

Semper Fly Helicopters

14 CFR PART 141 FLIGHT SCHOOL



**AVIA 4123 - FLIGHT INSTRUCTOR GROUND
ROTORCRAFT / HELICOPTER
CERTIFICATION COURSE
GROUND TRAINING MANUAL**

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SECTION 1 - GROUND TRAINING SYLLABUS

1.1 - Course Requirements and Objectives

Enrollment Prerequisites

The Semper Fly Helicopter Flight Instructor Rotorcraft / Helicopter Ground Training Course is designed to have the student concurrently enrolled in the associated Semper Fly Helicopters Flight Instructor Rotorcraft / Helicopter Flight Training Course. As such, students must meet the following criteria:

1. Minimum Age: 17
2. English Proficiency - Students must be proficient in reading, writing, and speaking English to comply with FAA regulations
3. Financial Readiness - Students must be able to provide proof of ability to finance the training program, either through personal funds, loans, or GI Bill benefits for eligible veterans
4. Interview and Assessment - Semper Fly Helicopters reserves the right to conduct an interview in which the motivation and fitness for flight training can be assessed
5. Required Documents
 - A. U.S. Citizens
 - i. Proof of U.S. Citizenship
 - ii. Valid, unexpired U.S. passport OR
 - iii. Original or government-issued birth certificate of the U.S., American Samoa, or Swains Island AND a government-issued picture identification OR
 - iv. Original certification of birth abroad with raised seal (Form FS-545 or Form DS-1350) AND a government-issued picture identification OR
 - v. Original certificate of U.S. citizenship with raised seal (Form N-560 or N-561) or a Certificate of Repatriation (Form N-581) AND government-issued picture ID OR
 - vi. Original U.S. Naturalization Certificate with raised seal (Form N-550 or N-570) AND a government-issued picture ID
 - vii. FAA Class I or Class II Medical
 - viii. FAA Airman's Certificate: Commercial Pilot Certificate (Rotorcraft)
 - ix. FAA Knowledge Test (if completed)
 - B. Foreign Nationals
 - i. Passport
 - ii. Visa
 - iii. FAA Class I or Class II Medical
 - iv. Complete TSA Training application

Additionally, all students must satisfy the requirements identified in Part 141; Appendix F, applicable to the certificate or rating sought by the learner. If the student is degree seeking, they must meet the enrollment criteria of the University of Oklahoma Aviation Department.

Ground Training Course Objective

The student will develop the knowledge specified by 14 CFR Part 141 Appendix F and the Airman Certification Standards for a Flight Instructor Pilot Rotorcraft / Helicopter certificate. The student will be expected to utilize this knowledge to receive a passing score on the Certified Flight Instructor Pilot Knowledge Test and the Fundamentals of Instruction Knowledge Test.

Ground Training Course Completion Standards

The ground-training course will be completed when the student pilot demonstrates knowledge that meets or exceeds those standards as outlined in the Semper Fly Helicopters Standard Operating Procedures and Safety Policies Manual and the Airman Certification Standards.

*(The ground curriculum contained in this training course outline may be substituted with previous training given that the student is credited no more than 50 percent of the aeronautical knowledge training requirements of this curriculum.)

Ground Training Curriculum

Ground school for the Flight Instructor Pilot student is accomplished by enrollment in the Semper Fly Helicopters course and a minimum of 55 classroom hours. An outline for each lesson is provided in the following Ground Training Syllabus. The academic instructor will be responsible for student knowledge who obtained credit by exam or who have not taken these courses.

Ground Training Textbooks

The ground-training course is structured by the Helicopter Pilot Textbook. Jeppesen Sanderson, Inc., Aviation Instructor's Handbook, the Federal Regulations FAR/AIM. Ground training lessons generally follow the sequence and content of these textbooks. Other required reference materials are listed in the Introduction Section of the Airman Certification Standards.

Training Records

Semper Fly Helicopters will establish and maintain current and accurate records of the participation of each student enrolled in the aviation program. These records will include as a minimum the date the student was enrolled, a chronological log of the student's course attendance, the subjects, and flight operations covered in the student's training, and the names and grades of any tests taken by the student. Additionally, a record will be maintained on the date the student graduated, terminated training, or transferred to another school. Whenever a student graduates, terminates training, or transfers to another school, the student's record will be certified to that effect by the chief instructor. The school will retain each student record for at least 1 year from the date that the student either graduates from the course to which the record pertains, terminates enrollment in the course to which the record pertains, or transfers to another school. These records will be kept in accordance with 14 CFR 141.101. The school will make a copy of these records available to the student upon request.

1.2 - Flight Instructor Pilot Course
Minimum Time Summary

<u>TRAINING STAGE</u>	<u>DUAL</u>	<u>SOLO/PIC</u>	<u>X/C</u>	<u>NIGHT</u>	<u>ORAL</u>	<u>GROUND</u>
Ground Stage One						21.5
Ground Stage Two						33.5
SUB-TOTAL						55.0

TOTAL GROUND TIME FOR FLIGHT INSTRUCTOR PILOT COURSE: 55.0 HOURS
TOTAL FLIGHT TIME FOR FLIGHT INSTRUCTOR PILOT COURSE: 25.0 HOURS

1.3 - Grading Rubric

After each lesson, the instructor will assign grades for each ground or flight activity using the following scale:

GRADE	STUDENT PERFORMANCE	DESCRIPTION
A	Exceeds Standards	The student meets the FAA Airman Certification Standards and usually (50% of the time or more) exceeds those standards.
B	Meets Standards	The student meets the FAA Airman Certification Standards.
C	Below Standards	The student does not meet the FAA Airman Certification Standards.
F	Failure	Student non-participation or refusal to re-train
I	Incomplete	The allotted time was not sufficient for the student to perform the activity.
NG	Not Graded	The activity was not assigned to the student and will <u>not</u> be required to be completed in a separate training session.

NOTES

- With a grade of C, or F, the instructor must include amplifying comments on the grade form
- With a grade of C, F, or I, the student will be required to complete the activity to the FAA Airman Certification Standards in a separate training session.

SECTION 2 - STAGE ONE GROUND TRAINING

OBJECTIVES:

The primary concentration during Ground Training is on the Fundamentals of Instruction (FOI) including: the Learning Process, Elements of Effective Teaching, Student Evaluation and Testing, Course Development, Lesson Planning, Classroom Training Techniques, and Aeronautical Knowledge areas required for the Private and Commercial Rotorcraft Helicopter certificates.

The ground training portion of the curriculum will follow the flow of the Aviation Instructors Handbook (FAA-H-8083-9A) to help ensure that all required material will be covered.

