

Semper Fly Helicopters

14 CFR PART 141 FLIGHT SCHOOL



**AVIA 4632 FLIGHT INSTRUCTOR
FLIGHT ROTORCRAFT / HELICOPTER
CERTIFICATION COURSE
FLIGHT TRAINING MANUAL**

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SECTION 1 - FLIGHT TRAINING SYLLABUS

1.1 - Course Requirements and Objectives

Enrollment Prerequisites

The Semper Fly Helicopter Flight Instructor Rotorcraft / Helicopter Flight Training Course is designed to have the student concurrently enrolled in the associated Semper Fly Helicopters Flight Instructor Rotorcraft / Helicopter Ground 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.

Flight Training Course Objective

The student will obtain the knowledge, skill, and aeronautical experience necessary to meet the requirements for a Flight Instructor Certificate with a Rotorcraft / Helicopter category rating.

Flight Training Course Completion Standards

The student must demonstrate through written tests, flight tests, and show through appropriate records that he meets the knowledge, skill, and experience requirements necessary to obtain a Flight Instructor Certificate with a Rotorcraft / Helicopter category rating, while maintaining the standards set in the Semper Fly Helicopters Standard Operating Procedures and Safety Policies Manual and the Airman Certification Standards.

Flight Training Curriculum

Flight school for the Flight Instructor Pilot student is accomplished by enrollment in the Semper Fly Helicopters pilot course and a minimum of 25.0 flight hours. An outline for each lesson is provided in the following Flight Training Syllabus. The flight instructor will be responsible for student knowledge who obtained credit by exam or who have not taken these courses.

Flight Training Textbooks

The flight-training course is structured by the Helicopter Pilot Textbook. Jeppesen Sanderson, Inc., the Federal Regulations FAR/AIM. Flight 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>
Flight Stage One	25.0				19.2	
SUB-TOTAL	25.0	0.0	0.0	0.0	19.2	

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	The safety of the flight is in question and/or the instructor was required to take control of the aircraft.
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 FLIGHT TRAINING

OBJECTIVES:

The primary objective during flight training is to develop and refine techniques of instruction and mastery of maneuvers. The student will provide instruction on ground operations, flight maneuvers, and inflight emergencies. The student must develop the proficiency for their check ride using Flight Instructor Airman Certificate Standards (ACS).

Each student must review the syllabus content material prior to arriving for training.

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:

Refer to individual lesson completion standards.

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LESSON	DUAL	ORAL	PAGE
<u>2.1 - Lesson 1: Preflight Procedures</u>	1.2	0.8	2-3
<u>2.2 - Lesson 2: Airport & Heliport Operations</u>	1.2	0.8	2-4
<u>2.3 - Lesson 3: Hovering Maneuvers</u>	1.2	0.8	2-5
<u>2.4 - Lesson 4: Takeoffs, Landings, & Go-arounds - Part 1</u>	1.2	0.8	2-6
<u>2.5 - Lesson 5: Takeoffs, Landings, & Go-arounds - Part 2</u>	1.2	0.8	2-7
<u>2.6 - Lesson 6: Takeoffs, Landings, & Go-arounds - Part 3</u>	1.2	0.8	2-8
<u>2.7 - Lesson 7: Fundamentals of Flight - Part 1</u>	1.2	0.8	2-9
<u>2.8 - Lesson 8: Fundamentals of Flight - Part 2</u>	1.2	0.8	2-10
<u>2.9 - Lesson 9: Performance Maneuvers - Part 1</u>	1.2	0.8	2-11
<u>2.10 - Lesson 10: Performance Maneuvers - Part 2</u>	1.2	0.8	2-12
<u>2.11 - Lesson 11: Performance Maneuvers - Part 3</u>	1.2	0.8	2-13
<u>2.12 - Lesson 12: Emergency Operations - Part 1</u>	1.2	0.8	2-14
<u>2.13 - Lesson 13: Emergency Operations - Part 2</u>	1.2	0.8	2-15
<u>2.14 - Lesson 14: Emergency Operations - Part 3</u>	1.2	0.8	2-16
<u>2.15 - Lesson 15: Special Operations</u>	1.2	0.8	2-17
<u>2.16 - Lesson 16: Instructor Directed Maneuvers</u>	3.5	2.4	2-18
<u>2.17 - Lesson 17: Touchdown Autorotations</u>	2.5	1.6	2-19
<u>2.18 - Lesson 18: Flight Instructor Stage Check</u>	1.0	3.2	2-20
FLIGHT STAGE ONE - TOTAL HOURS	25.0	19.2	

2.1 - LESSON 1: PREFLIGHT PROCEDURES

(Dual: 1.2 Hours, Pre/Post Flight Briefings: 0.8 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge of the elements of a preflight inspection, as applicable to the helicopter used for the practical test, crew resource management, engine starting / rotor engagement and before takeoff checks.

