

UNIVERSITY OF OKLAHOMA - DEPARTMENT OF AVIATION
ADDITIONAL FLIGHT INSTRUCTOR RATING COURSE
MULTI-ENGINE - AIRPLANE
GROUND AND FLIGHT TRAINING SYLLABUS

OBJECTIVE

During this course the student will review and reinforce his knowledge of aerodynamics, aircraft systems, aircraft performance, emergency procedures, flight maneuvers and operations, and instrument flight as they apply to multi-engine aircraft. The student will also develop the instructional knowledge of these subject areas necessary for the Multi-engine Flight Instructor Certificate.

COMPLETION STANDARD

This course is complete when the student has taken the multi-engine instructor course final exam with a minimum passing score of 70%, and the instructor has reviewed each incorrect response to ensure complete understanding of the material.

UNIVERSITY OF OKLAHOMA - DEPARTMENT OF AVIATION
ADDITIONAL FLIGHT INSTRUCTOR RATING COURSE
MULTI-ENGINE - AIRPLANE
GROUND AND FLIGHT TRAINING SYLLABUS

LESSON TIME ALLOCATION

<u>LESSON</u>	<u>TIME</u>
1	3.0*
2	2.0
3	3.0
4	2.0
5	2.0
6	3.0
7	3.0
8	2.0
 TOTAL	 <u>20.0</u>

UNIVERSITY OF OKLAHOMA - DEPARTMENT OF AVIATION
ADDITIONAL FLIGHT INSTRUCTOR RATING COURSE
MULTI-ENGINE - AIRPLANE
GROUND AND FLIGHT TRAINING SYLLABUS

GROUND LESSON 1

3.0 Hours

Text Reference:

Airplane Flying Handbook, FAA-H-8083-3, Chapter 13 "Transition to Different Airplanes and Systems," Multi-Engine Manual, Jeppesen Sanderson, Chapter 2, "Understanding Your Airplane"

Lesson Objective:

The student will review basic and advanced aircraft systems as well as their associated emergency procedures as they apply to multi-engine aircraft and will develop instructional knowledge of these areas.

Content:

- Powerplant
- Propeller Systems
- Fuel System
- Fuel Injection Systems
- Turbocharging/Supercharging
- Electrical Systems
- Hydraulic Systems
- Landing Gear Systems
- De-Icing/Anti-Icing Systems
- Cabin Heat Systems
- Pressurization Systems
- Minimum Equipment List

Basic Emergency Procedures

- Pilots Operating Handbook
- Forced Landing
- Hydraulic System Failures
- Electrical System Failures
- Landing Gear Malfunctions
- Communication/Navigation Systems Failure
- In-flight Fire
- Lost Procedures

UNIVERSITY OF OKLAHOMA - DEPARTMENT OF AVIATION
ADDITIONAL FLIGHT INSTRUCTOR RATING COURSE
MULTI-ENGINE - AIRPLANE
GROUND AND FLIGHT TRAINING SYLLABUS

Ground Lesson 1 (Continued)

Completion Standards:

The student will demonstrate through oral discussion, practical demonstration, or quizzing the knowledge and understanding required to effectively teach multi-engine aircraft systems and emergency procedures.

UNIVERSITY OF OKLAHOMA - DEPARTMENT OF AVIATION
ADDITIONAL FLIGHT INSTRUCTOR RATING COURSE
MULTI-ENGINE - AIRPLANE
GROUND AND FLIGHT TRAINING SYLLABUS

GROUND LESSON 2**2.0 Hours****Text Reference:**

Airplane Flying Handbook, FAA-H-8083-3, Chapter 14 "Transition to a Multiengine Airplane," Multi-Engine Manual, Jeppesen Sanderson, Chapter 2, "Understanding Your Airplane"

Lesson Objective:

The student will review aircraft performance considerations as they apply to multi-engine aircraft and will develop instructional knowledge of these areas.

Content:

- Multi-Engine V-speeds
- Service Ceilings
- Weight and Balance Effects
- Weight and Balance Computations
- Performance Factors
- Takeoff Charts
- Accelerate/Stop Distance
- Climb Rate Charts
- Cruise Performance Charts
- Landing Distance Charts
- Stall Speed Charts
- Power/Performance Charts

Completion Standards:

The student will demonstrate through oral discussion, practical demonstration, or quizzing the knowledge and understanding required to effectively teach multi-engine performance considerations.

