON	HOURS
1 INSTRUMENT TRAINING AND OPPORTUNITIES	0.5
2 ADVANCED HUMAN FACTORS	1.0
3 FLIGHT INSTRUMENT SYSTEMS	2.5
4 ATTITUDE INSTRUMENT FLYING	2.5
5 INSTRUMENT NAVIGATION	2.5
6 AIRPORTS AIRSPACE AND FLIGHT INFORMATION	2.5
7 AIR TRAFFIC CONTROL SYSTEM	2.5
8 ATC CLEARANCES	2.5
9 REVIEW	1.0
10 MID-TERM TEST AND EVALUATION	1.0
11 DEPARTURE CHARTS	2.5
12 DEPARTURE PROCEDURES	2.5
13 ENROUTE AND AREA CHARTS	2.5
14 ENROUTE PROCEDURES	2.5
15 HOLDING PROCEDURES	2.5
16 ARRIVAL CHARTS	1.0
17 ARRIVAL PROCEDURES	1.0
18 REVIEW	1.0
19 FINAL EXAM	1.0
TOTAL HOURS PRAV 240/ GROUND STAGE ONE	**35**

GROUND STAGE TWO TRAINING SUMMARY

LESSON	HOURS
1 APPROACH CHARTS	2.5
2 APPROACH PROCEDURES	2.5
3 VOR AND NDB APPROACHES	2.5
4 ILS APPROACHES	2.5
5 RNAV APPROACHES	2.5
6 REVIEW	1.0
7 MID-TERM TEST AND EVALUATION	1.0
8 WEATHER FACTORS	2.5
9 WEATHER HAZARDS	2.5
10 PRINTED REPORTS AND FORECASTS	2.5
11 GRAPHIC WEATHER PRODUCTS	1.0
12 SOURCES OF WEATHER INFORMATION	1.0
13 IFR EMERGENCIES	2.5
14 IFR DECISION MAKING	2.5
15 IFR FLIGHT PLANNING	2.5
16 REVIEW	1.0
17 FINAL EXAM (FAA KNOWLEDGE TEST	2.5
TOTAL HOURS PRAV 241/ GROUND STAGE TWO	**35**

PROFESSIONAL AVIATION 240
INSTRUMENT PILOT GROUND I: STAGE ONE GROUND TRAINING

OBJECTIVES: This is the first half of a two-part ground school in preparation for the Instrument Rating—Airplane. The objective of Ground Stage One is to teach basic elements of instrument flight to include the airplane flight instruments and navigation equipment, the ground-based navigation facilities and aids, and basic attitude instrument flying.

COMPLETION STANDARDS: The student should complete this stage with a working knowledge of the principles and operation of the airplane flight instruments and the equipment and facilities that are required for instrument flight. The student's understanding will be determined by intermediate and final written examinations given during this ground training course.

GROUND STAGE 1, LESSON 1: (0.5 HOURS) INSTRUMENT TRAINING AND OPPORTUNITIES

OBJECTIVES: The objective is to inform the student of the class procedures, requirements, objectives, and study references. This lesson is intended to encourage the student to achieve the instrument rating as well as inform them of the regulatory requirements for the rating. The lesson also informs the student on the requirements for maintaining currency, record requirements, airplane documentation, and airplane instrumentation requirements.

CONTENT:

1. FAR for IFR flight operations
2. Aeronautical Information Manual
3. Instrument Flight
4. Why an Instrument Rating
5. Currency

COMPLETION STANDARDS: The student should commence acquiring the required reference material for the course. He/she should be knowledgeable of the requirements for an instrument rating and the airplane documentation and equipment requirements.

GROUND STAGE 1, LESSON 2: (1 HOUR) ADVANCED HUMAN FACTORS

OBJECTIVES: This lesson provides the student with advanced concepts of aeronautical decision-making.

CONTENT:

1. Aeronautical Decision Making
2. Crew Resource Management
3. The Decision-Making Process
4. Pilot-In-Command Responsibility (Decision making and judgment – ADM)
5. Communication
6. Resource Use
7. Workload Management (Crew Resource Management)
8. Situational Awareness
9. Aviation Physiology
10. Safe Instrument Operations

COMPLETION STANDARDS: This lesson is complete when the student demonstrates knowledge of the advanced concepts of aeronautical decision-making. He/she should be able to recognize the hazardous attitudes and know the possible antidotes. The student should be able to comprehend the significant psychological and environmental factors that influence behavior and know the means to avoid or minimize the risks associated with these factors.

GROUND STAGE 1, LESSON 3: (2.5 HOURS) FLIGHT INSTRUMENT SYSTEMS

OBJECTIVES: The objective is to instruct the student on the operating principles, displays, limitations, and preflight checks of all of the aircraft flight instruments.

CONTENT:

1. Gyroscopic Flight Instruments
2. Instrument Checks
3. Magnetic Compass
4. Pitot-Static Instruments
5. Integrated Flight Displays

COMPLETION STANDARDS: The student must be knowledgeable of the basic operating principles of the airplane flight instruments.

GROUND STAGE 1, LESSON 4: (2.5 HOURS) ATTITUDE INSTRUMENT FLYING

OBJECTIVES: The objective is to prepare the student for the flight and simulator lessons on basic attitude instrument flying.

CONTENT:

1. Fundamental Skills
2. Attitude Instrument Flying Concepts
3. Basic Flight Maneuvers
4. Coping with Instrument Failure
5. Partial Panel Flying
6. Unusual Attitude Recovery
7. Stalls
8. Control and Performance Concept

COMPLETION STANDARDS: Students are required to know the basic instrument cross check techniques for both the primary and supporting and the control and performance concepts for attitude instrument flying.

GROUND STAGE 1, LESSON 5: (2.5 HOURS) INSTRUMENT NAVIGATION

OBJECTIVES: This lesson focuses on the principles of operation and the use of the VOR, ADF, DME, RNAV, FMS, INS, and GPS.

CONTENT:

1. VOR Navigation
2. ADF Navigation
3. Distance Measuring Equipment
4. Operational Considerations
5. Area Navigation
6. Flight Management System
7. Inertial Navigation System
8. Global Positioning System

COMPLETION STANDARDS: The student should complete this lesson with an understanding of the operation and use of the VOR, ADF, DME, RNAV, FMS, INS, and GPS systems.

GROUND STAGE 1, LESSON 6: (2.5 HOURS) AIRPORTS, AIRSPACE, AND FLIGHT INFORMATION

OBJECTIVES: The objective of this lesson is to instruct the student on airport facilities, markings, and lighting along with runway incursion avoidance procedures.

CONTENT:

1. The Airport Environment
2. Runway Incursion Avoidance
3. Airspace
4. Flight Information

COMPLETION STANDARDS: The student is expected to be knowledgeable on the types and interpretation of airport facilities that support instrument flight operations, and should know how to avoid runway incursions.

GROUND STAGE 1, LESSON 7: (2.5 HOURS) AIR TRAFFIC CONTROL SYSTEM

OBJECTIVES: The objective is to teach the basic operating principles of radar and the airplane transponder. Additionally, the student will be introduced to the different types of ATC facilities.

CONTENT:

1. Air Route Traffic Control Center
2. Terminal Facilities

COMPLETION STANDARDS: The student should complete this lesson with an understanding of the basic operating principles of radar and the transponder, along with the different types of ATC facilities.

GROUND STAGE 1, LESSON 8: (2.5 HOURS) ATC CLEARANCES

OBJECTIVES: The objective of this lesson is to teach the student about ATC clearances including their responsibility, how to read back clearances, and how to use short hand in receiving clearances.

CONTENT:

1. Pilot Responsibilities
2. IFR Flight Plan and ATC Clearance
3. Clearance Readback
4. Clearance Shorthand

COMPLETION STANDARDS: The student should understand ATC clearances, their responsibility, how to read back clearances, and the use of shorthand.

GROUND STAGE 1, LESSON 9: (1.0 HOUR) REVIEW

OBJECTIVES: The objective of this lesson is to review, assimilate, and highlight the information covered thus far.

CONTENT:

1. Human factors/ADM
2. Instruments
3. Navigation
4. Airspace
5. ATC and clearances

COMPLETION STANDARDS: The student should have a working knowledge of the listed content, and be prepared to test on it.

GROUND STAGE 1, LESSON 10: (1 HOUR) MID-TERM TEST AND EVALUATION

OBJECTIVES: This test complies with the university requirement to provide the students with an evaluation and notification of standing prior to the course drop date. Additionally, it provides an incentive for the student to assimilate the material covered in the first lessons.

CONTENT:
The examination shall, as a minimum, consist of at least 50 FAA written examination type multiple-choice questions.

COMPLETION STANDARDS: Grading is based on the traditional scale where 90% to 100% equals an "A", 80% to 89% equals a "B", 70% to 79% equals a "C", 60% to 69% equals a "D", and below 60% is a failure.

GROUND STAGE 1, LESSON 11: (2.5 HOURS) DEPARTURE CHARTS

OBJECTIVES: The objective is to teach the student to find and interpret instrument departure procedures.

CONTENT:

1. Obtaining Charts
2. Departure Standards
3. Instrument Departure Procedures
4. Departure Options
5. Selecting a Departure Method

COMPLETION STANDARDS: The student is expected to be able to interpret departure procedure charts, discerning among the various types.

GROUND STAGE 1, LESSON 12: (2.5 HOURS) DEPARTURE PROCEDURES

OBJECTIVES: The objective is to review various departure options.

CONTENT:

1. Graphic, textual, and radar Instrument Departure Procedures
2. Takeoff Minimums
3. Departure Options
4. Obstacle clearance

COMPLETION STANDARDS: The student is expected to interpret departure procedures, and to understand their necessity.

GROUND STAGE 1, LESSON 13: (1 HOUR) ENROUTE AND AREA CHARTS

OBJECTIVES: The objective is to instruct the student on the elements of an IFR flight from level off to the feeder or initial approach fix. Emphasis is on IFR communication/navigation, en route instrument flight regulatory requirements, and IFR terminology.

CONTENT:

1. Enroute Charts
2. Area Charts
3. Enroute Radar Procedures
4. IFR Cruising Altitudes
5. Descending from the Enroute Segment

COMPLETION STANDARDS: The student must be able to interpret the IFR en route charts, including symbology/terminology.

GROUND STAGE 1, LESSON 14: (2.5 HOURS) ENROUTE PROCEDURES

OBJECTIVES: The objective is to instruct the student on the elements of an IFR flight from level off to the feeder or initial approach fix. Emphasis is on IFR communication/navigation, enroute instrument flight regulatory requirements, and IFR terminology.