CONTENTS:

1. Preflight Inspection
2. Single-Pilot Resource Management
3. Engine Starting and Rotor Engagement
4. Before Takeoff Check

COMPLETION STANDARDS:

The lesson will be completed when the student demonstrates an instructional knowledge of the elements pertaining to preflight inspection, single-pilot resource management, engine starting / rotor engagement, and before takeoff checks.

2.2 - LESSON 2: AIRPORT & HELIPORT OPERATIONS

(Dual: 1.2 Hours, Pre/Post Flight Briefings: 0.8 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge of the elements of radio communications and ATC light signals, traffic patterns, and airport / heliport markings and lighting.

CONTENTS:

1. Radio Communications and ATC Light Signals
2. Traffic Patterns
3. Airport & Heliport Markings and Lighting

COMPLETION STANDARDS:

The lesson will be completed when the student demonstrates an instructional knowledge of the elements pertaining to ATC light signals, traffic patterns, and airport / heliport markings and lighting.

2.3 - LESSON 3: HOVERING MANEUVERS

(Dual: 1.2 Hours, Pre/Post Flight Briefings: 0.8 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge of the elements of vertical takeoff and landing, surface taxi, hover taxi, air taxi and slope operations.

CONTENTS:

1. Vertical Takeoff and Landing
2. Surface Taxi
3. Hover Taxi
4. Air Taxi
5. Slope Operations

COMPLETION STANDARDS:

The lesson will be completed when the student demonstrates an instructional knowledge of the elements pertaining to vertical takeoff and landing, surface taxi, hover taxi, air taxi and slope operations.

2.4 - LESSON 4: TAKEOFFS, LANDINGS, & GO-AROUNDS - PART 1

(Dual: 1.2 Hours, Pre/Post Flight Briefings: 0.8 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge of the elements of normal and crosswind takeoffs and climbs, maximum performance takeoff and climbs, and rolling takeoffs.

CONTENTS:

1. Normal and crosswind takeoff and climb
2. Maximum takeoff and climb
3. Rolling takeoff

COMPLETION STANDARDS:

The lesson will be completed when the student demonstrates an instructional knowledge of the elements of normal and crosswind takeoffs and climbs, maximum performance takeoff and climbs, and rolling takeoffs.

2.5 - LESSON 5: TAKEOFFS, LANDINGS, & GO-AROUNDS - PART 2

(Dual: 1.2 Hours, Pre/Post Flight Briefings: 0.8 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge of the elements of normal and crosswind approaches, steep approaches, shallow approaches, and run on landings.

CONTENTS:

4. Normal and Crosswind Approach
5. Steep Approach
6. Shallow Approach
7. Run-on Landing

COMPLETION STANDARDS:

The lesson will be completed when the student demonstrates an instructional knowledge of the elements of normal and crosswind approaches, steep approach, shallow approach and run on landings.

2.6 - LESSON 6: TAKEOFFS, LANDINGS, & GO-AROUNDS - PART 3

(Dual: 1.2 Hours, Pre/Post Flight Briefings: 0.8 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge of the elements of normal and crosswind approaches, steep approaches, shallow approaches and run on landings, and go-arounds.

CONTENTS:

8. Normal and Crosswind Approach
9. Steep Approach
10. Shallow Approach
11. Run-on Landing
12. Go-arounds

COMPLETION STANDARDS:

The lesson will be completed when the student demonstrates an instructional knowledge of the elements of normal and crosswind approaches, steep approaches, shallow approaches and run on landings, and go-arounds.

2.7 - LESSON 7: FUNDAMENTALS OF FLIGHT - PART 1

(Dual: 1.2 Hours, Pre/Post Flight Briefings: 0.8 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge of the elements of straight and level flight and level turns.

CONTENTS:

1. Straight and Level Flight
2. Level Turns

COMPLETION STANDARDS:

The lesson will be completed when the student demonstrates an instructional knowledge of the elements of straight and level flight and level turns.