Each student must read the syllabus content material prior to arriving for class. The student must be prepared to present and discuss the subject content during class.

REFERENCES:

1. The Semper Fly Helicopters Training Course Outline for the Flight Instructor Pilot Rotorcraft / Helicopter Certification Course
2. The Semper Fly Helicopters Standard Operating Procedures and Safety Policies Manual
3. The Semper Fly Helicopters Private / Commercial Study Guide
4. Guimbal Cabri G2 Flight Manual
5. Guimbal Cabri G2 Flight Instructor Guide
6. Helicopter Pilot Textbook. Jeppesen Sanderson, Inc
7. Aeronautical Decision Making for Pilots
8. The FAR/AIM Manual
9. Flight Instructor for Rotorcraft Category Helicopter Rating Airman Certification Standards, FAA-S-ACS-29
10. Risk Management Handbook, FAA-H-8083-2
11. Aviation Instructor's Handbook, FAA-H-8083-9A

COMPLETION STANDARDS:

The student will display a functional knowledge required at the Certified Flight Instructor level and be able to teach pilots required topics of aeronautical knowledge and flight skills.

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<u>2.4 - Lesson 4: Effective Communication</u>	1.0	2-6
<u>2.5 - Lesson 5: The Teaching Process</u>	3.0	2-7
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<u>2.8 - Lesson 8: Instructor Responsibilities & Professionalism</u>	2.0	2-10
<u>2.9 - Lesson 9: Techniques of Flight Instruction</u>	3.0	2-11
<u>2.10 - Lesson 10: Risk Management</u>	2.0	2-12
GROUND STAGE ONE - TOTAL HOURS	21.5	

2.1 - LESSON 1: INTRODUCTION

(Ground: 0.5 Hours)

OBJECTIVES:

To explain the requirements to become a Certified Flight Instructor (CFI), maintaining the CFI rating, and discuss the training program.

CONTENTS:

1. Training required for the CFI rating
 2. Maintaining the CFI rating
 3. Review of the Training Course Outline
- Review of Semper Fly Helicopters Standard Operating Procedures and Safety Policies
Manual and signing of agreement form

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination, the student displays an instructional understanding of the aviation industry, the pilot training process, and the requirements necessary to become a safe and responsible certificated Flight Instructor.

2.2 - LESSON 2: HUMAN BEHAVIOR

(Ground: 2.0 Hours)

OBJECTIVES:

To introduce the student to human behavior and how it affects the learning process.

CONTENTS:

1. Definitions of Human Behavior
2. Human Needs and Motivation
3. Human Nature and Motivation
4. Human Factors That Inhibit Learning
5. Student Emotional Reactions
6. Teaching the Adult Student

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination, the student displays an understanding of Human Behavior and how it affects the learning process.

2.3 - LESSON 3: THE LEARNING PROCESS

(Ground: 3.0 Hours)

OBJECTIVES:

To introduce the student to the process by which people learn.

CONTENTS:

1. Introduction
2. Learning Theory
3. Perceptions
4. Insight
5. Acquiring Knowledge
6. Thorndike and the Laws of Learning
7. Domains of Learning
8. Characteristics of Learning
9. Learning Styles
10. Acquiring Skill Knowledge
11. Types of Practice
12. Evaluation Versus Critique
13. Putting it All Together
14. Scenario-Based Training
15. Errors
16. Motivation
17. Maintaining Motivation
18. Memory
19. Retention of Learning
20. Transfer of Learning

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination, the student displays an understanding of the process by which people learn and its importance in helping to form judgment and problem solving skills.

2.4 - LESSON 4: EFFECTIVE COMMUNICATION

(Ground: 1.0 Hours)

OBJECTIVES:

To introduce the student to the essential elements of effective communication including the barriers to communication and development of communication skills.

CONTENTS:

1. Basic Elements of Communication
2. Barriers to Effective Communication
3. Developing Communication Skills

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination, the student displays an understanding of the importance of developing effective communication. The student will also be able to discuss the basic elements of communicating and barriers that can present challenges during the learning process.

2-5 - LESSON 5: THE TEACHING PROCESS

(Ground: 3.0 Hours)

OBJECTIVES:

To introduce the student to specific recommendations on how to apply the theoretical information covered thus far in human behavior, how people learn and effective communication.

CONTENTS:

1. What is Teaching?
2. Instructors Code of Conduct
3. Course of Training
4. Preparation of a Lesson
5. Presentation of a Lesson
6. Organization of Material
7. Training Delivery Methods
8. Problem-Based Learning
9. Electronic Learning (E-Learning)
10. Cooperative or Group Learning Method
11. Demonstration-Performance Method
12. Drill & Practice Method
13. Application of the Lesson
14. Assessment of the Lesson
15. Instructional Aids and Training Technologies
16. Test Preparation Material

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination, the student displays an ability and understanding on how to apply what has been learned about human behavior, how people learn, and effective communication techniques in support of the teaching process.

2-6 - LESSON 6: ASSESSMENT

(Ground: 2.0 Hours)

OBJECTIVES:

To introduce the student to the instructor's role in assessing levels of learning, methods of assessment available and how to construct and conduct an effective assessment.

CONTENTS:

1. Assessment Terminology
2. Purpose of Assessment
3. General Characteristics of Effective Assessment
4. Traditional Assessment
5. Authentic Assessment
6. Choosing an Effective Assessment Method
7. Critiques and Oral Assessments

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination, the student displays an understanding of how to effectively construct and conduct an assessment of a student's performance and progress.

2-7 - LESSON 7: PLANNING INSTRUCTIONAL ACTIVITY

(Ground: 3.0 Hours)

OBJECTIVES:

To introduce the student to the planning required by the professional aviation instructor as it relates to four key topics; course of training, blocks of learning, training syllabus, and lesson plans as well as how to integrate Scenario Based Training (SBT), Aeronautical Decision Making (ADM) and risk management into the aviation training lesson.

CONTENTS:

1. Course of Training
2. Blocks of Learning
3. Training Syllabus
4. Lesson Plans
5. Scenario-Based Training (SBT)
6. Single-Pilot Resource Management

COMPLETION STANDARDS:

This lesson will be successfully completed when the student has presented three lessons using the tools, resources and formats covered in this and previous lessons in a manner which is well organized and effectively communicated.

2-8 - LESSON 8: INSTRUCTOR RESPONSIBILITIES & PROFESSIONALISM

(Ground: 2.0 Hours)

OBJECTIVES:

To introduce the student to the responsibilities of an instructor during the training process, their role as an advocate for safety and ways in which aviation instructors can enhance their professional image.