UNIVERSITY OF OKLAHOMA - DEPARTMENT OF AVIATION
ADDITIONAL FLIGHT INSTRUCTOR RATING COURSE
MULTI-ENGINE - AIRPLANE
GROUND AND FLIGHT TRAINING SYLLABUS

GROUND LESSON 3**3.0 Hours****Text Reference:**

Airplane Flying Handbook, FAA-H-8083-3, Chapter 14 "Transition to a Multiengine Airplane," Multi-Engine Manual, Jeppesen Sanderson, Chapter 3, "Discovering Aerodynamics"

Lesson Objective:

The student will review basic and advanced aerodynamics as they apply to multi-engine aircraft and will develop instructional knowledge of these areas.

Content:

- Thrust Vectors/Induced Airflow
- Turning Tendencies
- Critical Engine
- Minimum Control Speed (V_{mc})
- Stability
- Effects of Weight
- Inflight Forces (Single-engine)
- Control Application

Completion Standards:

The student will demonstrate through oral discussion, practical demonstration, or quizzing the knowledge and understanding required to effectively teach the aerodynamics of multi-engine flight.

MEIF 04/01/22

7

UNIVERSITY OF OKLAHOMA - DEPARTMENT OF AVIATION
ADDITIONAL FLIGHT INSTRUCTOR RATING COURSE
MULTI-ENGINE - AIRPLANE
GROUND AND FLIGHT TRAINING SYLLABUS

GROUND LESSON 4

2.0 Hours

Intermediate Exam

Completion Standards:

The student will complete the Intermediate Exam with a minimum passing score of 70%, and the instructor will review each incorrect response to ensure complete understanding of the material.

UNIVERSITY OF OKLAHOMA - DEPARTMENT OF AVIATION
ADDITIONAL FLIGHT INSTRUCTOR RATING COURSE
MULTI-ENGINE - AIRPLANE
GROUND AND FLIGHT TRAINING SYLLABUS

GROUND LESSON 5

2.0 Hours

Text Reference:

14 CFR, Section 61, Subpart H "Flight Instructors"
Commercial Pilot Practical Test Standards, "For Airplane Single-
and Multi-Engine Land and Sea"
Private Pilot Practical Test Standards "For Airplane Multi-Engine
Land and Sea"
Flight Instructor Practical Test Standards "For Airplane Multi-
Engine Land and Sea"

Lesson Objective:

The student will understand the regulatory requirements for providing multi-engine flight instruction, determining Areas of Operation (AO's) that must be evaluated when a multi-engine rating is added to an existing pilot certificate, safety considerations for actual and simulated engine failures and single engine maneuvers and requirements for satisfactory performance for each AO.

Content:

- Regulatory requirements to provide instruction
- Determining AO's that must be evaluated for multi add on to an existing pilot certificate
- Requirements for satisfactory performance for each AO
- Safety Considerations (emphasis on altitudes and airspeeds at which the following maneuvers are conducted)
 - Simulated engine failure during takeoff
 - Simulated engine failure after liftoff
 - Maneuvering with one engine inoperative
 - Slow flight and stalls
 - V_{MC} Demonstration
 - Engine failure during flight
 - Instrument and visual approach-one engine inoperative

Completion Standards:

The student will demonstrate through oral discussion, practical

MEIF 04/01/22

9

UNIVERSITY OF OKLAHOMA - DEPARTMENT OF AVIATION
ADDITIONAL FLIGHT INSTRUCTOR RATING COURSE
MULTI-ENGINE - AIRPLANE
GROUND AND FLIGHT TRAINING SYLLABUS

demonstration, or quizzing the knowledge and understanding of multi-engine regulatory and practical instruction considerations.

MEIF 04/01/22 10
UNIVERSITY OF OKLAHOMA - DEPARTMENT OF AVIATION
ADDITIONAL FLIGHT INSTRUCTOR RATING COURSE
MULTI-ENGINE - AIRPLANE
GROUND AND FLIGHT TRAINING SYLLABUS

GROUND LESSON 6

3.0 Hours

Text Reference:

Multi-Engine Manual, Jeppesen Sanderson, Chapter 4, "Performing Maneuvers and Procedures"

Lesson Objective:

The student will review normal operations and maneuvers for multi-engine aircraft and will develop instructional knowledge of these areas.