CONTENT:

1. Enroute Charts
2. Area Charts
3. Enroute Radar Procedures
4. IFR Cruising Altitudes
5. RNP
6. RVSM
7. Descending from the Enroute Segment

COMPLETION STANDARDS: The student must display a knowledge the various elements required during the en route phase of an IFR flight, to include navigation and communication procedures. He/she must be able to interpret the IFR enroute charts and use the correct radio terminology.

GROUND STAGE 1, LESSON 15: (2.5 HOURS) HOLDING

OBJECTIVES: The objective of this lesson is to provide the student with knowledge of holding procedures including holding pattern entries and ATC communications.

CONTENT:

1. The Standard Holding Pattern
2. Holding Pattern Entries
3. ATC Holding Instructions

COMPLETION STANDARDS: This lesson will be completed when the student demonstrates knowledge of holding patterns, holding entries, and holding instructions.

GROUND STAGE 1, LESSON 16: (1.0 HOUR) ARRIVAL CHARTS

OBJECTIVES: The objective of this lesson is to familiarize the student with IFR arrival charts.

CONTENT:

1. Standard Terminal Arrival Route
2. Interpreting the STAR
3. Preparing for the arrival

COMPLETION STANDARDS: The student will demonstrate familiarity with arrival charts.

GROUND STAGE 1, LESSON 17: (1.0 HOUR) ARRIVAL PROCEDURES

OBJECTIVES: The objective of this lesson is to instruct the student on IFR arrival procedures.

CONTENT:

1. Standard Terminal Arrival Route
2. Interpreting the STAR
3. Preparing for the arrival

COMPLETION STANDARDS: This lesson will be complete when the student has knowledge of IFR arrival procedures.

GROUND STAGE 1, LESSON 18: (1 HOUR) REVIEW

OBJECTIVES: This period provides time to recap the information covered during the course and to assist the student in preparing for the final stage exam.

CONTENT:
The instructor will review the major areas for each lesson, to include human factors, flight instruments, the ATC system, and departure, enroute, and arrival procedures.

COMPLETION STANDARDS: The student is expected to complete this lesson with refreshed knowledge of the IFR procedures covered thus far. He/she should be prepared to accomplish a home review in preparation for the final stage exam.

GROUND STAGE 1, LESSON 19: (1 HOUR) FINAL EXAM

OBJECTIVES: This test provides an opportunity for the student to demonstrate their aeronautical knowledge.

CONTENT:
The examination shall at a minimum, consist of at least 50 FAA airman knowledge examination type multiple-choice questions.

COMPLETION STANDARDS: Grading for the course is based on the traditional scale where 90% to 100% equals an "A", 80% to 89% equals a "B", 70% to 79% equals a "C", 60% to 69% equals a "D" and below 60% is a failure. Professional Aviation Majors must receive a minimum grade of "C" for this course. Failure to do so requires that the course be repeated.

PROFESSIONAL AVIATION 241
INSTRUMENT PILOT GROUND II: STAGE TWO GROUND TRAINING

OBJECTIVES: This is the second half of a two-stage instrument ground training course. This stage emphasizes "application". It focuses on FAA regulations and publications pertinent to IFR flight operations, advanced techniques and procedures for IFR flights, how to cope with equipment failures and in-flight emergencies while on an IFR flight. The student will be instructed on all of the elements of planning and executing an IFR flight. Instrument approaches are a major focus, as is weather and its impacts.

COMPLETION STANDARDS: The student must understand how to plan and execute an IFR flight. This includes compliance with IFR regulations and procedures, chart interpretation and instrument navigation. The student's understanding will be evaluated by intermediate and final written examinations given during this ground training course, and by their score on the FAA Instrument Rating Knowledge Test. The stage is complete when the student passes the final airman knowledge exam with a minimum score of 70% reconciled to 100%. Professional aviation majors must receive a minimum overall grade of 70% or the course must be repeated.

GROUND STAGE 2, LESSON 1: (2.5 HOURS) APPROACH CHARTS

OBJECTIVES: The objective of this lesson is to instruct the student on instrument approach charts.

CONTENT:

1. Approach Segments
2. Chart Layout
3. Symbology

COMPLETION STANDARDS: This lesson will be complete when the student has knowledge of instrument approach charts.

GROUND STAGE 2, LESSON 2: (2.5 HOURS) APPROACH PROCEDURES

OBJECTIVES: The objective is to instruct the student on the elements of an instrument approach using both precision and non-precision procedures. The primary focus of this lesson is the interpretation of instrument approach procedure charts and the flight procedures from the final approach fix to a landing or missed approach.

CONTENT:

1. Preparing for the Approach
2. Executing the Approach
3. Missed Approach Procedures
4. Visual and Contact Approaches

COMPLETION STANDARDS: The student must be able to perform all of the elements required during the final approach phase of an IFR flight. He/she must be familiar with the procedures for both precision and non-precision instrument approaches and be able to correctly interpret the instrument approach charts for these approaches.

GROUND STAGE 2, LESSON 3: (2.5 HOURS) VOR AND NDB APPROACHES

OBJECTIVES: This lesson focuses on the principles and operation of the VOR and NDB airborne and ground equipment. The primary objective is to instruct the student on how to operate the airplane receiver, use the VOR and NDB for IFR navigation, and test the equipment for correct indications.

CONTENT:

1. VOR Approaches
2. NDB Approaches

COMPLETION STANDARDS: The student exhibits comprehension of VOR and NDB equipment and their use in non-precision approaches.

GROUND STAGE 2, LESSON 4: (2.5 HOURS) ILS APPROACHES

OBJECTIVES: The objective is to instruct the student on the equipment principles of operation, and to know the components of the ILS system as well as how inoperative components affect ILS approach minimums. The student will be instructed on the categories and types of ILS ground equipment.

CONTENT:

1. ILS Categories and Minimums
2. ILS Components
3. Flying the ILS
4. ILS Approach with a Course Reversal
5. ILS/DME Approach
6. Radar Vectors to ILS Final
7. ILS Approaches to Parallel Runways
8. Simultaneous Converging Instrument Approach
9. Localizer Approach
10. Localizer Back Course Approach
11. LDA, SDF, and MLS Approaches

COMPLETION STANDARDS: The student must know the operation and limitations of the ILS.

GROUND STAGE 2, LESSON 5: (2.5 HOURS) RNAV APPROACHES

OBJECTIVES: The objective is to introduce the student to the more advanced and sophisticated navigation equipment.

CONTENT:

1. Approach Design
2. GPS Approaches
3. Lateral Navigation/Vertical Navigation
4. GPS Equipment Requirements
5. The Navigation Database
6. Special GPS Navigation Considerations
7. GPS Overlay Approach
8. GPS Stand Alone Approach
9. Radar Vectors to a GPS Approach
10. VOR/DME RNAV

COMPLETION STANDARDS: The student should complete this lesson with an understanding of the basic principles of operation, advantages and limitations of RNAV and GPS systems.

GROUND STAGE 2, LESSON 6: (2 HOURS) MID-TERM REVIEW

OBJECTIVES: The objectives of this lesson are to review all material covered during this course and prepare the student for the mid-term exam.

CONTENT: The instructor will walk the students through the lesson outlines as presented during the course and review the major areas for each lesson.

COMPLETION STANDARDS: The student is expected to complete this lesson with sufficient knowledge of the material covered up to this point in the course to be able to pass the mid-term exam.

GROUND STAGE 2, LESSON 7: (1 HOUR) MID-TERM TEST AND EVALUATION

OBJECTIVES: This test complies with the university requirement to provide the students with an evaluation and notification of standing prior to the course drop period. Additionally, it provides an incentive as well as an opportunity for the student to assimilate the material covered in the first ten lessons.

CONTENT:
The examination shall, as a minimum, consist of at least 50 FAA airman knowledge examination type multiple-choice questions.

COMPLETION STANDARDS: Grading is based on the traditional scale where 90% to 100% equals an "A", 80% to 89% equals a "B", 70% to 79% equals a "C", 60% to 69% equals a "D", and below 60% is a failure.

GROUND STAGE 2, LESSON 8: (2.5 HOURS) WEATHER FACTORS

OBJECTIVES: The objective of this lesson is to provide the student with knowledge of weather factors.

CONTENT:

1. The Atmosphere
2. Atmospheric Circulation
3. Moisture, Precipitation, and Stability
4. Airmass
5. Fronts
6. High Altitude Weather

COMPLETION STANDARDS: This lesson will be completed when the student understands the weather factors covered in this lesson.

GROUND STAGE 2, LESSON 9: (2.5 HOURS) WEATHER HAZARDS

OBJECTIVES: The objective of this lesson is to introduce the student to weather hazards.

CONTENT:

1. Thunderstorms
2. Turbulence
3. Wind Shear
4. Low Visibility
5. Volcanic Ash
6. Icing
7. Hydroplaning
8. Cold Weather Operations

COMPLETION STANDARDS: This lesson will be completed when the student understands the weather hazards covered.

GROUND STAGE 2, LESSON 10: (2 HOURS) PRINTED REPORTS AND FORECASTS

OBJECTIVES: The objective of this lesson is to brief the student on the types of printed weather reports and forecasts and how to interpret them.

CONTENT:

1. Printed Weather Reports
2. Printed Weather Forecasts
3. Severe Weather Reports and Forecasts

COMPLETION STANDARDS: This lesson will be completed when the student has knowledge of printed weather reports and forecasts.

GROUND STAGE 2, LESSON 11: (1 HR) GRAPHIC WEATHER PRODUCTS

OBJECTIVES: The objective of this lesson is to brief the student on the types of graphic reports and forecasts and how to interpret them.

CONTENT:

1. Graphic Reports
2. Graphic Forecasts

COMPLETION STANDARDS: This lesson will be completed when the student has knowledge of graphic reports and forecasts.

GROUND STAGE 2, LESSON 12: (1 HOUR) SOURCES OF WEATHER INFORMATION

OBJECTIVES: The objective of this lesson is to brief the student on the sources of weather information and weather services available.

CONTENT:

1. Preflight Weather Sources
2. In-Flight Weather Sources
3. Weather Radar Services
4. Automated Surface Weather Reporting Systems
5. Airborne Weather Equipment

COMPLETION STANDARDS: This lesson will be completed when the student has knowledge of the sources of weather information as well as the weather services available.