2.8 - LESSON 8: FUNDAMENTALS OF FLIGHT - PART 2

(Dual: 1.2 Hours, Pre/Post Flight Briefings: 0.8 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge of the elements of straight climbs and climbing turns as well as straight descents and descending turns.

CONTENTS:

3. Straight Climbs
4. Climbing Turns
5. Straight Descents
6. Descending Turns

COMPLETION STANDARDS:

The lesson will be completed when the student demonstrates an instructional knowledge of the elements of straight climbs and climbing turns as well as straight descents and descending turns.

2.9 - LESSON 9: PERFORMANCE MANEUVERS - PART 1

(Dual: 1.2 Hours, Pre/Post Flight Briefings: 0.8 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge on the elements of rapid deceleration.

CONTENTS:

1. Rapid Deceleration

COMPLETION STANDARDS:

The lesson will be completed when the student demonstrates an instructional knowledge of the elements of rapid deceleration.

2.10 - LESSON 10: PERFORMANCE MANEUVERS - PART 2

(Dual: 1.2 Hours, Pre/Post Flight Briefings: 0.8 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge on the elements of the straight-in autorotation.

CONTENTS:

2. Straight-in Autorotation

COMPLETION STANDARDS:

The lesson will be completed when the student demonstrates an instructional knowledge on the elements of the straight in autorotation.

2.11 - LESSON 11: PERFORMANCE MANEUVERS - PART 3

(Dual: 1.2 Hours, Pre/Post Flight Briefings: 0.8 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge on the elements of the 180° autorotation.

CONTENTS:

3. 180° Autorotation

COMPLETION STANDARDS:

The lesson will be completed when the student demonstrates an instructional knowledge on the techniques and safe practices to be used when teaching the 180° autorotation.

2.12 - LESSON 12: EMERGENCY OPERATIONS - PART 1

(Dual: 1.2 Hours, Pre/Post Flight Briefings: 0.8 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge on the elements of power failure at a hover, power failure at altitude, and settling with power.

CONTENTS:

1. Power Failure at a Hover
2. Power Failure at Altitude
3. Settling With Power

COMPLETION STANDARDS:

The lesson will be completed when the student demonstrates an instructional knowledge on the elements of power failure at a hover, power failure at altitude, and settling with power.

2.13 - LESSON 13: EMERGENCY OPERATIONS - PART 2

(Dual: 1.2 Hours, Pre/Post Flight Briefings: 0.8 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge on the elements of low rotor RPM recovery, anti-torque system failure, and dynamic rollover.

CONTENTS:

4. Low Rotor RPM Recovery
5. Anti-torque System Failure
6. Dynamic Rollover

COMPLETION STANDARDS:

The lesson will be completed when the student demonstrates an instructional knowledge on the elements of low rotor RPM recovery, anti-torque system failure, and dynamic rollover.

2.14 - LESSON 14: EMERGENCY OPERATIONS - PART 3

(Dual: 1.2 Hours, Pre/Post Flight Briefings: 0.8 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge on the elements of ground resonance, low “G” conditions, systems and malfunctions, and emergency equipment and survival gear.

CONTENTS:

7. Ground resonance
8. Low “G” Conditions
9. Systems & Malfunctions
10. Emergency Equipment and Survival Gear

COMPLETION STANDARDS:

The lesson will be completed when the student demonstrates an instructional knowledge on the elements of ground resonance, low “G” conditions, systems and malfunctions, and emergency equipment and survival gear.

2.15 - LESSON 15: SPECIAL OPERATIONS

(Dual: 1.2 Hours, Pre/Post Flight Briefings: 0.8 Hours)

OBJECTIVES:

To determine that the student exhibits instructional knowledge on the elements of confined area and pinnacle operations.

CONTENTS:

1. Confined Area Operations
2. Pinnacle Operations

COMPLETION STANDARDS:

The lesson will be completed when the student demonstrates an instructional knowledge on the elements of confined area and pinnacle operations.

2.16 - LESSON 16: INSTRUCTOR DIRECTED MANEUVERS

(Dual: 3.5 Hours, Pre/Post Flight Briefings: 2.4 Hours)

OBJECTIVES:

To determine that the student possesses the skill necessary to perform all the required maneuvers to the Flight Instructor Helicopter Airman Certification Standards.