CONTENTS:

1. Aviation Instructor Responsibilities
2. Flight Instructor Responsibilities
3. Aviator's Model Code of Conduct
4. Safety Practices & Accident Prevention
5. Professionalism
6. Evaluation of Student Ability
7. Aviation Instructors & Exams
8. Professional Development

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination, the student displays an understanding of the responsibilities of an aviation instructor as they pertain to learning, safety and professionalism.

2-9 - LESSON 9: TECHNIQUES OF FLIGHT INSTRUCTION

(Ground: 3.0 Hours)

OBJECTIVES:

To introduce the student to strategies that can be used to enhance their instruction and concepts of system safety.

CONTENTS:

1. Flight Instructor Qualifications
2. Practical Flight Instructor Strategies
3. Obstacles to Learning During Flight Instruction
4. Demonstration-Performance Training Delivery Method
5. Positive Exchange of Controls
6. Sterile Cockpit Rule
7. Use of Distractions
8. Integrated Flight Instruction
9. Assessment of Piloting Ability

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination, the student displays an understanding of how to apply the concepts and contents introduced in this lesson in relation to enhancing the quality of instruction and system safety.

2-10 - LESSON 10: RISK MANAGEMENT

(Ground: 2.0 Hours)

OBJECTIVES:

To introduce the student to the concept of preemptive actions that contribute to safety rather than reactive through the process of risk management.

CONTENTS:

1. Defining Risk Management
2. Level of Risk
3. Mitigating Risk
4. Three-P Model for Pilots
5. Hazard List for Aviation Technicians
6. Pilot Self-Assessment
7. Situational Awareness
8. Single-Pilot Resource Management (SRM)
9. Teaching Decision Making Skills
10. Assessing SRM Skills
11. Aeronautical Decision Making (ADM)

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination, the student displays an understanding of the process of risk management including specific techniques to be used in assessment and mitigation.

SECTION 3 - STAGE TWO GROUND TRAINING

OBJECTIVES:

The primary objective during this stage of Ground Training is to focus on Aeronautical Knowledge areas to include Regulations, Logbook and Endorsements, Flight Instruction, Helicopter Systems, The Flight Environment, Ground Operations, Flight Maneuvers, Emergency Procedures, Meteorology, Navigation, Aviation Physiology, and Aeronautical Decision Making (ADM).

The ground training portion of the curriculum will follow the flow of the Aviation Instructors Handbook (FAA-H-8083-9A) to help ensure that all required material be covered.

Each student must read the syllabus content material prior to arriving for class. The student must be prepared to present and discuss the subject content during class.

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COMPLETION STANDARDS:

The student will display a functional knowledge required at the Certified Flight Instructor level and be able to teach pilots required topics of aeronautical knowledge and flight skills.

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GROUND STAGE TWO - TOTAL HOURS	33.5	

3-1 - LESSON 1: REGULATIONS & PUBLICATIONS

(Ground: 1.0 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge of the elements contained within this lesson.

CONTENTS:

1. Federal Regulations Part 61 (Including but not limited to 61.2, 61.15, 61.16, 61.23, 61.51, 61.56, 61.57, 61.59, 61.60 & Subpart-E, 61.105 (b)(1), 61.133)
 - A. Private Pilot
 - i. Limitations
 - ii. Flight Operations
 - iii. Privileges
 - B. Commercial Pilot
 - i. Limitations
 - ii. Flight Operations
 - iii. Privileges
2. NTSB Part 830
3. Flight Information Publications
4. Airman Certificate Standards
5. Helicopter Flight Manual

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination, the student displays an instructional understanding of the elements related to the pertinent regulations and publications, their purpose, general content, availability, and method of revision.

3-2 - LESSON 2: LOGBOOK ENTRIES & CERTIFICATE ENDORSEMENTS

(Ground: 1.0 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge of the elements contained within this lesson.

CONTENTS:

1. Required logbook entries for instruction given
2. Required endorsements and placement for student pilots
3. Preparation of a recommendation for a pilot practical test, including the appropriate logbook entry
4. Required endorsement of a logbook for the successful completion of an FAA flight review
5. Required flight instructor records
6. AC 61-65F (or as amended)
7. Special Endorsements required for touchdown autorotations

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination, the student displays an ability to research, access and provide the pertinent logbook entries and endorsements for instruction given, permissions given to student pilots, recommendation for practical test, and successful flight review completion.

Furthermore the student must also display knowledge of his or her responsibilities in retaining records associated with these endorsements.

3-3 - LESSON 3: PRINCIPLES OF FLIGHT - PART 1

(Ground: 1.0 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge of the elements contained within this lesson.

CONTENTS:

1. Introduction to the Helicopter
 - A. The Main Rotor System
 - B. Anti-torque Systems
 - C. Landing Gear
 - D. Powerplant
 - E. Aircraft Certification
2. Flight Instruments
3. Aerodynamic Forces
 - A. Lift
 - B. Bernoulli's Principle
 - C. Law of Motion
 - D. Airfoils
 - E. Aerodynamic Terminology
 - F. Weight
 - G. Drag
 - H. Thrust

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination; the student displays an instructional understanding of the parts of a helicopter, the flight instruments, and the aerodynamic forces associated with flight.

3-4 - LESSON 4: PRINCIPLES OF FLIGHT - PART 2

(Ground: 1.0 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge of the elements contained within this lesson.

CONTENTS:

4. Forces in Flight
 - A. Hovering
 - B. Ground Effect
 - C. Forward Flight
 - D. Translational Lift
 - E. Dissymmetry of Lift
 - F. Transverse Flow Effect
 - G. Coriolis Effect
 - H. Autorotation
 - I. Height/Velocity Diagram
 - J. Weight vs. Density Altitude
 - K. Airflow During Autorotation
 - L. Airflow During Autorotation
 - M. The Three Axes
 - N. Turning Flight
 - O. Coordination in Turns
5. SFAR - Robinson Special Training and Experience Requirements
 - A. Energy Management
 - B. Mast Bumping
 - C. Low Rotor RPM (Blade Stall)
 - D. Low G Hazards
 - E. Rotor RPM Decay

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination; the student displays an instructional understanding of the aerodynamic forces of helicopter flight and SFAR 73.