GROUND STAGE 2, LESSON 13: (2.5 HOURS) IFR EMERGENCIES

OBJECTIVES: The objective of this lesson is to brief the student on IFR emergency procedures.

CONTENT:

1. Declaring an Emergency
2. Emergency Approach Procedures
    a. Minimum fuel
    b. Instrument failure
    c. Communication failure.

COMPLETION STANDARDS: This lesson will be completed when the student has knowledge of IFR emergency procedures.

GROUND STAGE 2, LESSON 14: (2.5 HOURS) IFR DECISION MAKING

OBJECTIVES: The objective of this lesson is to discuss and explain the decision making process used during instrument flight.

CONTENT:

1. Applying the Decision-Making Process
2. Pilot-In-Command Responsibility
3. Communication
4. Resource Use
5. Workload Management
6. Situational Awareness
7. The Application of the Decision-Making Process

COMPLETION STANDARDS: This lesson will be completed when the student has knowledge of the decision making process for instrument flight.

GROUND STAGE 2, LESSON 15: (2.5 HOURS) IFR FLIGHT PLANNING

OBJECTIVES: The objective of this lesson is to introduce to the student how to plan for an IFR flight.

CONTENT:

1. Flight Overview
2. Flight Planning
3. Completing the Navigational Log
4. Filing the Flight Plan
5. Closing the IFR Flight Plan

COMPLETION STANDARDS: This lesson will be completed when the student has knowledge relating to IFR flight planning and demonstrates ability to plan an IFR flight correctly and accurately.

GROUND STAGE 2, LESSON 16: (1 HOUR) REVIEW

OBJECTIVES: This lesson serves as a final review of the Instrument Rating—Airplane Ground Training Course. The objective is to assist the student in preparing for the FAA Instrument Knowledge Examination.

CONTENT:

1. E6B Computer problems for the instrument rating
    A. Time and distance
    B. Wind problems
    C. Calibrated/true airspeed computations
2. The flight plan equipment code
3. IFR communications
4. VOR receiver check
5. The Airport/Facility Directory
6. VOR service volumes
7. Airport operating hours
8. Low altitude enroute charts
9. VOR navigation
    A. RMI indicator
    B. The OBS
    C. The HSI
10. Departure Procedures (DPs)
    A. Determining DP climb rates
    B. Corresponding enroute chart references for the DP
11. Standard Terminal Arrival Routes (STARs)
    A. Determining the starting point
    B. STAR communication information
12. Instrument approach procedures
    A. RNAV waypoints
    B. RNAV with vertical guidance
13. The DME ARC approach
14. Computing the rate of descent for the approach
15. Minimum Descent Altitude (MDA)
16. The missed approach
17. Touchdown zone elevations
18. The ILS approach
    A. Communications capability
    B. Marker beacon indications
    C. Approach lighting

COMPLETION STANDARDS: The student should be prepared for his/her Instrument Knowledge Test.

GROUND STAGE 2, LESSON 17: (2.5 HOURS) FINAL EXAM

OBJECTIVES: The Instrument Pilot Ground School is completed with the successful accomplishment of the FAA Instrument Rating Knowledge Test.

CONTENT:
The examination will be administered as scheduled in the Professional Aviation computer lab. Students must register and pay the test fee.

The examination consists of multiple-choice type questions with three choices.

COMPLETION STANDARDS: Grading for the course is based on the traditional scale where 90% to 100% equals an "A", 80% to 89% equals a "B", 70% to 79% equals a "C", 60% to 69% equals a "D" and below 60% is a failure. Students scoring less than 70% on the knowledge test must have additional instruction before being endorsed to re-take it.

FLIGHT TRAINING SYLLABUS

REQUIREMENTS AND OBJECTIVES

FLIGHT TRAINING COURSE OBJECTIVE: The student will obtain the aeronautical knowledge, skill, and experience necessary to be awarded an Instrument Rating—Airplane. The intent of Louisiana Tech University flight training is to produce a pilot who displays basic airmanship, to include competence, precision, and judgment.

ENROLLMENT PREREQUISITES: Students enrolling in the Instrument Rating flight course need an Airman Medical Certificate and a Private Pilot Certificate, and completion of or concurrent enrollment in Instrument Rating ground school. Students must enroll as a student at Louisiana Tech University, and satisfy the requirements of 49 CFR 1552.

FLIGHT TRAINING CURRICULUM: Flight school for the Instrument Rating student is divided into two stages. Each stage is a Professional Aviation course at Louisiana Tech University. Stage One correlates to PRAV 242, Stage Two correlates to PRAV 243. Completion of these courses will result in two college semester credit hours. Students will accomplish all syllabus-directed training unless omission is approved by the Chief Instructor.

COURSE COMPLETION STANDARDS: Completion standards equate to "desired learning outcome(s)." The student must demonstrate through flight tests and school records that the aeronautical knowledge, skill, and experience requirements necessary to obtain an Instrument Rating are attained.

BRIEFING/DEBRIEFING: A standard briefing and debriefing time of one-half hour (total) is assumed to be associated with each aviation training device (ATD) sortie and each dual sortie. This is charged to the student as Oral, but is not listed on the lesson outline pages. If Oral is specifically listed with a given unit, the time is intended as one-on-one ground instruction, over and above normal brief/debrief time.

SYLLABUS LAYOUT: The syllabus is divided into Stages. The flight syllabus differs from the ground syllabus. Each Stage is divided into Lessons, which are then subdivided into individual activities, referred to as Units. The units support the objectives and standards, which are listed on the lesson pages.

NOTE: The lessons in the Instrument flight syllabus are formed as set numbers of hours (of ATD, dual, oral, etc.), with the amount of time and type of instruction listed in parentheses after the unit designator. The number of unit repeats needed to achieve the aeronautical experience will vary. In some units, instructors are offered flexibility to vary the number of sorties and repetitions, as long as the standards are met, and the required minimum flight hours are accomplished. If all plus-items are covered, and all time minimums are met, then the unit is completed in Talon/ETA.

SPECIAL SYLLABUS ITEMS: Discussion items or maneuvers that fall outside of the areas of operation listed on the grade sheet are called "special syllabus." Refer to the Lesson page.

AREAS OF OPERATION / UNIT CONTENTS: Items listed on the gradesheets with a "+" are those items intended to be emphasized in a given unit. Items for which a standard must be met will appear on the gradesheet. If the "plus-items" of a unit are not covered (and not marked on the gradesheet), Talon/ETA will not allow lesson completion. (See "Incomplete" below.)

Situational awareness, basic aircraft control, and general knowledge. Airmanship is key to pilot competency, and will be graded on each sortie. Airmanship encompasses situational awareness and judgment. Likewise, instructors will continuously sample the student's general knowledge, which will also be graded. These will appear on every flight and ATD gradesheet. Basic aircraft control refers to general holding of altitude, airspeed, and heading.

AREAS OF OPERATION: The following areas of operation will be graded. Every item will appear on every Unit page in the flight syllabus. There are two methods of directing Unit contents: "special syllabus" and "plus-items". Special syllabus requirements will require reference to the TCO, and usually will be graded NG upon completion. Items which must be covered on a given unit will have a minimum grade and "+", e.g. U+, F+, G+. (Grading scales are defined below.) All plus-items must be graded "Good" prior to course graduation. Items required will be reflected in Talon/ETA.

Preflight Preparation
Ground Operations
Takeoff
Departure
Steep Turns
Enroute Descent
Traffic Pattern
Landing
Night Operations
Basic Instrument Maneuvers
Unusual Attitudes
Touch-and-Go
Go-around / Missed approach
Use of Navigation Systems
Holding
Procedure Turn/Procedural Track
GPS Approach
ILS Approach
Localizer Approach
VOR Approach
Circling Approach
Transition to Landing
Communication
Checklist Procedures
Risk Management / Decision Making
Task Management
Situational Awareness

Emergency Procedures
General Knowledge
Basic Aircraft Control
Special Syllabus Requirements

GRADING INSTRUCTIONAL LESSONS:

There are two methods of grading student performance: an absolute grading scale for rating individual maneuver items, and a relative grading scale for assessing overall sortie performance.

Absolute Grading Scale
Instructors judge the student's maneuver performance against the Pilot Training Standards. Grades are based on the student's characteristic performance. This grade does not consider the student's type and amount of training.

Maneuver Grades Description
No Grade (NG) Enter NG on the record of training when the maneuver is demonstrated by an instructor pilot on a dual sortie, but not performed by the student. NG is also used to indicate on the gradesheet that a Unit Contents / Special Syllabus briefing item was covered. Additionally, NG is the grade for individual maneuvers on solo sorties, unless the student does something recognizable from the ground as unsafe.
Unsatisfactory (U) The student is unsafe or unable because of lack of sufficient knowledge, skill, or ability to perform the operation, maneuver, or task. Note that 'U' may completely normal at a given point in training. For instance, maneuvers newly introduced will typically be Unsatisfactory. Post-solo students receiving a 'U' on any safety of flight item will receive a 'U' overall, and will not fly solo again until the 'U' is cleared.
Fair (F) The student performs the operation, maneuver, or task safely but has limited proficiency. Deviations occur that detract from performance and/or verbal prompting was required from the instructor. Typically, Fair indicates the CFI's belief that the student can or could safely accomplish the item while solo in the aircraft.
Good (G) The student performs the operation, maneuver, or task satisfactorily. Deviations occur that are recognized and corrected in a timely manner without verbal prompting from the instructor. Good equates to the PTS, and indicates sufficient mastery of the subject or maneuver.
Excellent (E) The student performs the operation, maneuver, or task correctly, efficiently, and skillfully. Minor deviations occur that do not detract from the overall performance.
Not Applicable (NA) Talon/ETA requires a grade on every item on its Unit gradesheet. A sortie may be complete, even though a particular non-plus-item was not accomplished. If this is the case, then that item is marked NA.

Overall Sortie Grades/Relative Grading Scale
The instructor applies relative grading criteria to assess overall sortie performance with grades of Excellent (E), Good (G), Fair (F), or Unsatisfactory (U). "Good" is the norm for daily sorties. Students are expected to progress as they advance in training. Students may receive grades of 'F' or 'U' on individual maneuvers new to them, but still receive a grade of 'G' or 'E' for overall sortie performance. A student's continued lack of progress should be reflected with an overall sortie performance grade of 'F' or 'U'. 'F' will not be given as the overall grade on consecutive

sorties. 'U' as an overall grade means the student does not demonstrate satisfactory proficiency or progression for his/her level of training. This may represent lack of preparation or effort on the student's part, lack of recency of experience, lack of skill, or simply a temporary learning plateau (student needs to repeat the lesson.)