CONTENTS:

1. Hovering Maneuvers
 - A. Vertical Takeoff and Landing
 - B. Slope Operations
 - C. Surface Taxi
 - D. Hover Taxi
 - E. Air Taxi
2. Takeoffs, Landings, and Go-Arounds
 - A. Normal and Crosswind Takeoff
 - B. Normal and Crosswind Approach
 - C. Maximum Performance Takeoff and Climb
 - D. Steep Approach
 - E. Rolling Takeoff
 - F. Shallow Approach and Run-on Landing
 - G. Go-Around
3. Performance Maneuvers
 - A. Rapid Deceleration
 - B. Straight in Autorotation
 - C. 180° Autorotation
4. Emergency Operations
 - A. Power Failure at a Hover
 - B. Power Failure at Altitude
 - C. Systems and Equipment Malfunctions
 - D. Settling-With-Power
 - E. Low Rotor RPM Recovery
5. Special Operations
 - A. Confined Area Operation
 - B. Pinnacle / Platform Operations
6. Fundamentals of Flight
 - A. Straight and Level Flight & Turns
 - B. Straight Climbs and Descents
 - C. Climbing and Descending Turns

COMPLETION STANDARDS:

The lesson will be completed when the student demonstrates an ability to perform all of the Flight Instructor Helicopter ACS required maneuvers to their applicable standards.

2.17 - LESSON 17: TOUCHDOWN AUTOROTATIONS

(Dual: 2.5 Hours, Pre/Post Flight Briefings: 1.6 Hours)

OBJECTIVES:

To develop the students ability to safely perform touchdown autorotations.

CONTENTS:

Touchdown Autorotations

COMPLETION STANDARDS:

The lesson will be considered complete when the student displays an ability to consistently perform touchdown autorotations to the standards set forth in the Flight Instructor Helicopter Airman Certificate Standards.

2.18 - LESSON 18: FLIGHT INSTRUCTOR STAGE CHECK

(Dual: 1.0 Hours, Pre/Post Flight Briefings: 3.2 Hours)

OBJECTIVES:

To verify that the student can perform all maneuvers within ACS standards in preparation for the practical test.

CONTENTS:

1. Fundamentals of Instruction
 - A. Human Behavior
 - B. The Learning Process
 - C. Effective Communication
 - D. The Teaching Process
 - E. Assessment
 - F. Planning Instructional Activity
 - G. Instructor Responsibilities & Professionalism
 - H. Techniques of Flight Instruction
 - I. Risk Management
2. Preflight preparation
 - A. Certificates and documents
 - B. Airworthiness requirements
 - C. Weather information
 - D. Cross-country flight planning
 - E. National airspace system
 - F. Performance and limitations
 - G. Operation of systems
3. Preflight procedures
 - A. Preflight inspection
 - B. Cockpit management
 - C. Engine starting and rotor engagement
 - D. Before takeoff check
4. Airport and heliport operations
 - A. Radio communications and ATC light signals
 - B. Traffic patterns
 - C. Airport/heliport runway, helipad, and taxiway signs, markings, and lighting
5. Hovering maneuvers
 - A. Vertical takeoff and landing
 - B. Slope operations
 - C. Hover taxi
 - D. Air taxi

6. Takeoffs, landings, and go-arounds
 - A. Normal and crosswind takeoff and climb
 - B. Normal and crosswind approach
 - C. Maximum performance takeoff and climb
 - D. Steep approach
 - E. Confined area operations
 - F. Pinnacle/platform operations
 - G. Shallow approach and running landing
 - H. Go-around
7. Performance maneuvers
 - A. Rapid deceleration
 - B. Straight in autorotation
 - C. 180° autorotation
8. Navigation
 - A. Pilotage and dead reckoning
 - B. Radio navigation and radar services
 - C. Diversion
 - D. Lost procedures
9. Emergency procedures
 - A. Power failure at a hover
 - B. Power failure at altitude
 - C. Systems and equipment malfunction
 - D. Recovery from unusual attitudes
 - E. Settling-with-power
 - F. Low rotor RPM recovery
 - G. Anti-torque system failure
 - H. Dynamic rollover
 - I. Ground Resonance
 - J. Low G conditions
 - K. Emergency equipment and survival gear
10. Night operations
 - A. Night preparation
11. Post-Flight procedures
 - A. After landing and securing

COMPLETION STANDARDS:

This lesson will be considered completed when the student has performed all required maneuvers to a level that is at or above those set forth in the Flight Instructor Helicopter Airman Certificate Standards.