3-5 - LESSON 5: HELICOPTER SYSTEMS & INSTRUMENTS - PART 1

(Ground: 1.0 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge of the elements contained within this lesson

CONTENTS:

1. Flight Control Systems
 - A. Collective Pitch
 - B. Cyclic Pitch
 - C. Swash Plate Assembly
 - D. Anti-torque Control
 - E. Trim Systems
 - F. Friction Systems
2. Engine Gauges Related to Performance
 - A. Tachometer
 - B. Manifold Pressure Gauge
3. The Reciprocating Engine and Related Systems
 - A. Principles of Operation
 - B. Four-Stroke Operating Cycle
 - C. Abnormal Combustion
 - D. Ignition System
 - E. Oil System
 - F. Cooling the Engine
 - G. Carb Icing
4. Fuel and Electrical Systems
 - A. Fuel System
 - B. Fuel Supply System
 - C. Induction System
 - D. Carburetor
 - E. Refueling
 - F. Fuel Grades
 - G. Electrical System
 - H. Alternators
 - I. Ammeter
 - J. Electrical Switches
 - K. Circuit Breakers and Fuses

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination; the student displays an instructional understanding of the components of the flight control systems, operation and information derived from engine gauges relating to performance as well as engine operation, fuel systems, and electrical systems.

3-6 - LESSON 6: HELICOPTER SYSTEMS & INSTRUMENTS - PART 2

(Ground: 1.0 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge of the elements contained within this lesson.

CONTENTS:

5. Powertrain Systems
 - A. Clutch
 - B. Belt Drive Clutch
 - C. Centrifugal Clutch
 - D. Transmission
 - E. Tail Rotor Drive System
 - F. Freewheeling Unit
 - G. Main Rotor Systems
6. Flight Instruments
 - A. Magnetic Compass
 - B. Variation
 - C. Deviation
 - D. Compass Errors
 - E. Magnetic Dip
 - F. Acceleration/Deceleration Error
 - G. Turning Error
 - H. Minimizing Errors
 - I. Outside Air Temperature Gauge
 - J. Pitot-Static Instruments
 - K. Effects of Atmospheric Conditions
 - L. International Standard Atmosphere
 - M. Pitot-Static System
 - N. Airspeed Indicator
 - O. Altimeter
 - P. Vertical Speed Indicator
 - Q. Gyroscopic Flight Instruments
 - R. Rigidity in Space
 - S. Precession
 - T. Vacuum System
 - U. Attitude Indicator
 - V. Heading Indicator
 - W. Turn Indicator
 - X. Turn-and-Slip Indicator
 - Y. Turn Coordinator

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination; the student demonstrates an instructional understanding of power train systems and flight instruments relating to the operation of the helicopter.

3-7 - LESSON 7: THE FLIGHT ENVIRONMENT - PART 1

(Ground: 1.0 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge of the elements contained within this lesson.

CONTENTS:

1. Safety of Flight & Collision Avoidance
 - A. Visual Scanning/Blind Spots and Aircraft Design
 - B. Airport/Heliport Operations
 - C. Maneuvers in the Training Area
 - D. Right-of-Way Rules
 - E. Minimum Safe Altitudes
 - F. VFR Cruising Altitudes
 - G. Special Safety Considerations
2. Airports and Heliports
 - A. Airports
 - i. Controlled and Uncontrolled Airports
 - ii. Airport Elevation
 - iii. Traffic Patterns
 - iv. Runway Layout
 - v. Basic Runway Markings
 - vi. Ramp Area
 - B. Heliports
 - i. Basic Heliport Markings and Heliport Traffic
 - C. Taxiways
 - D. Airport and Heliports Aids
 - E. Airport Signs
 - F. Wind Direction Indicator
 - G. Segmented Circle
 - H. Airport and Heliport Lighting
 - I. Aeronautical Beacons
 - J. Obstruction Lighting
 - K. Approach Lighting System
 - L. Visual Glide Slope Indicators
 - M. Threshold Lights
 - N. Runway Edge Lights
 - O. Taxiway Lights
 - P. Pilot Control of Airport Lighting
 - Q. Runway Incursion/Collision Avoidance

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination the student demonstrates an instructional understanding of the different types of airports, airport layouts, heliports as well as concepts, and rules and considerations related to the safety of flight.

3-8 - LESSON 8: THE FLIGHT ENVIRONMENT - PART 2

(Ground: 1.0 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge of the elements contained within this lesson.

CONTENTS:

- 3. Airspace
 - A. Controlled Airspace
 - B. Class A Airspace
 - C. Class B Airspace
 - D. Class C Airspace
 - E. Class D Airspace
 - F. Class E Airspace
 - G. Class G Airspace
 - H. Cloud Clearance and Visibility Requirements
 - I. Temporary Flight Restrictions (TFRs)
 - J. Airspeed Limitations
 - K. Special Use Airspace
 - i. Prohibited Areas, Restricted Areas, Warning Areas
 - ii. Military Operations Areas, Alert Areas, Airport Advisory Area
 - L. Military Training Routes
 - M. Parachute Jump Areas
 - N. Emergency Air Traffic Rules
 - O. ADIZ

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination the student demonstrates an instructional understanding of the various types of airspace.

3-9 - LESSON 9: GROUND OPERATIONS

(Ground: 1.0 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge of the elements contained within this lesson.

CONTENTS:

1. Pre-flight Check and Engine Starting
 - A. Airworthiness Documents & MEL's (Operations in Inoperative Equipment)
 - B. Checklists
 - C. Pre Flight Inspection
 - D. Exterior Pre-flight Inspection
 - E. Interior Pre Flight Inspection
 - F. Starting Procedure
 - G. Rotor Engagement
 - H. Systems Ground Check
 - I. Leaning the Mixture
2. Shutdown and Tie-down Procedures
 - A. Engine Shutdown Procedures
 - B. Moving the Helicopter
3. Safety Procedures
 - A. Rotors
 - B. Rotors and People
 - C. Rotors and Debris
 - D. Rotor Speed

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination the student demonstrates an instructional understanding of the preflight, engine starting, shutdown, tie-down, and unique safety considerations pertaining to helicopters.

3-10 - LESSON 10: PRIMARY MANEUVERS - PART 1

(Ground: 1.0 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge of the elements contained within this lesson.