For flights preceding stage checks, 'U' overall represents the instructor's judgment that the student cannot pass the applicable stage check. Except for lessons immediately preceding stage checks, a sortie graded 'U' overall does not absolutely preclude progress to the subsequent syllabus sortie. However, remediation or additional training may be directed, if necessary. Additionally, 'U' is the overall grade assigned in the event of active airsickness. A student achieving three overall 'U' grades consecutively will be brought to the attention of the Chief Instructor, who will review the student's training record, and, if needed, direct a progress check lesson with a check instructor (ground and/or flight evaluation.)

Incomplete (I) 'I' is assigned as an overall sortie grade if, due to conditions beyond the student's control (weather, maintenance, illness, etc.), insufficient time was available for the student to meet standards in a particular maneuver. Amplifying information is required. If in doubt, CFI's will consult the Chief Instructor or Assistant Chief as to the appropriateness of an Incomplete versus an Unsatisfactory grade. Additionally, an 'I' is appropriate if time is insufficient for a given oral or flight lesson, but some training was accomplished.

Solo sorties: Solo sorties are graded NG overall, unless the student commits a patently unsafe act which is observable from the ground or by an airborne flight instructor, in which case the sortie would be graded 'U', and the student counseled.

STAGE CHECKS: Stage checks are integral to Part 141 pilot schools. They measure the student's accomplishment during each stage of training. They allow close supervision of training and a second opinion on the student's progress. Specific chief instructor approval is required to begin the next stage without completing the current stage, including its associated stage check. Students failing stage checks will not proceed to the next stage.

COURSE GRADES: Because stage check grades normally serve as overall flight course grades for the University, the "A-B-C" grading system must be used. If a stage has more than one check, the Final stage check will be weighted. 'I' for a course grade is in accordance with University policy.

GRADING STAGE CHECKS: After each stage check, the check instructor will assign maneuver grades using the preceding scale (U-F-G-E.) When any grade below a plus-item standard is assigned, the check instructor must include amplifying comments on the grade form. The "A-B-C-D-F" scale is relative, with the check instructor using his judgment.

(A) Meets or Exceeds Standards without check instructor input. Each stage check begins with the assumption that the student is at the 'A' level.

(B) Meets Standards with little check instructor input.

(C) Below Standards. The student is not unsafe but proficiency is limited or excessive instruction is required. To receive a 'C', a maximum of three plus-items may be graded Fair when a Good is the standard. NOTE: 'C' cannot be used as an overall grade if Fair is the maneuver standard, and an item is graded 'U'. 'C' cannot be used on Final stage checks, since all items must meet standards (Good). 'C' is also a usable overall course grade.

(D) 'D' is not a usable stage check grade. Students may, in theory, receive a 'D' as an overall course grade.

(F) Failure. Safety of the flight is in question, and/or instructor intervention is required. Grading any item 'Unsatisfactory' results in an 'F'.

Students achieving an 'F' will normally be required to repeat the stage check. The check instructor will direct or conduct remediation as required. Repeated stage checks are still graded as listed above. However, the University course grade will be lowered one letter. The flight profile of repeated stage checks is at check instructor discretion, but will include all items graded below standard. Original failed maneuver grades are not accounted for in scoring the retake.

PRACTICAL TESTS: Practical tests are conducted by the FAA or their designated representative. Practical test completion is required to complete the training course.

COURSE GRADES: Flight course grades are issued by the Chief Instructor. Because this is a collegiate setting in which college credit is given for flight courses, the "A-B-C-D-F" grading system must be used. Normally, if a stage check is graded 'A' or 'B' on the first attempt, or a practical test is passed on the first attempt, an 'A' for the course is issued, unless special circumstances exist. 'B' would usually indicate a second attempt at the stage check or practical test was required for success. 'C' would indicate more than two attempts at the check or test were required. 'D' would be issued only in special, negative circumstances. 'F' would be issued for failure to complete the stage or certificate test, as applicable.

STAGE ONE FLIGHT TRAINING SUMMARY

Note: DU—dual, SO—solo, ATD—aviation training device, ORL—oral, INST—instrument

LESSON 1: BASIC ATTITUDES	DU	SO	ATD	ORL	INST
1. PRIVATE PILOT KNOWLEDGE CHECK				1.0	
2. PRIVATE PILOT STANDARDS CHECK	1.3				0.1
3. INTRO TO ATTITUDE INSTRUMENT FLYING				1.0	
4. BASIC ATTITUDE FLYING			1.0	0.5	1.0
5. BASIC ATTITUDE FLYING	1.0			0.5	0.9
6. PARTIAL PANEL TRAINING			1.0	0.5	1.0
7. PARTIAL PANEL TRAINING	1.0			0.5	0.9
LESSON TWO: INSTRUMENT NAVIGATION					
1. INSTRUMENT NAVIGATION				2.0	
2. NAVIGATION USING VOR/GPS			1.0	0.5	1.0
3. NAVIGATION USING VOR/GPS			1.0	0.5	1.0
4. NAVIGATION USING VOR/GPS	1.5			0.5	1.4
LESSON: THREE HOLDING					
1. HOLDING				1.0	
2. VOR AND GPS HOLDING PATTERNS			1.0	0.5	1.0
3. VOR AND GPS HOLDING PATTERNS			1.0	0.5	1.0
4. VOR AND GPS HOLDING PATTERNS	1.5			0.5	1.4
5. VOR AND GPS HOLDING PATTERNS	1.5			0.5	1.4
LESSON FOUR: APPLIED NAVIGATION AND COMMUNICATION REVIEW					
1. ATC CLEARANCES AND PROCEDURES				1.0	
2. INSTRUMENT RULES FLIGHT	2.0			1.5	1.9
LESSON FIVE: BASIC ATTITUDES, NAVIGATION, AND COMMUNICATION STAGE CHECK					
1. BASIC ATTITUDES/NAV-COM CHECK				1.0	
2. BASIC ATTITUDES/NAV-COM CHECK			1.5		1.5
TOTAL STAGE ONE TIMES	**9.8**	**0.0**	**7.5**	**14.0**	**15.3**

STAGE TWO FLIGHT TRAINING SUMMARY

Note: DU—dual, SO—solo, ATD—aviation training device, ORL—oral, INST—instrument

LESSON ONE: INSTRUMENT APPROACHES	**DU**	**SO**	**FTD**	**ORL**	**INST**
1. NON-PRECISION APPROACH PROCEDURES				1.5	
2. PRECISION APPROACH PROCEDURES				0.5	
3. (Units 3 through 7) INSTRUMENT APRCH. TNG.			7.0	3.5	7.0
LESSON TWO: APPROACHES SUB-STAGE CHECK					
1. APPROACHES SUB-STAGE CHECK				1.0	
2. APPROACHES SUB-STAGE CHECK			1.5		1.0
LESSON THREE: INSTRUMENT CROSS-COUNTRY NAVIGATION (9.5 XC)					
1. INSTRUMENT CROSS-COUNTRY PROC.				1.5	
2. (Units 2 through 5) IFR CROSS-COUNTRY NAV	9.5			3.0	9.0
LESSON 4: PRACTICAL TEST PREPARATION					
1. INSTRUMENT KNOWLEDGE REVIEW				1.0	
2. INSTRUMENT REVIEW FLIGHT	1.6				1.5
3. FINAL INSTRUMENT STAGE CHECK				1.5	
4. FINAL INSTRUMENT STAGE CHECK	1.6				1.5
5. PRACTICAL TEST PREPARATION				1.0	
LESSON 5: FAA PRACTICAL TEST					
1. PRACTICAL TEST FLIGHT		1.6			
TOTAL STAGE TWO TIMES	**12.7**	**1.6**	**8.5**	**13.5**	**20.6**
TOTAL COURSE TIMES	**23.0**	**1.6**	**16.0**	**27.5**	**35.9**

Note: Stage One Dual and ATD plus Stage Two Dual and ATD will equal no less than 35 hours.

PROFESSIONAL AVIATION 242
INSTRUMENT PILOT FLIGHT I: STAGE ONE FLIGHT TRAINING
ATTITUDE INSTRUMENT FLIGHT, NAVIGATION, AND COMMUNICATION

OBJECTIVES: The focus of this stage is for the student to maintain aircraft control by sole reference to instruments, while navigating as required via NAVAIDs. Proper holding pattern procedures will be developed. Intercepting and tracking navigational systems will be emphasized.

INSTRUCTOR ACTIONS: Instructors use the lessons and units as guides for planning their instructional activities. They discuss, demonstrate, and critique, while monitoring student actions for safety of flight. The instructor provides opportunities for the student to practice decision-making.

STUDENT ACTIONS: Students prepare for lessons and units, and ask pertinent questions. They learn to act as pilot in command, by practicing and performing to the given standards.

REQUIRED STUDY: Following each lesson, the instructor will look forward to the next planned lesson, and assign the student the listed maneuver items for book review from the Instrument Flying Handbook or suitable text.

COMPLETION STANDARDS: This stage is complete when the student demonstrates competence in aircraft control and navigation by instruments. The standards used for instrument flight and instrument navigation are those listed in the Instrument Rating Airman Certification Standards (ACS).

FLIGHT STAGE 1, LESSON 1: BASIC ATTITUDES

OBJECTIVES: The objective is to introduce the student to the Instrument Rating—Airplane flight training course. Attitude instrument flight is introduced.

SPECIAL SYLLABUS:

1. Prior to beginning instrument training, students will demonstrate competence in private pilot knowledge, along with the VFR maneuvers and procedures detailed in the FAA Private Pilot ACS.
2. Students lacking previous G1000 experience will, prior to beginning this lesson, complete the GARMIN *G1000 Integrated Flight Deck Pilot's Guide* and GIFD trainer software, and review it with an authorized instructor.
3. Create student training folder.
4. Intake student to Talon/ETA, if not already accomplished.
5. Verify student flight account.
6. Review course completion requirements
7. Review appropriate policies and procedures
8. Oral review of flight instruments.
9. Oral review of attitude instrument flying.
10. Throughout this syllabus, Basic Instrument Maneuvers consists of:
    a. Straight and level
    b. Change of airspeed
    c. Constant airspeed climbs and descents.
    d. Rate climbs and descents.
    e. Standard rate turns
    f. Timed turns
    g. Magnetic compass turns
11. Steep turns and recovery from unusual attitudes are graded separately.
    a. Unusual attitudes training in the aircraft requires day VMC.