Content:

- Normal Preflight Inspection
- Normal Takeoff and Landing -- Ground Operations
- Maximum Performance Takeoff and Landing
- Go-around
- Steep Power Turns
- Maneuvering During Slow Flight
- Stalls
- Private and Commercial Flight Maneuvers
- Emergency Operations
- Spin Recognition and Recovery

Completion Standards:

The student will demonstrate through oral discussion, practical demonstration, or quizzing the knowledge and understanding required to effectively teach normal operations and maneuvers for multi-engine aircraft.

MEIF 04/01/22 11
UNIVERSITY OF OKLAHOMA - DEPARTMENT OF AVIATION
ADDITIONAL FLIGHT INSTRUCTOR RATING COURSE
MULTI-ENGINE - AIRPLANE
GROUND AND FLIGHT TRAINING SYLLABUS

GROUND LESSON 7

3.0 Hours

Text Reference:

Airplane Flying Handbook, FAA-H-8083-3 "Transition a Multiengine Airplane," Instrument Flying Handbook FAA-H-8083-15, Multi-Engine Manual, Jeppesen Sanderson, Chapter 5, "Mastering Engine-Out Operations"

Lesson Objective:

The student will review general engine failure procedures, engine-out maneuvers, and instrument flight procedures as applied to multi-engine aircraft and will develop instructional knowledge of these subject areas.

Content:

- Engine Failure
- Engine Shutdown/Restart
- Propeller Feathering/Unfeathering
- Takeoff and Landing
- Climb and Enroute
- V_{mc} Demonstration
- Drag Demonstration
- Spin Recognition and Recovery
- Aircraft Control
- Cockpit Management
- IFR Planning
- Instrument Approaches
- Engine Failure En route
- Engine Failure -- Straight and Level/Turns
- Instrument Approach With One Engine Inoperative

Completion Standards:

The student will demonstrate through oral discussion, practical demonstration, or quizzing the knowledge and understanding required to effectively teach general engine failure procedures, engine-out maneuvers, and instrument flight procedures in multi-engine aircraft.

MEIF 04/01/22 12
UNIVERSITY OF OKLAHOMA - DEPARTMENT OF AVIATION
ADDITIONAL FLIGHT INSTRUCTOR RATING COURSE
MULTI-ENGINE - AIRPLANE
GROUND AND FLIGHT TRAINING SYLLABUS

GROUND LESSON 8

2.0 Hours

Final Exam

Completion Standards:

The student will complete the Final Exam with a minimum passing score of 70%, and the instructor will review each incorrect response to ensure complete understanding of the material.

LESSON TIME ALLOCATION

UNIVERSITY OF OKLAHOMA - DEPARTMENT OF AVIATION
ADDITIONAL FLIGHT INSTRUCTOR RATING COURSE
MULTI-ENGINE - AIRPLANE
GROUND AND FLIGHT TRAINING SYLLABUS

<u>LESSON</u>	<u>DUAL</u>
1	1.0*
2	1.0
3	1.5
4	2.0
5	2.0
6	2.0
7	2.0
8	2.0
9	2.0
10	2.0
11	2.0
12	2.0
13	2.0
14	1.5

Totals	25.0 Hours

* The individual lesson times shown on this table are for instructor/student guidance only, they are not mandatory for a given lesson. However, the total in each category should be attained at the completion of the stage to insure the student will acquire at least the minimum amount of instruction required by FAR Part 141.

UNIVERSITY OF OKLAHOMA - DEPARTMENT OF AVIATION
ADDITIONAL FLIGHT INSTRUCTOR RATING COURSE
MULTI-ENGINE - AIRPLANE
GROUND AND FLIGHT TRAINING SYLLABUS

FLIGHT LESSON 1

DUAL - LOCAL

Lesson Objective:

During this lesson, the student will become acquainted with the training airplane from the right seat. The student will review attitude, power settings and configurations required for the performance of the listed maneuvers and procedures. Training will review both visual reference (VR) and instrument reference (IR).