CONTENTS:

1. Primary Maneuvers
 - A. Straight-and-Level Flight
 - B. Controlling Heading and Altitude
 - C. Attitude Flying
 - D. Altitude and Collective Movements
 - E. Directional Control and Cyclic Movement
 - F. Trim
 - G. Airspeed and Power
 - H. Effects of Pedal Movement
 - I. Control Coordination
 - J. Kinesthetic Sense
2. Taxiing, Hover Taxiing, Climbs, Descents, Turns
 - A. Taxiing & Hover Taxiing
 - B. Climbs
 - C. Climb Speeds
 - D. Level-off From a Climb
 - E. Descents
 - F. Controlling the Rate of Descent
 - G. Level-off From The Descent
 - H. Turns
 - I. Entering The Turn
 - J. Rolling Out of a Turn
 - K. Combinations of Primary Maneuvers
 - L. Climbing Turns
 - M. Descending Turns
 - N. Coordination Exercises

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination the student demonstrates an understanding of the fundamentals associated with controlling the helicopter during various phases of flight such as straight & level, climbs, descents, and turns.

3-11 - LESSON 11: PRIMARY MANEUVERS - PART 2

(Ground: 1.0 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge of the elements contained within this lesson.

CONTENTS:

3. Departures and Approaches
 - A. Normal Departure From a Hover
 - B. Crosswind Departure Technique
 - C. Departure From the Surface
 - D. Approaches
 - E. Normal Approach to a Hover
 - F. Normal Approach to The Surface
 - G. Crosswind Approaches
 - H. Go-Around

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination the student demonstrates an understanding of the flight fundamentals associated with departures and approaches.

3-12 - LESSON 12: HOVERING OPERATIONS

(Ground: 1.0 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge of the elements contained within this lesson.

CONTENTS:

1. Hovering Flight
 - A. Hovering Over a Point
 - B. Hovering Turns
 - C. Maneuvering by Ground Reference
 - D. Hovering Forward
 - E. Hovering Sideward
 - F. Hovering Rearward
 - G. Hovering Training Patterns
 - H. Recovery From Low Rotor RPM
2. Vertical Takeoff from a Hover
 - A. Takeoff from a Hover
 - B. Crosswind Technique
3. Vertical Landing From a Hover
 - A. Crosswind Landing
 - B. Hand Signals

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination the student demonstrates an understanding of the various techniques associated with hovering as well as transitioning to and from a hover during takeoff and approaches.

3-13 - LESSON 13: EMERGENCY PROCEDURES - PART 1

(Ground: 1.0 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge of the elements contained within this lesson.

CONTENTS:

1. Emergency Procedures (Autorotation)
 - A. Low Rotor RPM and Blade Stall
 - B. Autorotation
 - C. Initiating an Autorotation
 - D. Terminating The Autorotation
 - E. Power Recovery
 - F. Flare Touchdowns
 - G. Autorotation from a Hover
 - H. Initiating the autorotation from a Hover
 - I. Terminating the autorotation from a Hover
2. Emergency Situations
 - A. Settling With Power
 - B. Retreating Blade Stall
 - C. Ground Resonance
 - D. Dynamic Rollover
 - E. Low G Conditions and Mast Bumping
 - F. Recovery From Low Rotor RPM
 - G. Partial Power
 - H. Unanticipated Yaw/Loss of Tail Rotor Effectiveness (LTE)
 - I. Main Rotor Disc Interference
 - J. Weathercock Stability
 - K. Tail Rotor Vortex Ring State
 - L. LTE at Altitude
 - M. Reducing the Onset of LTE
 - N. Recovery Technique
 - O. Survival Gear for operating environment

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination the student demonstrates an understanding of the emergency procedures and situations contained in this lesson.

3-14 - LESSON 14: EMERGENCY PROCEDURES - PART 2

(Ground: 1.0 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge of the elements contained within this lesson.

CONTENTS:

3. Systems and Equipment Malfunction
 - A. Electrical System Malfunctions
 - B. Alternator Failure
 - C. Battery
 - D. Engine and Components Malfunctions
 - E. High Engine Temperature
 - F. Low Oil Pressure
 - G. Warning Lights
 - H. Fires
 - I. Fire During Engine Start
 - J. Engine Fire in Flight
 - K. Electrical Fire in Flight
 - L. Anti-torque System Failure
 - M. Hydraulics Failure
 - N. Abnormal Vibrations
 - O. Low Frequency Vibrations
 - P. Medium Frequency Vibrations
 - Q. High Frequency Vibrations

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination the student demonstrates an understanding of the appropriate actions in response to the various system and equipment malfunctions contained in this lesson.

3-15 - LESSON 15: ADVANCED MANEUVERS - PART 1

(Ground: 1.0 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge of the elements contained within this lesson.

CONTENTS:

1. Advanced Helicopter Maneuvers
 - A. Maximum Performance Takeoff and Climb
 - B. Steep Approach
2. High Altitude Operations
 - A. High Altitude Takeoffs
 - B. High Altitude Landings
3. Quick Stops
4. Slope Operations
 - A. Slope Operations
 - B. Slope Landings
 - C. Slope Takeoffs

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination the student demonstrates an understanding of the techniques used when performing more advanced helicopter maneuvers referenced in this lesson and special considerations needed when operating at high altitudes.

3-16 - LESSON 16: ADVANCED MANEUVERS - PART 2

(Ground: 1.0 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge of the elements contained within this lesson.

CONTENTS:

- 5. Night Operations
 - A. Night Considerations
 - B. Preflight Inspection
 - C. Collision Avoidance at Night
 - D. Night Flight
 - E. Taxi Technique
 - F. Takeoff
 - G. En-route Procedures
 - H. Approach and Landing
 - I. Slope Takeoff

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination the student demonstrates an understanding of the various considerations, techniques, and procedures unique to night operations.

3-17 - LESSON 17: CONFINED AREA & PINNACLE OPERATIONS

(Ground: 1.0 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge of the elements contained within this lesson.

CONTENTS:

1. Confined Area Operations
2. Pinnacle Operations
3. Pinnacle Approach and Landing
4. Pinnacle Takeoff and Climb

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination the student demonstrates an understanding of the techniques and operational considerations associated with confined area and pinnacle operations.

3-18 - LESSON 18: COMMUNICATIONS

(Ground: 1.0 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge of the elements contained within this lesson.

CONTENTS:

1. Radio Procedures
 - A. VHF Communication Equipment
 - B. Federal Communications Commission
 - C. International Civil Aviation Organization
 - D. Using the Radio
 - E. Radio Procedures
 - F. Common Traffic Advisory Frequency
 - G. Flight Service Stations
2. Radar and ATC Services
 - A. Radar
 - B. Transponder
 - C. FAA Radar Systems
 - D. Airport Surveillance Radar
 - E. Automated Radar Terminal System
 - F. Air Route Surveillance Radar
 - G. VFR Radar Services
 - H. Terminal VFR Radar Service
 - I. ATC Facilities at Controlled Airports
 - J. Departure Procedures
 - K. Automatic Terminal Information Service
 - L. Clearance Delivery
 - M. Ground Control
 - N. Departure Control
 - O. Arrival Procedures
 - P. Lost Communications Procedures
 - Q. Emergency Procedures

COMPLETION STANDARDS:

This lesson will have been successfully completed when the student, by oral or written examination, shows that he or she possesses an understanding of radio operation and procedures as well as radar and ATC services available to pilots.