COMPLETION STANDARDS: The student should be familiar with the Tech Flight Operations policies and procedures, the G1000 cockpit layout and switchology, have a flight record created, and be familiar with course completion requirements.

The student must demonstrate readiness for the instrument rating course, by first displaying retention of private pilot knowledge and skill, as to VFR procedures and maneuvers.

The student completes this lesson when he/she can maintain airspeed ±10kts, heading ±10º, altitude ±100' during level flight and level-offs, and Bank ±5º during turns, for all maneuvers as applicable.

FS1, L1, UNIT 1: (1.0 HR ORAL) PRIVATE PILOT KNOWLEDGE CHECK

Preflight Preparation	
Ground Operations	
Normal Takeoff	
Short-field Takeoff	
Soft-field Takeoff	
Departure	
Steep Turns	
Slow Flight	
Power-off Stalls	
Power-on Stalls	
Ground Reference Maneuvers	
Enroute Descent	
Straight-In Approach	
Traffic Pattern	
Normal Landing	
Short-field Landing	
Soft-field Landing	
Slip to Land / No-Flap Land	
Night Operations	
Engine-out Procedures	
Engine-out Landing	
Basic Instrument Maneuvers	
Touch-and-Go	
Go-Around	
Communication	
Pilotage/Dead Reckoning	
Use of Navigation Systems	
Diversion	
Checklist Procedures	
Risk Management / Decision Making	
Task Management	
Situational Awareness	
Emergency Procedures	F+
General Knowledge	F+
Basic Aircraft Control	
Special Syllabus Requirements	F+

FS1, L1, UNIT 2: (1.3 HR DUAL) PRIVATE PILOT STANDARDS CHECK

Preflight Preparation	F+
Ground Operations	F+
Normal Takeoff	F+
Short-field Takeoff	F+
Soft-field Takeoff	F+
Departure	F+
Steep Turns	F+
Slow Flight	F+
Power-off Stalls	F+
Power-on Stalls	F+
Ground Reference Maneuvers	F+
Enroute Descent	F+
Straight-In Approach	F
Traffic Pattern	F+
Normal Landing	F+
Short-field Landing	F+
Soft-field Landing	F+
Slip to Land / No-Flap Land	F+
Night Operations	
Engine-out Procedures	F+
Engine-out Landing	F+
Basic Instrument Maneuvers	F+
Touch-and-Go	F
Go-Around	F+
Communication	F+
Pilotage/Dead Reckoning	F+
Use of Navigation Systems	F+
Diversion	F
Checklist Procedures	F+
Risk Management / Decision Making	F+
Task Management	F+
Situational Awareness	F+
Emergency Procedures	F+
General Knowledge	F+
Basic Aircraft Control	F+
Special Syllabus Requirements	F+

FS1, L1, UNIT 3: (1.0 HR ORAL) INSTRUMENT COURSE INTRODUCTION AND ATTITUDE INSTRUMENT FLYING

Preflight Preparation	
Ground Operations	
Takeoff	
Departure	
Steep Turns	
Enroute Descent	
Traffic Pattern	
Landing	
Night Operations	
Basic Instrument Maneuvers	
Partial Panel Skills	
Unusual Attitudes	
Touch-and-Go	
Go-around / Missed approach	
Use of Navigation Systems	
Holding	
Procedure Turn/Procedural Track	
GPS Approach	
ILS Approach	
Localizer Approach	
VOR Approach	
Approach w/Loss of Primary Inst.	
Circling Approach	
Transition to Landing	
Communication	
Checklist Procedures	
Risk Management / Decision Making	
Task Management	
Situational Awareness	
Emergency Procedures	U+
General Knowledge	U+
Basic Aircraft Control	
Special Syllabus Requirements	NG+

FS1, L1, UNIT 4: (1.0 HR ATD) BASIC ATTITUDE TRAINING

Preflight Preparation	F+
Ground Operations	F+
Takeoff	U+
Departure	U+
Steep Turns	U+
Enroute Descent	U+
Traffic Pattern	U
Landing	U
Night Operations	U
Basic Instrument Maneuvers	U+
Partial Panel Skills	
Unusual Attitudes	U+
Touch-and-Go	U
Go-around / Missed approach	U
Use of Navigation Systems	
Holding	
Procedure Turn/Procedural Track	
GPS Approach	
ILS Approach	
Localizer Approach	
VOR Approach	
Approach w/Loss of Primary Inst.	
Circling Approach	
Transition to Landing	
Communication	U
Checklist Procedures	U+
Risk Management / Decision Making	U+
Task Management	U+
Situational Awareness	U+
Emergency Procedures	U+
General Knowledge	U+
Basic Aircraft Control	U+
Special Syllabus Requirements	NG+

FS1, L1, UNIT 5: (1.0 HR DUAL) BASIC ATTITUDE TRAINING

Preflight Preparation	F+
Ground Operations	F+
Takeoff	U+
Departure	U+
Steep Turns	F+
Enroute Descent	U+
Traffic Pattern	F
Landing	F
Night Operations	
Basic Instrument Maneuvers	F+
Partial Panel Skills	
Unusual Attitudes	F+
Touch-and-Go	F
Go-around / Missed approach	F
Use of Navigation Systems	
Holding	
Procedure Turn/Procedural Track	
GPS Approach	
ILS Approach	
Localizer Approach	
VOR Approach	
Approach w/Loss of Primary Inst.	
Circling Approach	
Transition to Landing	
Communication	U+
Checklist Procedures	F+
Risk Management / Decision Making	U+
Task Management	U+
Situational Awareness	U+
Emergency Procedures	U+
General Knowledge	U+
Basic Aircraft Control	F+
Special Syllabus Requirements	NG+

FS1, L1, UNIT 6: (1.0 HR ATD) PARTIAL PANEL TRAINING

Preflight Preparation	F+
Ground Operations	F+
Takeoff	U+
Departure	U+
Steep Turns	F+
Enroute Descent	U+
Traffic Pattern	U
Landing	U
Night Operations	U
Basic Instrument Maneuvers	F+
Partial Panel Skills	U+
Unusual Attitudes	F+
Touch-and-Go	U
Go-around / Missed approach	U
Use of Navigation Systems	
Holding	
Procedure Turn/Procedural Track	
GPS Approach	
ILS Approach	
Localizer Approach	
VOR Approach	
Approach w/Loss of Primary Inst.	
Circling Approach	
Transition to Landing	
Communication	U
Checklist Procedures	U+
Risk Management / Decision Making	U+
Task Management	U+
Situational Awareness	U+
Emergency Procedures	U+
General Knowledge	U+
Basic Aircraft Control	F+
Special Syllabus Requirements	NG+

FS1, L1, UNIT 7: (1.0 HR DUAL) PARTIAL PANEL TRAINING

Preflight Preparation	F+
Ground Operations	F+
Takeoff	F+
Departure	U+
Steep Turns	F+
Enroute Descent	U+
Traffic Pattern	F
Landing	F
Night Operations	
Basic Instrument Maneuvers	F+
Partial Panel Skills	F+
Unusual Attitudes	F+
Touch-and-Go	F
Go-around / Missed approach	F
Use of Navigation Systems	
Holding	
Procedure Turn/Procedural Track	
GPS Approach	
ILS Approach	
Localizer Approach	
VOR Approach	
Approach w/Loss of Primary Inst.	
Circling Approach	
Transition to Landing	
Communication	U+
Checklist Procedures	U+
Risk Management / Decision Making	U+
Task Management	U+
Situational Awareness	U+
Emergency Procedures	U+
General Knowledge	U+
Basic Aircraft Control	F+
Special Syllabus Requirements	NG+

FLIGHT STAGE 1, LESSON 2: INSTRUMENT NAVIGATION

OBJECTIVES: The student will practice intercepting and tracking the installed navigation systems, while continuing to work on attitude instrument flying.

SPECIAL SYLLABUS:

1. Brief on VOR.
    a. VOR orientation
    b. VOR tracking
    c. VOR intercepts (inbound and outbound)
2. Brief on NDB/ADF use and limitations.
3. Brief on Global Positioning System (GPS)
    a. GPS components
    b. Function of GPS
    c. GPS substitution
    d. GPS substitution for ADF or DME
    e. How to determine aircraft position over a DME fix
    f. How to fly a DME arc
4. Communications: Student will "read back" headings and altitudes from Instructor
5. Departure: Review of SIDs and ODPs
6. ATD: accomplish a SID or ODP

COMPLETION STANDARDS: The student maintains orientation to specified NAVAIDs. The student can identify and track courses within five degrees.

FS1, L2, UNIT 1: (2.0 HR ORAL) INSTRUMENT NAVIGATION

Preflight Preparation	
Ground Operations	
Takeoff	
Departure	
Steep Turns	
Enroute Descent	
Traffic Pattern	
Landing	
Night Operations	
Basic Instrument Maneuvers	
Partial Panel Skills	
Unusual Attitudes	
Touch-and-Go	
Go-around / Missed approach	
Use of Navigation Systems	
Holding	
Procedure Turn/Procedural Track	
GPS Approach	
ILS Approach	
Localizer Approach	
VOR Approach	
Approach w/Loss of Primary Inst.	
Circling Approach	
Transition to Landing	
Communication	
Checklist Procedures	
Risk Management / Decision Making	
Task Management	
Situational Awareness	
Emergency Procedures	U+
General Knowledge	U+
Basic Aircraft Control	
Special Syllabus Requirements	NG+

FS1, L2, UNIT 2: (1.0 HR ATD) NAVIGATION USING VOR AND GPS

Preflight Preparation	F+
Ground Operations	F+
Takeoff	F+
Departure	U+
Steep Turns	F+
Enroute Descent	U+
Traffic Pattern	F
Landing	F
Night Operations	U
Basic Instrument Maneuvers	F+
Partial Panel Skills	F+
Unusual Attitudes	F+
Touch-and-Go	F
Go-around / Missed approach	F
Use of Navigation Systems	U+
Holding	
Procedure Turn/Procedural Track	
GPS Approach	
ILS Approach	
Localizer Approach	
VOR Approach	
Approach w/Loss of Primary Inst.	
Circling Approach	
Transition to Landing	
Communication	U+
Checklist Procedures	F+
Risk Management / Decision Making	U+
Task Management	U+
Situational Awareness	U+
Emergency Procedures	U+
General Knowledge	U+
Basic Aircraft Control	F+
Special Syllabus Requirements	NG+