Content:**Lesson Introduction**

Preflight Preparation

- Certificates and Documents
- Obtaining Weather Information

Multi-Engine Operations

- Operation of Airplane Systems
- Determining Performance and Limitations

Ground Operations

- Visual Inspection
- Cockpit Management
- Engine Starting
- Taxiing: Normal, Crosswind
- Pre-takeoff Check

Airport and Runway Markings and Lighting

Normal Takeoffs and Climbs

Traffic Pattern Operations

Radio Communications and ATC Light Signals

Visual Scanning and Collision Avoidance

Straight and Level Flight (VR-IR)

Level Turns (VR-IR)

FLIGHT LESSON 1 (Continued)

UNIVERSITY OF OKLAHOMA - DEPARTMENT OF AVIATION
ADDITIONAL FLIGHT INSTRUCTOR RATING COURSE
MULTI-ENGINE - AIRPLANE
GROUND AND FLIGHT TRAINING SYLLABUS

Climbs (VR-IR)
- Straight
- Turning

Descents (VR-IR)
- Straight
- Turning

Slow Flight

Stalls
- Power On
- Power Off
- Accelerated

Steep Turns

Drag Changes for Various Configurations

Normal Approach and Landings

After Landing Procedures

Completion Standards:

At the completion of this lesson, the student will be able to perform all the listed ground procedures from the right seat without assistance. During takeoff and landings, the student will demonstrate good directional control and maintain lift-off, climb, approach and touch down speeds within 10 knots of the correct speed. Straight and level flight, climbs and descents will be performed while maintaining airspeed within 10 knots, roll outs from turns within 15 degrees of assigned headings and specific altitudes within 150'. In addition, the student will be able to demonstrate the correct flight procedure for maneuvering during slow flight, steep power turns, and correct entry and recovery procedures for stalls from the right seat. All maneuvers at critically slow airspeed must be completed no lower than 3500' AGL.

UNIVERSITY OF OKLAHOMA - DEPARTMENT OF AVIATION
ADDITIONAL FLIGHT INSTRUCTOR RATING COURSE
MULTI-ENGINE - AIRPLANE
GROUND AND FLIGHT TRAINING SYLLABUS

FLIGHT LESSON 2

DUAL - LOCAL

Lesson Objective:

During this lesson, the student will continue to learn how to do multi-engine procedures from the right seat. The student will perform crosswind and maximum performance takeoff and climbs, crosswind and maximum performance approach and landings, and go-arounds from rejected (balked) landings. The student will practice single engine procedures and maneuvers. The student will demonstrate engine inoperative loss of directional control and the recovery technique.

Content:**Lesson Review**

Preflight Preparation

Normal Takeoff

Slow Flight

Lesson Introduction

Taxiing with Crosswind and the Use of Differential Power

Crosswind Takeoff and Climb

Ground Reference Maneuvers; Including Rectangular Patterns,
S-Turns, and Turns About a Point

Crosswind Approach and Landing

Maximum Performance Takeoff and Climb

Maximum Performance Approach and Landing

Go-Around From Rejected (Balked) Landing

Emergency Operations (Engine-Out)

- Flight Principles - Engine Inoperative
- Identification of Inoperative Engine
- Use of Controls to Counteract Yaw and Roll
- Procedures for Shutdown and Feathering

UNIVERSITY OF OKLAHOMA - DEPARTMENT OF AVIATION
ADDITIONAL FLIGHT INSTRUCTOR RATING COURSE
MULTI-ENGINE - AIRPLANE

GROUND AND FLIGHT TRAINING SYLLABUS

FLIGHT LESSON 2 (Continued)

Emergency Descent

Maneuvering With One Engine Inoperative

- Straight-and-Level Flight
- Turns in Both Directions
- Climbs and Descents to Assigned Altitudes
- Demonstration of Engine Inoperative Loss of Directional Control
- Effects of Various Airspeeds and Configurations During Engine Inoperative Performance

Completion Standards:

At the completion of this lesson, the student will be able to perform all the maneuvers listed in this lesson. The student will be able to identify the inoperative engine and use the correct control inputs to maintain straight flight. The student will have a complete and accurate knowledge of the cause, effect, and significance of engine-out minimum control speed (V_{mc}) and recognize the imminent loss of control. All engine inoperative loss of directional control demonstrations must be completed no lower than 3500 feet AGL.