3-19 - LESSON 19: PERFORMANCE

(Ground: 1.0 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge of the elements contained within this lesson.

CONTENTS:

1. Predicting Performance
 - A. Factors Affecting Performance
 - B. Density Altitude
 - C. Humidity
 - D. Surface Winds
 - E. Weight
 - F. Pilot's Operating Handbook
 - G. Performance Charts
 - H. Hovering Performance
 - I. Climb Performance
 - J. Best Rate of Climb
 - K. Cruise Performance
 - L. Operating Limitations and Markings
2. Weight and Balance
 - A. Aircraft Weight
 - B. Weight Limitations
 - C. Determining Empty Weight
 - D. Aircraft Balance
 - E. Forward Center of Gravity
 - F. Aft Center of Gravity
 - G. Weight and Balance Control
 - H. Weight and Balance Calculation
 - I. Computational Method
 - J. Graph Method
 - K. Table Method
 - L. Interpolation
 - M. Lateral CG

COMPLETION STANDARDS:

This lesson will have been successfully completed when the student, by oral or written examination, demonstrates an understanding of the fundamentals of predicting performance, the resources available to assist in doing so, and the various elements of weight and balance in relation to aircraft.

3-20 - LESSON 20: METEOROLOGY FOR PILOTS - PART 1

(Ground: 1.0 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge of the elements contained within this lesson.

CONTENTS:

1. Basic Weather Theory
 - A. The Atmosphere
 - B. Composition of the Atmosphere
 - C. Atmospheric Levels
 - D. Atmospheric Circulation
 - E. Convection
 - F. Atmospheric Pressure
 - G. Coriolis Force
 - H. Wind
 - I. Global / Local Wind Patterns
 - J. Sea and Land Breezes
 - K. Valley and Mountain Waves
 - L. Katabolic Winds
 - M. Moisture
 - N. Humidity
 - O. Visible Moisture
 - P. Clouds and Fog
 - Q. Precipitation
 - R. Dew and Frost
2. Weather Patterns
 - A. Atmospheric Stability
 - B. Temperature and Moisture
 - C. Rising and Descending Air
 - D. Temperature Inversions
 - E. Observing Stable and Unstable Air
 - F. Types of Clouds: Low, Middle, & High Clouds
 - G. Air Masses
 - H. Types of Fronts
 - I. Frontal Discontinuities
 - J. Frontal Weather
 - K. Stationary Fronts / Frontal Occlusions

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination; the student demonstrates an understanding of weather theory as well as weather patterns.

3-21 - LESSON 21: METEOROLOGY FOR PILOTS - PART 2

(Ground: 1.0 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge of the elements contained within this lesson.

CONTENTS:

- 3. Weather Hazards
 - A. Thunderstorms
 - B. Life Cycle
 - C. Types of Thunderstorms
 - D. Thunderstorm Hazards
 - E. Thunderstorm Avoidance
 - F. Turbulence
 - G. Convective Currents
 - H. Obstructions to Wind Flow
 - I. Clear Air Turbulence
 - J. Wake Turbulence
 - K. Low Visibility
 - L. Restrictions to Visibility
 - M. Wind Shear
 - N. Icing
 - O. Estimating Freezing Level
 - P. Cold Weather Operations

COMPLETION STANDARDS:

The student will have successfully completed this lesson when, by oral or written examination, he or she demonstrates an understanding of the weather hazards contained in this lesson and the impact they can have on the safety of flight.

3-22 - LESSON 22: INTERPRETING WEATHER DATA - PART 1

(Ground: 1.3 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge of the elements contained within this lesson.

CONTENTS:

1. Printer Reports and Forecasts
 - A. Aviation Routine Weather Report
 - B. Type of Report
 - C. Station Designator and Date/Time of Report/Modifier
 - D. Wind Information
 - E. Visibility
 - F. Present Weather
 - G. Sky Condition
 - H. Temperature and Dew Point
 - I. Altimeter
 - J. Remarks/Additional Reports
 - K. Terminal Aerodrome Forecast
 - L. Type of Report
 - M. Location Identifier and Issuance Date/Time
 - N. Valid Period
 - O. Forecast and Area Forecasts
 - P. Communication and Product Headers
 - Q. Precautionary Statements and Synopsis
 - R. VFR Clouds and Weather
 - S. Amendments
 - T. Winds and Temperatures Aloft Forecasts
 - U. Severe Weather Reports and Forecasts
2. Graphic Weather Products
 - A. Surface Analysis Chart
 - B. Weather Depiction Chart
 - C. Radar Summary Chart
 - D. Low-Level Significant Weather Prognostic
 - E. Significant Weather Panels
 - F. Surface Prognostic Panels

COMPLETION STANDARDS:

This lesson will have been successfully completed when the student, by oral or written examination, shows that he or she can procure and interpret the various weather reports, forecasts, and depictions contained in this lesson.

3-23 - LESSON 23: INTERPRETING WEATHER DATA - PART 2

(Ground: 1.2 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge of the elements contained within this lesson.

CONTENTS:

3. Preflight Weather Briefings
 - A. Standard Weather Briefing
 - B. Abbreviated Briefing
 - C. Outlook Briefing
 - D. Supplemental Weather Sources
4. In-flight Weather Services
 - A. En route Flight Advisory Service
 - B. In-Flight Aviation Weather Advisories
 - C. AIRMETs and SIGMETs
 - D. Severe Weather Forecast Alerts
 - E. Center Weather Advisories
 - F. Hazardous In-Flight Weather Advisory Service
 - G. Automated Weather Observing System
 - H. Automated Surface Observation System
 - I. NEXRAD & NEXGEN Products

COMPLETION STANDARDS:

This lesson will have been successfully completed when the student, by oral or written examination, shows that he or she can procure, interpret, and use the aviation weather services contained in this lesson to help contribute to making a “go/no-go” and/or inflight decision based on available weather information.

3-24 - LESSON 24: BASIC NAVIGATION - PART 1

(Ground: 1.0 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge of the elements contained within this lesson.