FS1, L2, UNIT 3: (1.0 HR ATD) NAVIGATION USING VOR AND GPS

Preflight Preparation	F+
Ground Operations	F+
Takeoff	F+
Departure	F+
Steep Turns	F+
Enroute Descent	F+
Traffic Pattern	F
Landing	F
Night Operations	U
Basic Instrument Maneuvers	F+
Partial Panel Skills	F+
Unusual Attitudes	F+
Touch-and-Go	F
Go-around / Missed approach	F
Use of Navigation Systems	U+
Holding	
Procedure Turn/Procedural Track	
GPS Approach	
ILS Approach	
Localizer Approach	
VOR Approach	
Approach w/Loss of Primary Inst.	
Circling Approach	
Transition to Landing	
Communication	U+
Checklist Procedures	F+
Risk Management / Decision Making	U+
Task Management	U+
Situational Awareness	U+
Emergency Procedures	U+
General Knowledge	U+
Basic Aircraft Control	F+
Special Syllabus Requirements	NG+

FS1, L2, UNIT 4: (1.5 HR DUAL) NAVIGATION USING VOR AND GPS

Preflight Preparation	F+
Ground Operations	F+
Takeoff	F+
Departure	F+
Steep Turns	F
Enroute Descent	F+
Traffic Pattern	F
Landing	F+
Night Operations	
Basic Instrument Maneuvers	F+
Partial Panel Skills	F
Unusual Attitudes	F
Touch-and-Go	F
Go-around / Missed approach	F
Use of Navigation Systems	F+
Holding	
Procedure Turn/Procedural Track	
GPS Approach	
ILS Approach	
Localizer Approach	
VOR Approach	
Approach w/Loss of Primary Inst.	
Circling Approach	
Transition to Landing	
Communication	F+
Checklist Procedures	F+
Risk Management / Decision Making	U+
Task Management	U+
Situational Awareness	U+
Emergency Procedures	U+
General Knowledge	U+
Basic Aircraft Control	F+
Special Syllabus Requirements	NG+

FLIGHT STAGE 1, LESSON 3: HOLDING

OBJECTIVES: This lesson is focused heavily on holding using available NAVAIDs.

SPECIAL SYLLABUS:

1. The holding pattern briefing
    a. The purpose of holding
    b. Holding pattern components
    c. Standard and nonstandard holding patterns
    d. Holding clearances elements
        i. Expect further clearance time
    e. Holding pattern entries
        i. Direct
        ii. Teardrop
        iii. Parallel
    f. Wind corrections while holding
    g. Radio communication procedures
    h. Tracking in the holding pattern
    i. Holding at intersections
    j. Holding at marker beacons and compass locators
    k. Unique characteristics of holding on a GPS fix
2. Aircraft configurations for instrument approaches.
3. Instrument approach publications
    a. The Instrument Flying Handbook
    b. The Airman Information Manual
    c. Instrument Approach Procedures

COMPLETION STANDARDS: The student should display an understanding of the procedures involved in all phases of holding using the VOR and GPS. The student will be able to maintain aircraft control, while navigating to and entering a holding pattern without assistance.

FS1, L3, UNIT 1: (1.0 HR ORAL) HOLDING

Preflight Preparation	
Ground Operations	
Takeoff	
Departure	
Steep Turns	
Enroute Descent	
Traffic Pattern	
Landing	
Night Operations	
Basic Instrument Maneuvers	
Partial Panel Skills	
Unusual Attitudes	
Touch-and-Go	
Go-around / Missed approach	
Use of Navigation Systems	
Holding	
Procedure Turn/Procedural Track	
GPS Approach	
ILS Approach	
Localizer Approach	
VOR Approach	
Approach w/Loss of Primary Inst.	
Circling Approach	
Transition to Landing	
Communication	
Checklist Procedures	
Risk Management / Decision Making	
Task Management	
Situational Awareness	
Emergency Procedures	F+
General Knowledge	F+
Basic Aircraft Control	
Special Syllabus Requirements	NG+

FS1, L3, UNIT 2: (1.0 HR ATD) VOR AND GPS HOLDING PATTERNS

Preflight Preparation	F+
Ground Operations	F+
Takeoff	F+
Departure	F+
Steep Turns	F+
Enroute Descent	F+
Traffic Pattern	F
Landing	F
Night Operations	U
Basic Instrument Maneuvers	F+
Partial Panel Skills	F+
Unusual Attitudes	F+
Touch-and-Go	F
Go-around / Missed approach	F
Use of Navigation Systems	F+
Holding	U+
Procedure Turn/Procedural Track	
GPS Approach	
ILS Approach	
Localizer Approach	
VOR Approach	
Approach w/Loss of Primary Inst.	
Circling Approach	
Transition to Landing	
Communication	F+
Checklist Procedures	F+
Risk Management / Decision Making	U+
Task Management	U+
Situational Awareness	U+
Emergency Procedures	F+
General Knowledge	F+
Basic Aircraft Control	F+
Special Syllabus Requirements	NG+

FS1, L3, UNIT 3: (1.0 HR ATD) VOR AND GPS HOLDING PATTERNS

Preflight Preparation	F+
Ground Operations	F+
Takeoff	F+
Departure	F+
Steep Turns	F+
Enroute Descent	F+
Traffic Pattern	F
Landing	F
Night Operations	U
Basic Instrument Maneuvers	G+
Partial Panel Skills	G+
Unusual Attitudes	G+
Touch-and-Go	F
Go-around / Missed approach	F
Use of Navigation Systems	F+
Holding	F+
Procedure Turn/Procedural Track	
GPS Approach	
ILS Approach	
Localizer Approach	
VOR Approach	
Approach w/Loss of Primary Inst.	
Circling Approach	
Transition to Landing	
Communication	F+
Checklist Procedures	F+
Risk Management / Decision Making	U+
Task Management	U+
Situational Awareness	U+
Emergency Procedures	F+
General Knowledge	F+
Basic Aircraft Control	F+
Special Syllabus Requirements	NG+

FS1, L3, UNIT 4: (1.5 HR DUAL) VOR AND GPS HOLDING PATTERNS

Preflight Preparation	F+
Ground Operations	F+
Takeoff	F+
Departure	F+
Steep Turns	F
Enroute Descent	F+
Traffic Pattern	F
Landing	F+
Night Operations	U
Basic Instrument Maneuvers	G+
Partial Panel Skills	F
Unusual Attitudes	F
Touch-and-Go	F
Go-around / Missed approach	F
Use of Navigation Systems	F+
Holding	F+
Procedure Turn/Procedural Track	
GPS Approach	
ILS Approach	
Localizer Approach	
VOR Approach	
Approach w/Loss of Primary Inst.	
Circling Approach	
Transition to Landing	
Communication	F+
Checklist Procedures	F+
Risk Management / Decision Making	U+
Task Management	U+
Situational Awareness	U+
Emergency Procedures	F+
General Knowledge	F+
Basic Aircraft Control	F+
Special Syllabus Requirements	NG+

FS1, L3, UNIT 5: (1.5 HR DUAL) VOR AND GPS HOLDING PATTERNS

Preflight Preparation	F+
Ground Operations	F+
Takeoff	F+
Departure	F+
Steep Turns	F
Enroute Descent	F+
Traffic Pattern	F
Landing	F+
Night Operations	U
Basic Instrument Maneuvers	G+
Partial Panel Skills	F
Unusual Attitudes	F
Touch-and-Go	F
Go-around / Missed approach	F
Use of Navigation Systems	G+
Holding	G+
Procedure Turn/Procedural Track	
GPS Approach	
ILS Approach	
Localizer Approach	
VOR Approach	
Approach w/Loss of Primary Inst.	
Circling Approach	
Communication	F+
Checklist Procedures	F+
Risk Management / Decision Making	U+
Task Management	U+
Situational Awareness	U+
Emergency Procedures	F+
General Knowledge	F+
Basic Aircraft Control	F+
Special Syllabus Requirements	NG+

FLIGHT STAGE 1, LESSON 4: APPLIED NAVIGATION AND COMMUNICATION REVIEW

OBJECTIVES: This lesson is an opportunity to practice VOR and GPS navigation and holding pattern operations in the airplane under IFR with the flight instructor's assistance. The object is to put into practice maneuvers covered in the previous lessons.

SPECIAL SYLLABUS:

1. Discuss ATC clearances and procedures with reference to the AIM
2. Filing IFR
3. Instrument preflight
4. Clearance copy/read back
5. Instrument departure
6. Setting up the navigation receivers
7. Orientation during the holding pattern entry
8. Holding on a VOR
9. Holding at VOR intersections
10. Holding using the GPS
11. Standards for navigation accuracy
12. ATC communications/reports
13. Clearance compliance
14. The use of IFR en route charts
15. Traffic pattern entry at a controlled airport
16. IFR flight to a tower-controlled airport in the region

COMPLETION STANDARDS: The student maintains orientation to specified NAVAIDs. The student can identify and track courses within five degrees. The student makes required radio calls.

FS1, L4, UNIT 1: (1.0 HR ORAL) ATC CLEARANCES AND PROCEDURES

Preflight Preparation	
Ground Operations	
Takeoff	
Departure	
Steep Turns	
Enroute Descent	
Traffic Pattern	
Landing	
Night Operations	
Basic Instrument Maneuvers	
Partial Panel Skills	
Unusual Attitudes	
Touch-and-Go	
Go-around / Missed approach	
Use of Navigation Systems	
Holding	
Procedure Turn/Procedural Track	
GPS Approach	
ILS Approach	
Localizer Approach	
VOR Approach	
Approach w/Loss of Primary Inst.	
Circling Approach	
Transition to Landing	
Communication	
Checklist Procedures	
Risk Management / Decision Making	
Task Management	
Situational Awareness	
Emergency Procedures	F+
General Knowledge	F+
Basic Aircraft Control	
Special Syllabus Requirements	NG+

FS1, L4, UNIT 2: (2.0 HR DUAL) INSTRUMENT RULES FLIGHT

Preflight Preparation	F+
Ground Operations	G+
Takeoff	G+
Departure	G+
Steep Turns	F
Enroute Descent	G+
Traffic Pattern	F+
Landing	F+
Night Operations	U
Basic Instrument Maneuvers	G+
Partial Panel Skills	G
Unusual Attitudes	G
Touch-and-Go	F
Go-around / Missed approach	F
Use of Navigation Systems	G+
Holding	G+
Procedure Turn/Procedural Track	
GPS Approach	
ILS Approach	
Localizer Approach	
VOR Approach	
Approach w/Loss of Primary Inst.	
Circling Approach	
Transition to Landing	
Communication	G+
Checklist Procedures	G+
Risk Management / Decision Making	F+
Task Management	F+
Situational Awareness	F+
Emergency Procedures	F+
General Knowledge	F+
Basic Aircraft Control	G+
Special Syllabus Requirements	NG+

FLIGHT STAGE 1, LESSON FIVE: BASIC ATTITUDES, NAVIGATION, AND COMMUNICATION STAGE CHECK

OBJECTIVES: This lesson is an evaluation of the student's proficiency in controlling the airplane solely by reference to instruments, while maintaining orientation and navigating using VOR and GPS. The objective is to determine by oral questioning and student performance that the student is prepared to progress to the next stage.