MEIF 04/01/22 18
UNIVERSITY OF OKLAHOMA - DEPARTMENT OF AVIATION
ADDITIONAL FLIGHT INSTRUCTOR RATING COURSE
MULTI-ENGINE - AIRPLANE
GROUND AND FLIGHT TRAINING SYLLABUS

FLIGHT LESSON 3

DUAL - LOCAL

Lesson Objective:

During this lesson, the student will be introduced to engine failure on takeoff, initial climb, Enroute, and approaches, and landings with an inoperative engine from the right seat. The student will learn shutdown, restart procedures, and the procedures for engine inoperative loss of directional control and proper recovery. The student will be introduced to and learn emergency operation of airplane systems and flight by reference to instruments.

Content:

Lesson Review

Maximum Performance Takeoff and Climb

Emergency Operations

Maneuvering With One Engine Inoperative

Lesson Introduction

Flight by Reference to Instruments; Including Unusual Flight Attitudes, Radio Aids and Radar Services.

Emergency Operations (Engine-Out)

- Engine Failure on Takeoff Before V_{mc}
- Engine Failure After Liftoff
- Engine Failure Enroute
- Approach and Landing With Inoperative Engine
- Student Demonstration of Engine Inoperative Loss of Directional Control
- Full Feather and In-flight Restart
- Systems and Equipment Malfunctions

UNIVERSITY OF OKLAHOMA - DEPARTMENT OF AVIATION
ADDITIONAL FLIGHT INSTRUCTOR RATING COURSE
MULTI-ENGINE - AIRPLANE
GROUND AND FLIGHT TRAINING SYLLABUS

FLIGHT LESSON 3 (Continued)

Completion Standards:

At the completion of this lesson, the student will be able to maneuver the airplane during level flight with one engine inoperative, while maintaining altitude within 100' and heading within 15E. During engine-out climbs, the airspeed will be maintained within 5 knots of that recommended by the manufacturer. During simulated engine failures, the student will be able to properly identify the inoperative engine and demonstrate the correct shutdown and feathering procedures. The student will demonstrate the correct procedure for engine failure on takeoff before V_{mc} and after liftoff. Engine-out approaches and landings will be performed while maintaining airspeed during final approach within 10 knots but never below the correct approach speed. All this will be done from the right seat.

UNIVERSITY OF OKLAHOMA - DEPARTMENT OF AVIATION
ADDITIONAL FLIGHT INSTRUCTOR RATING COURSE
MULTI-ENGINE - AIRPLANE
GROUND AND FLIGHT TRAINING SYLLABUS

FLIGHT LESSON 4**DUAL - LOCAL****Lesson Objective:**

During this lesson, the student will be introduced to and learn multi-engine maneuvers and procedures for Holding Procedures as well as precision and non-precision approaches.

Content:**Lesson Introduction**

Normal Operations

- Climbs (IR)
- Descents (IR)
- Holding (IR)
- Precision Approaches (IR)
- Non-Precision Approaches (IR)
- Circling Approaches
- Missed Approaches

Completion Standards:

At the completion of this lesson, the student will demonstrate the ability to perform each of the listed maneuvers and procedures at a proficiency level that meets or exceeds those criteria outlines in the multi-engine sections of the current FAA Commercial Practical Test Standards and Instrument Rating Practical Test Standards.

UNIVERSITY OF OKLAHOMA - DEPARTMENT OF AVIATION
ADDITIONAL FLIGHT INSTRUCTOR RATING COURSE
MULTI-ENGINE - AIRPLANE
GROUND AND FLIGHT TRAINING SYLLABUS

FLIGHT LESSON 5

DUAL - LOCAL

Lesson Objective:

During this lesson, the student will be introduced to and learn engine out maneuvers and procedures and precision and non-precision approaches.