CONTENTS:

1. Basic Navigation
 - A. Sectional Charts
 - B. VFR Terminal Area Charts
 - C. World Aeronautical Charts
 - D. Latitude and Longitude
 - E. Projections
 - F. Legend
 - G. Magnetic Variation & Deviation
 - H. Airport Symbols
 - I. Airport Data
 - J. Navigation Aids
 - K. Airspace
 - L. Obstructions
 - M. Topographical Information
2. Flight Computers
 - A. Navigation Theory
 - B. Compensating for Wind
 - C. In-Flight Calculations
 - D. E6B Navigational Computer (Slide Graphic Computer)
 - E. Electronic Flight Computers

COMPLETION STANDARDS:

The student will have successfully completed this lesson when, by oral or written examination, he or she demonstrates an understanding of the various elements relating to navigation and use of flight computers in support of navigation.

3-25 - LESSON 25: BASIC NAVIGATION - PART 2

(Ground: 1.0 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge of the elements contained within this lesson.

CONTENTS:

3. Pilotage and Dead Reckoning
 - A. Pilotage
 - i. Selecting Checkpoints
 - ii. Following a Route
 - iii. Orientation
 - B. Dead Reckoning
 - i. Navigation Plotter
 - ii. Flight Planning
 - iii. Navigation Log
 - iv. Flight Plan
 - v. Position Reports
 - vi. Flying Over Hazardous Terrain
 - vii. Diversions
4. Sources of Flight Information
 - A. Airport / Facility Directory
 - B. Directory Legend
 - C. Aeronautical Information Manual (AIM)
 - D. Notices to Airmen
 - E. Advisory Circulars

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination the student demonstrates an ability to accurately plan a navigation route using pilotage, dead reckoning, and an understanding of the resources available to assist in safe and informed flight planning.

3-26 - LESSON 26: RADIO NAVIGATION - PART 1

(Ground: 1.0 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge of the elements contained within this lesson.

CONTENTS:

1. VHF Omni-directional Range (VOR)
 - A. Principles of Operation
 - B. VOR Airborne Equipment
 - C. VOT Check
 - D. Course Information
 - E. To-From Indicator
 - F. Using VOR Navigation
 - G. Intercepting a VOR Radial
 - H. Time and Distance
 - I. VOR Orientation
 - J. VOR Cautions
 - K. VOR Advantages
 - L. VOR Test Signals
 - M. Classes of VOR Facilities
2. Distance Measuring Equipment (DME)
 - A. DME Theory
 - B. Using DME
 - C. DME Identification
3. Automatic Direction Finder (ADF)
 - A. ADF Equipment
 - B. ADF Receiver
 - C. ADF Bearing Indicator
 - D. Homing
 - E. Orientation
 - F. Tracking
 - G. ADF Intercepts
 - H. Time-to-Station Estimates
 - I. Movable Card Indicators
 - J. ADF Cautions

COMPLETION STANDARDS:

The student will have successfully completed this lesson when, by oral or written examination, he or she demonstrates an understanding of Radio Navigation with concerns to VOR, DME & ADF.

3-27 - LESSON 27: RADIO NAVIGATION - PART 2

(Ground: 1.0 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge of the elements contained within this lesson.

CONTENTS:

- 4. GPS
 - A. RNAV Operation
 - B. Global Positioning System (GPS)
 - C. GPS Operation
 - D. GPS Accuracy
 - E. GPS Receivers
 - F. VFR Use of GPS
- 5. Navigation Indicators
 - A. Radio Magnetic Indicator
 - B. Horizontal Situation Indicator

COMPLETION STANDARDS:

The student will have successfully completed this lesson when by oral or written examination, he or she demonstrates an understanding of the components and principles of the Global Positioning System as well as HSI and RMI indicators.

3-28 - LESSON 28: CROSS-COUNTRY FLYING

(Ground: 1.0 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge of the elements contained within this lesson.

CONTENTS:

1. The Flight Planning Process
 - A. Flight Overview & Initial Planning / Diversion and Alternates
 - B. Developing the Route, Fuel Requirements & Alternatives
 - C. Collecting runway and facility data for airports of intended use and alternatives
 - D. Preflight Weather Briefing
 - E. Completing the Navigation Log
 - F. Flight Plan & Final Planning Stage
 - G. Preflight Inspection & Cockpit Management
2. The Flight
 - A. KOUN to KSNL
 - B. KSNL to F81
 - C. F81 to KSNL
 - D. KSNL to KOUN
3. Alternate Planning
 - A. Delays
 - B. Destinations

COMPLETION STANDARDS:

The student will have successfully completed this lesson when, by oral or written examination, he or she demonstrates an understanding of how to plan a cross-country flight from start to finish.

3-29 - LESSON 29: AVIATION PHYSIOLOGY - PART 1

(Ground: 1.0 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge of the elements contained within this lesson.

CONTENTS:

1. Physiology
 - A. Vision in Flight
 - B. The Eye
 - C. Cones
2. Physiological Aspects of Night Flying
 - A. Components of Eye Essential for Night Flight
 - B. Adaptation to Changing Light
 - C. Accommodating Changes in Light
 - D. Visual Illusions Associated with Lighting Conditions
 - E. Physical Condition and Visual Acuity
 - F. Night Myopia
 - G. Methods for Increasing Vision Effectiveness
3. Spatial Disorientation
 - A. Visual Sense
 - B. Vestibular Sense
 - C. Kinesthetic Sense
 - D. Disorientation
 - E. Spatial Illusions
 - i. Coriolis Illusion
 - ii. Leans
 - iii. Somatogravic Illusions
 - iv. False Horizons
 - F. Flicker Vertigo
 - G. Motion Sickness

COMPLETION STANDARDS:

The student will have successfully completed this lesson when, by oral or written examination, he or she demonstrates an understanding of flight physiology, associated aspects of night flying, and spatial disorientation.

3-30 - LESSON 30: AVIATION PHYSIOLOGY - PART 2

(Ground: 1.0 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge of the elements contained within this lesson.

CONTENTS:

4. Respiration and Altitude
 - A. Respiration
 - B. Hypoxia
 - C. Hypoxic Hypoxia
 - D. Hypemic or Anemic Hypoxia
 - E. Stagnant Hypoxia
 - F. Histotoxic Hypoxia
 - G. Supplemental Oxygen
 - H. Hyperventilation
 - I. Pressure Effects
 - J. Ears
 - K. Sinuses
 - L. Teeth
 - M. Gastrointestinal Tract
 - N. Scuba Diving
5. Alcohol, Drugs, and Performance
 - A. Depressants
 - B. Alcohol
 - C. Tranquilizers
 - D. Motion Sickness Medication
 - E. Stomach Medication
 - F. Decongestants and Antihistamines
 - G. Stimulants
 - H. Amphetamines
 - I. Caffeine
 - J. Nicotine
 - K. Pain Killers
 - L. Analgesics
 - M. Local Anesthetics
 - N. Other Problem Drugs
 - O. Antibiotics

COMPLETION STANDARDS:

The student will have successfully completed this lesson when, by oral or written examination, he or she demonstrates an understanding of the effects of altitude, respiration, drugs, alcohol, and their effect on pilot performance.