SPECIAL SYLLABUS:

1. Departure clearance
2. VOR course interception
3. Holding on a VOR
4. Holding at an intersection
5. Holding using the GPS
6. Standards for navigation accuracy
7. ATC communications
8. Clearances copy and read back
9. Clearance compliance
10. The use of instrument charts
11. Cockpit organization
12. Partial panel skills
13. Recovery from unusual attitudes

COMPLETION STANDARDS: The student demonstrates appropriate knowledge of and competence in the tasks listed, while maintaining aircraft control and orientation by reference to instruments.

FS1, L5, UNIT 1: (1.0 HR ORAL) BASIC ATTITUDES/NAV-COM STAGE CHECK

Preflight Preparation	
Ground Operations	
Takeoff	
Departure	
Steep Turns	
Enroute Descent	
Traffic Pattern	
Landing	
Night Operations	
Basic Instrument Maneuvers	
Partial Panel Skills	
Unusual Attitudes	
Touch-and-Go	
Go-around / Missed approach	
Use of Navigation Systems	
Holding	
Procedure Turn/Procedural Track	
GPS Approach	
ILS Approach	
Localizer Approach	
VOR Approach	
Approach w/Loss of Primary Inst.	
Circling Approach	
Transition to Landing	
Communication	
Checklist Procedures	
Risk Management / Decision Making	
Task Management	
Situational Awareness	
Emergency Procedures	F+
General Knowledge	F+
Basic Aircraft Control	
Special Syllabus Requirements	NG+

FS1, L5, UNIT 2: (1.5 HR ATD) BASIC ATTITUDES/NAV-COM STAGE CHECK

Preflight Preparation	F+
Ground Operations	G+
Takeoff	G+
Departure	G+
Steep Turns	F
Enroute Descent	G+
Traffic Pattern	F+
Landing	F+
Night Operations	
Basic Instrument Maneuvers	G+
Partial Panel Skills	G+
Unusual Attitudes	G+
Touch-and-Go	F
Go-around / Missed approach	F
Use of Navigation Systems	G+
Holding	G+
Procedure Turn/Procedural Track	
GPS Approach	
ILS Approach	
Localizer Approach	
VOR Approach	
Approach w/Loss of Primary Inst.	
Circling Approach	
Transition to Landing	
Communication	G+
Checklist Procedures	G+
Risk Management / Decision Making	F+
Task Management	F+
Situational Awareness	F+
Emergency Procedures	F+
General Knowledge	F+
Basic Aircraft Control	G+
Special Syllabus Requirements	NG+

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INSTRUMENT PILOT FLIGHT II: STAGE TWO FLIGHT TRAINING
IFR OPERATIONS

OBJECTIVES: The objective is for the student to become proficient in cross-country operations under IFR within the ATC system. This includes knowledge of ATC clearances, airway navigation, and precision and non-precision approaches. The student is expected to know the pertinent FAA regulations and be able to interpret the appropriate charts and publications.

REFERENCES:

1. Instrument Flying Handbook
2. Instrument Rating Airman Certification Standards (ACS)
3. FAR/AIM
4. Flight Information Publications

COMPLETION STANDARDS: The IFR Operations phase of flight training encompasses all of the elements of instrument flying to include basic instrument flying skills, knowledge of instrument flight equipment and facilities, navigation procedures, regulatory requirements, flying departures and approaches to minimums, interpreting charts and publications, procurement of weather information, and flying a safe IFR navigation flight. Approaches receive special emphasis, with their own sub-stage check. This stage is complete when the student has all of the aeronautical knowledge and skill requirements for an instrument rating. Completion standards will be in accordance with the FAA Instrument Rating Airman Certification Standards (ACS).

FLIGHT STAGE 2, LESSON 1: INSTRUMENT APPROACHES

OBJECTIVES: The objective is for the student to become proficient in and understand VOR, GPS, and ILS instrument approach procedures. This includes knowledge of ATC communications, the types of instrument approaches, interpretation of instrument approach procedure charts, and the techniques for flying an instrument approach.

SPECIAL SYLLABUS:

1. Briefing items include
    a. Instrument Approach Procedure Charts
    b. Radio frequencies
    c. Plan view information
    d. Profile view information
    e. The minimum safe altitude circle
    f. Approach minimums
    g. Timing to missed approach
    h. Airport diagram
    i. Approach lighting symbology
    j. Visual references needed at the DH or MDA in order to continue
    k. Instrument approaches: Precision versus non-precision approaches
    l. ASR approach
    m. Bearing pointer-only approach techniques
    n. Approach segments
    o. Determination of minimums for straight in and circling approaches
        i. Aircraft categories
    p. Missed approach
    q. Determining missed approach point
    r. Positive pilot actions required
    s. Missed approach holding pattern
    t. Variations in the initial approach fix
    u. Variations in the final approach fix
    v. Procedure turns, Procedural tracks, DME arcs, Holding-in-lieu of procedure turn
    w. Radar vectors
    x. Contact and visual approaches
    y. Executing the circling approach
    z. Aircraft configuration for instrument approaches
2. Multiple ATD sessions will be required.

COMPLETION STANDARDS: This stage requires a thorough knowledge of all the elements of the approach phase of IFR flight. This includes the flying skills for flying the instrument approach to minimums, knowledge of equipment and facilities, navigation procedures, regulatory requirements, interpreting charts and publications, procurement of weather information, and flying a safe instrument approach. The student will be familiar with and demonstrate Fair proficiency at instrument approaches, while continuing to demonstrate Good aircraft control.

FS2, L1, UNIT 1: (1.5 HR ORAL) NON-PRECISION APPROACH PROCEDURES

Preflight Preparation	
Ground Operations	
Takeoff	
Departure	
Steep Turns	
Enroute Descent	
Traffic Pattern	
Landing	
Night Operations	
Basic Instrument Maneuvers	
Partial Panel Skills	
Unusual Attitudes	
Touch-and-Go	
Go-around / Missed approach	
Use of Navigation Systems	
Holding	
Procedure Turn/Procedural Track	
GPS Approach	
ILS Approach	
Localizer Approach	
VOR Approach	
Approach w/Loss of Primary Inst.	
Circling Approach	
Transition to Landing	
Communication	
Checklist Procedures	
Risk Management / Decision Making	
Task Management	
Situational Awareness	
Emergency Procedures	G+
General Knowledge	G+
Basic Aircraft Control	
Special Syllabus Requirements	NG+

FS2, L1, UNIT 2: (0.5 HR ORAL) PRECISION APPROACH PROCEDURES

Preflight Preparation	
Ground Operations	
Takeoff	
Departure	
Steep Turns	
Enroute Descent	
Traffic Pattern	
Landing	
Night Operations	
Basic Instrument Maneuvers	
Partial Panel Skills	
Unusual Attitudes	
Touch-and-Go	
Go-around / Missed approach	
Use of Navigation Systems	
Holding	
Procedure Turn/Procedural Track	
GPS Approach	
ILS Approach	
Localizer Approach	
VOR Approach	
Approach w/Loss of Primary Inst.	
Circling Approach	
Transition to Landing	
Communication	
Checklist Procedures	
Risk Management / Decision Making	
Task Management	
Situational Awareness	
Emergency Procedures	G+
General Knowledge	G+
Basic Aircraft Control	
Special Syllabus Requirements	NG+

FS2, L1, UNITS 3 THROUGH 7: (7.0 HR ATD) INSTRUMENT APPROACH TRAINING

Preflight Preparation	G+
Ground Operations	G+
Takeoff	G+
Departure	G+
Steep Turns	F
Enroute Descent	G+
Traffic Pattern	F
Landing	F
Night Operations	U
Basic Instrument Maneuvers	G+
Partial Panel Skills	G+
Unusual Attitudes	G
Touch-and-Go	F
Go-around / Missed approach	F+
Use of Navigation Systems	G+
Holding	G+
Procedure Turn/Procedural Track	F+
GPS Approach	F+
ILS Approach	F+
Localizer Approach	F+
VOR Approach	F+
Approach w/Loss of Primary Inst.	F+
Circling Approach	U
Transition to Landing	F+
Communication	G+
Checklist Procedures	G+
Risk Management / Decision Making	F+
Task Management	F+
Situational Awareness	F+
Emergency Procedures	G+
General Knowledge	G+
Basic Aircraft Control	G+
Special Syllabus Requirements	NG+

FLIGHT STAGE 2, LESSON 2: APPROACHES SUB-STAGE CHECK

OBJECTIVES: The objective is to evaluate the student's knowledge of instrument approaches using VOR, GPS, and ILS. The student will also be evaluated on flying skills, judgment, cockpit management, and the ability to handle emergency situations typically associated with IFR flight.

SPECIAL SYLLABUS:

1. The check pilot will evaluate not less than three instrument approaches, one of which will be non-precision and partial panel.
2. The student will be required to fly a published missed approach, to include a holding entry.

COMPLETION STANDARDS: The student should demonstrate reasonable instrument pilot proficiency, accomplishing instrument approaches at a safe level.