Lesson Review

- Climbs (IR)
- Descents (IR)

Lesson Introduction

Emergency Operations (Engine-Out)

- Identification of Inoperative Engine (IR)
- Procedures for Shutdown and Feathering (IR)
- Engine Failure During Straight-and-Level (IR)
- Engine Failure During Turns (IR)
- Climbs (IR)
- Descents (IR)
- Precision Approaches (IR)
- Non-Precision Approaches (IR)
- Circling Approaches
- Missed Approaches

Completion Standards:

At the completion of this lesson, the student will demonstrate the ability to perform each of the listed maneuvers and procedures at a proficiency level that meets or exceeds those criteria outlined in the multi-engine sections of the current FAA Commercial Practical Test Standards and Instrument Rating Practical Test Standards.

UNIVERSITY OF OKLAHOMA - DEPARTMENT OF AVIATION
ADDITIONAL FLIGHT INSTRUCTOR RATING COURSE
MULTI-ENGINE - AIRPLANE
GROUND AND FLIGHT TRAINING SYLLABUS

FLIGHT LESSON 6**DUAL - LOCAL****Lesson Objective:**

During this lesson, the student will work on correcting any deficiencies in previous maneuvers. The instructor will determine that the student is proficient in all maneuvers performed from the right seat.

Content:

- Multi-Engine Operations as Outlined in the FAA Commercial Practical Test Standard
- Multi-Engine Operations
- Ground Operations
- Traffic Pattern Operations
- Visual Scanning and Collision Avoidance
- Straight-and-Level Flight (VR-IR)
- Turns (VR-IR)
- Climbs (VR-IR)
- Descents (VR-IR)
- Flight at Critically Slow Airspeeds
- Approaches and Landings
- Instrument Approach - All Engines Operating
- Instrument Approach - One Engine Inoperative
- Emergency Operations (Engine-Out)
- Systems and Equipment Malfunction
- After Landing Procedures

Completion Standards:

At the completion of this lesson, the student will be able to demonstrate each of the listed areas of operations at a proficiency level that meets or exceeds those criteria outlined in the multi-engine section of the current FAA Commercial Practical Test Standards and Instrument Rating Practical Test Standards.

UNIVERSITY OF OKLAHOMA - DEPARTMENT OF AVIATION
ADDITIONAL FLIGHT INSTRUCTOR RATING COURSE
MULTI-ENGINE - AIRPLANE
GROUND AND FLIGHT TRAINING SYLLABUS

FLIGHT LESSON 7**DUAL - STAGE CHECK****Lesson Objective:**

This lesson will be a multi-engine proficiency review conducted by the Chief Instructor or designated assistant, for the purpose of determining the student's knowledge of multi-engine procedures and capability to properly execute those procedures from the flight instructor's position in the aircraft.

Lesson Review:

Systems and Equipment Malfunction
After Landing Procedures
Multi-Engine IFR Operations Both Single and Multi-Engine Flight
Instructor Practical Test Standards

Completion Standards:

At the completion of this lesson, the student will have demonstrated multi-engine pilot proficiency while flying from the instructor's position. All maneuvers will be performed at the level prescribed by the Commercial Pilot Practical Test Standards for Multi-Engine Land.

Takoffs

- Normal/Crosswind
- Short Field

Engine Failure

- Takeoff Roll (Prior to Vmc)
- Climb
- Enroute
- Landing

Maneuvering With One Engine Inoperative

Steep Turns

Stalls

- Power On
- Power Off
- Accelerated

UNIVERSITY OF OKLAHOMA - DEPARTMENT OF AVIATION
ADDITIONAL FLIGHT INSTRUCTOR RATING COURSE
MULTI-ENGINE - AIRPLANE
GROUND AND FLIGHT TRAINING SYLLABUS

FLIGHT LESSON 7 (Continued)

Vmc Demonstration

Demonstrating Effects of Various Airspeeds and Configurations During Engine Inoperative Performance

Emergency Descent

Completion Standards

At the completion of this lesson the student will have demonstrated multi-engine proficiency while flying from the instructor's position. All maneuvers will be performed at the level prescribed by the Commercial Pilot Practical Test Standards for Airplane, Multi-Engine Land.

UNIVERSITY OF OKLAHOMA - DEPARTMENT OF AVIATION
ADDITIONAL FLIGHT INSTRUCTOR RATING COURSE
MULTI-ENGINE - AIRPLANE
GROUND AND FLIGHT TRAINING SYLLABUS

FLIGHT LESSON 8**DUAL - LOCAL****Lesson Objective:**

During this lesson, the student will begin to teach basic flight operations in a multi-engine airplane. The student will teach attitude, power setting, and configurations required for performance of the listed maneuvers. The student will also prepare and use lesson plans to aid in the teaching process.