3-31 - LESSON 31: ADM & CREW / COCKPIT RESOURCE MANAGEMENT

(Ground: 1.0 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge of the elements contained within this lesson.

CONTENTS:

1. Aeronautical Decision Making (ADM) & Judgment
 - A. The Decision Process
 - B. Hazardous Attitudes
 - C. Antidotes for Hazardous Attitudes
 - D. Risk Assessment
 - E. Stress Reduction
 - F. Self-Assessment
 - G. PAVE & Decide Models
2. Crew Resource Management & Cockpit Resource Management
 - A. Crew Resource Management
 - B. Cockpit Resource Management
 - C. Controlled Flight into Terrain (CFIT)
 - D. Preparation
 - E. Preflight
 - F. Departure
 - G. En-route
 - H. Arrival
 - I. Cockpit Automation

COMPLETION STANDARDS:

The student will have successfully completed this lesson when, by oral or written examination, he or she demonstrates an understanding of factors that can affect the decision making process and techniques that can be used in cockpit resource management to contribute to the safety of the flight.

3-32 - LESSON 32: FINAL TEST & EVALUATION

(Ground: 2.0 Hours)

OBJECTIVES:

To determine the flight student's level of knowledge on the subject matter covered during this ground curriculum.

REFERENCES:

1. Helicopter Flying Handbook
2. The FAR/AIM Manual
3. Aviation Instructor's Handbook
4. Risk Management Handbook
5. Pilot's Encyclopedia of Aeronautical Knowledge
6. Aviation Weather For Pilots
7. Aviation Weather Services

CONTENTS:

This examination will review flight instructor material. The examination shall, as a minimum, consist of (but is not limited to) at least 25 FAA computer knowledge examination type multiple choice questions.

COMPLETION STANDARDS:

Grading is based on the traditional scale:

- A = 90% to 100%
- B = 80% to 89%
- C = 70% to 79%
- D = 60% to 69%
- F = below 60%

Students who do not achieve a satisfactory score (80 +) must be scheduled for additional instruction in the area(s) of deficiency identified by the examination or must retake the course.

3-33 - LESSON 33: FAA COMPUTER KNOWLEDGE EXAMINATION

OBJECTIVES:

This lesson provides the student an opportunity to participate in the FAA Helicopter/Rotorcraft Flight Instructor Pilot written knowledge examination and the FAA Fundamentals of Instruction written knowledge examination.

CONTENTS:

This examination will cover all topics found within the applicable Airman Certification Standards and FAR/AIM sections. There are 100 and 50 randomly selected questions for the Flight Instructor and Fundamentals of Instructions examinations, respectively. The question will cover all topics addressed within the Flight Instructor Pilot Ground Course.

COMPLETION STANDARDS:

The student completes the course when he or she passes the FAA Computer Knowledge Tests with a minimum score of 70% corrected to 100%. Students who do not achieve this score must be scheduled for additional instruction and re-examination, or be re-enrolled in the course.

KNOWLEDGE AREAS ON THE TESTS:

The tests are comprehensive, as they must test an applicant's knowledge in many subject areas. All test questions are the objective, multiple choice type, with three choices of answers; each question can be answered by the selection of a single response. Each test question is independent of other questions, that is, a correct response to one does not depend upon, or influence the correct response to another. The maximum time allowed for taking the Flight Instructor Pilot knowledge examination is 2.5 hours. The maximum time allowed for taking the Fundamentals of Instruction knowledge examination is 1.5 hours.

When taking a test, keep the following points in mind:

1. Answer each question in accordance with the latest regulations and procedures.
2. Read each question carefully before looking at the possible answers. You should clearly understand the problem before attempting to solve it.
3. After formulating an answer, determine which choice most nearly corresponds with the answer. The answer chosen should completely resolve the problem.
4. From the answers given, it may appear that there is more than one possible answer. However, there is only one answer that is correct and complete. The other answers are incomplete, erroneous, or represent common misconceptions.
5. If a certain question is difficult for you, it is best to mark it for RECALL and proceed to the next question. After you answer the less difficult questions, return to those, which you marked for recall and answer them. The recall marking procedure will be explained to you prior to starting the test. Although the computer should alert you to unanswered questions, make sure every question has an answer recorded. This procedure will enable you to use the available time to maximum advantage.
6. When solving a calculation problem, select the answer nearest your solution. The problem has been checked with various types of calculators; therefore, if you have solved it correctly, your answer will be closer to the correct answer than any of the other choices.

REMEMBER:

You always have an opportunity to take a sample test before the actual test begins.

ARRIVING FOR THE TEST:

When you arrive for the test, you should have a flight computer, a pocket calculator, a plotter, and a **PENCIL (NO PENS PLEASE)**. If you plan to use an electronic flight computer, the test monitor must ask you to remove the batteries to ensure that no information is in memory. **DO NOT LOSE THE AIRMAN TEST REPORT**, as you will need to present it to the examiner prior to taking the practical test. Loss of this report means that you will have to request a duplicate copy from the FAA in Oklahoma City.

CHEATING OR OTHER UNAUTHORIZED CONDUCT:

When entering the test area, you are permitted to take only scratch paper furnished by the test administrator and an authorized aviation computer, plotter, etc., approved for use in accordance with FAA Order 8080.6C, Conduct of Airmen Knowledge Tests via the Computer Medium, and AC 60-11C, Aids Authorized for Use by Airman Written Test Applicants. The FAA has directed testing centers to stop a test any time a test administrator suspects a cheating incident has occurred. An FAA investigation will then follow. If the investigation determines that cheating or other unauthorized conduct has occurred, any airman certificate that you hold may be revoked, and you may not be allowed to take a retest for 1 year.

RE-TESTING PROCEDURES:

If the score on the airman test report is 70 or above, in most cases the report is valid for 24 calendar months. You may elect to retake the test in anticipation of a better score. Prior to retaking the test, you must give your current airman test report to the Test Monitor. Remember, the score of the latest test you take will become the official test score.