FS2, L2, UNIT 1: (1.0 HR ORAL) APPROACHES SUB-STAGE CHECK

Preflight Preparation	
Ground Operations	
Takeoff	
Departure	
Steep Turns	
Enroute Descent	
Traffic Pattern	
Landing	
Night Operations	
Basic Instrument Maneuvers	
Unusual Attitudes	
Touch-and-Go	
Go-around / Missed approach	
Use of Navigation Systems	
Holding	
Procedure Turn/Procedural Track	
GPS Approach	
ILS Approach	
Localizer Approach	
VOR Approach	
Approach w/Loss of Primary Inst.	
Circling Approach	
Communication	
Checklist Procedures	
Risk Management / Decision Making	
Task Management	
Situational Awareness	
Emergency Procedures	G+
General Knowledge	G+
Basic Aircraft Control	
Special Syllabus Requirements	

FS2, L2, UNIT 2: (1.0 HR ATD) APPROACHES SUB-STAGE CHECK

Preflight Preparation	G+
Ground Operations	G+
Takeoff	G+
Departure	G+
Steep Turns	F
Enroute Descent	G+
Traffic Pattern	F
Landing	F
Night Operations	
Basic Instrument Maneuvers	G+
Partial Panel Skills	G+
Unusual Attitudes	G
Touch-and-Go	F
Go-around / Missed approach	F+
Use of Navigation Systems	G+
Holding	G+
Procedure Turn/Procedural Track	F+
GPS Approach	F
ILS Approach	F+
Localizer Approach	F
VOR Approach	F
Approach w/Loss of Primary Inst.	F+
Circling Approach	
Transition to Landing	F+
Communication	G+
Checklist Procedures	G+
Risk Management / Decision Making	F+
Task Management	F+
Situational Awareness	F+
Emergency Procedures	G+
General Knowledge	G+
Basic Aircraft Control	G+
Special Syllabus Requirements	NG+

FLIGHT STAGE 2, LESSON 3: INSTRUMENT CROSS-COUNTRY NAVIGATION

OBJECTIVES: This lesson is intended to provide time for the student to pull together all elements of IFR cross country flight. The instructor should focus attention to those areas where the student needs additional training to attain the Instrument Practical Test Standards.

SPECIAL SYLLABUS:

1. Briefing areas:
    a. IFR cross-country planning
        i. NOTAMs and weather procurement
        ii. Airplane performance
        iii. Systems related to IFR flight
        iv. Filing an IFR flight plan
            1. Electronic filing
    b. Departure procedures
        i. Obstacle departure procedures
        ii. SIDs
        iii. Diverse departure
    c. IFR en route procedures/Clearance compliance
    d. Cockpit management/Use of charts
    e. ATC communications
    f. Instrument approaches
        i. Bearing pointer-only approach
        ii. VOR approach
        iii. DME/arc approach
        iv. ILS Approach
        v. GPS Approach
    g. Missed approach procedures
    h. Transition to landing
    i. Partial panel non-precision approach
    j. Loss of communication procedures
2. This lesson will consist of multiple sorties to airports outside the local training area.
3. This lesson will have at least one cross-country flight that—
    a. Is in the category and class of airplane that the course is approved for, and is performed under IFR;
    b. Is a distance of at least 250 nautical miles along airways or ATC-directed routing with one segment of the flight consisting of at least a straight-line distance of 100 nautical miles between airports;
    c. Involves an instrument approach at each airport; and
    d. Involves three different kinds of approaches with the use of navigation systems.

COMPLETION STANDARDS: The student should be able to plan and execute all required elements of an IFR cross-country flight, operating by sole reference to instruments from immediately after takeoff until transitioning to land at completion of an instrument approach. Standards to achieve are listed in the Airman Certification Standards (ACS). The instructor will provide a comprehensive critique of the student's performance.

FS2, L3, UNIT 1: (1.5 HR ORAL) INSTRUMENT CROSS-COUNTRY PROCEDURES

Preflight Preparation	
Ground Operations	
Takeoff	
Departure	
Steep Turns	
Enroute Descent	
Traffic Pattern	
Landing	
Night Operations	
Basic Instrument Maneuvers	
Unusual Attitudes	
Touch-and-Go	
Go-around / Missed approach	
Use of Navigation Systems	
Holding	
Procedure Turn/Procedural Track	
GPS Approach	
ILS Approach	
Localizer Approach	
VOR Approach	
Approach w/Loss of Primary Inst.	
Circling Approach	
Transition to Landing	
Communication	
Checklist Procedures	
Risk Management / Decision Making	
Task Management	
Situational Awareness	
Emergency Procedures	G+
General Knowledge	G+
Basic Aircraft Control	
Special Syllabus Requirements	NG+

FS2, L3, UNITS 2 THROUGH 5: (9.5 HR DUAL) INSTRUMENT CROSS-COUNTRY TRAINING

Preflight Preparation	G+
Ground Operations	G+
Takeoff	G+
Departure	G+
Steep Turns	G+
Enroute Descent	G+
Traffic Pattern	G+
Landing	G+
Night Operations	F
Basic Instrument Maneuvers	G+
Unusual Attitudes	G+
Touch-and-Go	G
Go-around / Missed approach	G+
Use of Navigation Systems	G+
Holding	G+
Procedure Turn/Procedural Track	G+
GPS Approach	G+
ILS Approach	G+
Localizer Approach	G+
VOR Approach	G+
Approach w/Loss of Primary Inst.	G+
Circling Approach	G+
Transition to Landing	G+
Communication	G+
Checklist Procedures	G+
Risk Management / Decision Making	G+
Task Management	G+
Situational Awareness	G+
Emergency Procedures	G+
General Knowledge	G+
Basic Aircraft Control	G+
Special Syllabus Requirements	NG+

FLIGHT STAGE 2, LESSON 4: PRACTICAL TEST PREPARATION

OBJECTIVES: The objective is to evaluate the student's knowledge of instrument navigation using VOR, GPS, and ILS. The student will also be evaluated on flying skills, judgment, cockpit management, and the ability to handle emergency situations typically associated with IFR flight.

SPECIAL SYLLABUS:

1. Prerequisite: FAA Instrument Knowledge Test Report (70% minimum)
2. The oral will generally be guided by the ACS.
3. The check pilot will pre-assign an IFR flight to a suitable destination, the planning for which will be discussed in the oral portion.
4. The flight profile will include not less than three instrument approaches, with one conducted under partial panel.

COMPLETION STANDARDS: The student should demonstrate a complete understanding of IFR operations and display the airmanship necessary to operate safely as a pilot-in-command during IFR operations. The student must perform all IFR procedures at the proficiency level prescribed by the Instrument Rating Airman Certification Standards (ACS). Students successfully completing this examination will be awarded the Instrument Rating course graduation certificate.

FS2, L4, UNIT 1: (1.0 HOUR ORAL) INSTRUMENT KNOWLEDGE REVIEW

Preflight Preparation	
Ground Operations	
Takeoff	
Departure	
Steep Turns	
Enroute Descent	
Traffic Pattern	
Landing	
Night Operations	
Basic Instrument Maneuvers	
Unusual Attitudes	
Touch-and-Go	
Go-around / Missed approach	
Use of Navigation Systems	
Holding	
Procedure Turn/Procedural Track	
GPS Approach	
ILS Approach	
Localizer Approach	
VOR Approach	
Approach w/Loss of Primary Inst.	
Circling Approach	
Transition to Landing	
Communication	
Checklist Procedures	
Risk Management / Decision Making	
Task Management	
Situational Awareness	
Emergency Procedures	G+
General Knowledge	G+
Basic Aircraft Control	
Special Syllabus Requirements	NG+

FS2, L4, UNIT 2: (1.6 HOUR DUAL) INSTRUMENT REVIEW FLIGHT

Preflight Preparation	G+
Ground Operations	G+
Takeoff	G+
Departure	G+
Steep Turns	G+
Enroute Descent	G+
Traffic Pattern	G+
Landing	G+
Night Operations	
Basic Instrument Maneuvers	G+
Unusual Attitudes	G+
Touch-and-Go	G
Go-around / Missed approach	G+
Use of Navigation Systems	G+
Holding	G+
Procedure Turn/Procedural Track	G+
GPS Approach	G
ILS Approach	G+
Localizer Approach	G
VOR Approach	G
Approach w/Loss of Primary Inst.	G+
Circling Approach	G+
Transition to Landing	G+
Communication	G+
Checklist Procedures	G+
Risk Management / Decision Making	G+
Task Management	G+
Situational Awareness	G+
Emergency Procedures	G+
General Knowledge	G+
Basic Aircraft Control	G+
Special Syllabus Requirements	NG+

FS2, L4, UNIT 3: (1.5 HR ORAL) INSTRUMENT FINAL STAGE CHECK

Preflight Preparation	G+
Ground Operations	
Takeoff	
Departure	
Steep Turns	
Enroute Descent	
Traffic Pattern	
Landing	
Night Operations	
Basic Instrument Maneuvers	
Unusual Attitudes	
Touch-and-Go	
Go-around / Missed approach	
Use of Navigation Systems	
Holding	
Procedure Turn/Procedural Track	
GPS Approach	
ILS Approach	
Localizer Approach	
VOR Approach	
Approach w/Loss of Primary Inst.	
Circling Approach	
Transition to Landing	
Communication	
Checklist Procedures	
Risk Management / Decision Making	
Task Management	
Situational Awareness	
Emergency Procedures	G+
General Knowledge	G+
Basic Aircraft Control	
Special Syllabus Requirements	NG+

FS2, L4, UNIT 4: (1.6 HR DUAL) INSTRUMENT FINAL STAGE CHECK

Preflight Preparation	G+
Ground Operations	G+
Takeoff	G+
Departure	G+
Steep Turns	G+
Enroute Descent	G+
Traffic Pattern	G+
Landing	G+
Night Operations	
Basic Instrument Maneuvers	G+
Unusual Attitudes	G+
Touch-and-Go	G
Go-around / Missed approach	G+
Use of Navigation Systems	G+
Holding	G+
Procedure Turn/Procedural Track	G+
GPS Approach	G
ILS Approach	G+
Localizer Approach	G
VOR Approach	G
Approach w/Loss of Primary Inst.	G+
Circling Approach	G+
Transition to Landing	G+
Communication	G+
Checklist Procedures	G+
Risk Management / Decision Making	G+
Task Management	G+
Situational Awareness	G+
Emergency Procedures	G+
General Knowledge	G+
Basic Aircraft Control	G+
Special Syllabus Requirements	NG+

FS2, L4, UNIT 5: (1.0 HOUR ORAL) PRACTICAL TEST PREPARATION

Preflight Preparation
Ground Operations
Takeoff
Departure
Steep Turns
Enroute Descent
Traffic Pattern
Landing
Night Operations
Basic Instrument Maneuvers
Unusual Attitudes
Touch-and-Go
Go-around / Missed approach
Use of Navigation Systems
Holding
Procedure Turn/Procedural Track
GPS Approach
ILS Approach
Localizer Approach
VOR Approach
Approach w/Loss of Primary Inst.
Circling Approach
Transition to Landing
Communication
Checklist Procedures
Risk Management / Decision Making
Task Management
Situational Awareness
Emergency Procedures
General Knowledge G+
Basic Aircraft Control
Special Syllabus Requirements NG+