Content:

Preflight Preparation

- Certificates and Documents
- Obtaining Weather Information

Multi-Engine Operations

- Operation of Airplane Systems
- Determining Performance and Limitations

Ground Operations

- Visual Inspection
- Cockpit Management
- Engine Starting
- Taxiing
- Pre-Takeoff Check

Airport and Runway Markings and Lightings

Normal Takeoffs and Climbs

Traffic Pattern Operations

Radio Communication and ATC Light Signals

Visual Scanning and Collision Avoidance

Straight-and-Level Flight (VR-IR)

Level Turns (VR-IR)

Climbs (VR-IR)

- Straight
- Turning

UNIVERSITY OF OKLAHOMA - DEPARTMENT OF AVIATION
ADDITIONAL FLIGHT INSTRUCTOR RATING COURSE
MULTI-ENGINE - AIRPLANE
GROUND AND FLIGHT TRAINING SYLLABUS

FLIGHT LESSON 8 (Continued)

Descents (VR-IR)

- Straight
- Turning

Slow Flight

Stalls

- Power On
- Power Off
- Accelerated

Steep Turns

Drag Changes for Various Configurations

Normal Approach and Landings

After Landing Procedures

Lesson Planning

- Preflight/Ground Operations
- Aircraft Systems

Completion Standards:

At the completion of this lesson, the student will be able to demonstrate all of the listed maneuvers while using instructional techniques and explaining the key elements of the maneuvers. The student should maintain heading, altitude, and airspeed for each maneuver within the limits set by the current FAA Multi-Engine and Flight Instructor Practical Test Standards.

UNIVERSITY OF OKLAHOMA - DEPARTMENT OF AVIATION
ADDITIONAL FLIGHT INSTRUCTOR RATING COURSE
MULTI-ENGINE - AIRPLANE
GROUND AND FLIGHT TRAINING SYLLABUS

FLIGHT LESSON 9

DUAL - LOCAL

Lesson Objective:

During this lesson, the student will continue working on instructional technique by explaining the maneuvers clearly and concisely while flying. The student will introduce and explain crosswind and maximum performance takeoffs and landings, go-arounds, engine-out procedures including V_{mc} demo.

Content:**Lesson Review**

Preflight Preparation

Normal Takeoff

Slow Flight

Lesson Introduction

Taxiing With Crosswind and Use of Differential Power

Crosswind Takeoff and Climb

Ground Reference Maneuvers; Including Rectangular Patterns,
S-Turns, and Turns About A Point

Crosswind Approach and Landing

Maximum Performance Takeoff and Climb

Maximum Performance Approach and Landing

Go-Around From Rejected (Balked) Landing

Emergency Operations (Engine-Out)

- Flight Principles - Engine Inoperative
- Identification of Inoperative Engine
- Use of Controls to Counteract Yaw and Roll
- Procedures for Shutdown and Feathering

Emergency Descent

UNIVERSITY OF OKLAHOMA - DEPARTMENT OF AVIATION
ADDITIONAL FLIGHT INSTRUCTOR RATING COURSE
MULTI-ENGINE - AIRPLANE
GROUND AND FLIGHT TRAINING SYLLABUS

FLIGHT LESSON 9 (Continued)

Maneuvering With One Engine Inoperative

- Straight-and-Level Flight
- Turns in Both Directions
- Climbs and Descents to Assigned Altitudes
- Demonstration of Engine Inoperative Loss of Directional Control
- Effects of Various Airspeeds and Configurations During Engine Inoperative Performance

Lesson Planning

- Ground Reference Maneuvers
- Engine-Out Procedures
- Demonstration of Engine Inoperative Loss of Direction Control

Completion Standards:

The student's ability to instruct while flying the aircraft should improve. The student should be clear and concise in his/her explanation of the maneuver. The maneuvers should be flown smoothly and within the limits set by the current FAA Multi-Engine and Flight Instructor Practical Test Standard

OU MEIG 04/01/22
UNIVERSITY OF OKLAHOMA
ADDITIONAL FLIGHT INSTRUCTOR RATING COURSE
MULTI-ENGINE - AIRPLANE
GROUND TRAINING SYLLABUS

29

FLIGHT LESSON 10

DUAL - LOCAL

Lesson Objective:

During this lesson, the student will teach engine failure on takeoff, initial climb, Enroute, and approaches and landings with an inoperative engine. The student will teach shutdown and restart procedures and review procedures for engine inoperative loss of directional control and recovery. Also, the student will teach emergency operation of airplane systems.

Content:

Lesson Review

Maximum Performance Takeoff and Climb

Emergency Operations

Maneuvering With One Engine Inoperative

Lesson Introduction

Flight by Reference to Instruments; Including Unusual Flight Attitudes, Radio Aids, and Radar Services

Emergency Operations (Engine-Out)

- Engine Failure on Takeoff Before V_{mc}
- Engine Failure After Liftoff
- Engine Failure Enroute
- Approach and Landing with Inoperative Engine
- Engine Inoperative Loss of Directional Control
- Full Feather and In-flight Restart
- Systems and Equipment Malfunctions

Completion Standards:

At the completion of this lesson, the student will be able to teach and demonstrate all of the listed maneuvers. The student should maintain heading, altitude and airspeed within the limits set by the current FAA Multi-Engine and Flight Instructor Practical Test Standards.

OU MEIG 04/01/22
UNIVERSITY OF OKLAHOMA
ADDITIONAL FLIGHT INSTRUCTOR RATING COURSE
MULTI-ENGINE - AIRPLANE
GROUND TRAINING SYLLABUS

30

FLIGHT LESSON 11

DUAL - LOCAL

Lesson Objective:

During this lesson, the student will teach multi-engine maneuvers and procedures holding as well as precision and non-precision approaches.

Content:

Lesson Introduction

Normal Operations

- Climbs (IR)
- Descent (IR)
- Holdings (IR)
 - Precision Approaches (IR)
- Non-Precision Approaches (IR)
- Circling Approaches
- Missed Approaches

Prepared Lesson Plans

- Normal Instrument Procedure

Completion Standards:

At the completion of this lesson, the student will demonstrate the ability to teach each of the maneuvers and procedures that meets or exceeds those criteria outlined in the multi-engine sections of the Multi-Engine and Flight Instructor Practical Test Standards.

OU MEIG 04/01/22
UNIVERSITY OF OKLAHOMA
ADDITIONAL FLIGHT INSTRUCTOR RATING COURSE
MULTI-ENGINE - AIRPLANE
GROUND TRAINING SYLLABUS

31

FLIGHT LESSON 12

DUAL - LOCAL

Lesson Objective:

During this lesson, the student will teach engine-out maneuvers and for precision and non-precision approaches.

Content:

Lesson Review

Climbs (IR)

Descents (IR)

Lesson Introduction

Emergency Operations (Engine-Out)

- Identification of Inoperative Engine (IR)
- Procedures for shutdown and Feathering (IR)
- Engine Failure During Straight-and-Level (IR)
- Engine Failure During Turns (IR)
- Climbs (IR)
- Descents (IR)
- Precision Approaches (IR)
- Non-Precision Approaches
- Circling Approaches
- Missed Approaches

Completion Standards:

At the completion of the lesson, the student will be able to teach and demonstrate all of the listed maneuvers. The student should maintain altitude, heading, and airspeed for each maneuver within the limits set by the Multi-Engine and Flight Instructor Practical Test Standards.

OU MEIG 04/01/22
UNIVERSITY OF OKLAHOMA
ADDITIONAL FLIGHT INSTRUCTOR RATING COURSE
MULTI-ENGINE - AIRPLANE
GROUND TRAINING SYLLABUS

32

FLIGHT LESSON 13

DUAL - LOCAL

Lesson Objective:

During this lesson, the student will review procedures and instruction techniques for any previous maneuver the instructor deems necessary. This lesson will be used to ensure that any weak areas the student has are addressed.

Content:

Lesson Review

Multi-Engine Operations as outlined in the FAA Multi-Engine Flight Instructor Practical Test Standards.

Multi-Engine Operations

Ground Operations

Traffic Pattern Operations

Visual Scanning and collision Avoidance

Straight-and-Level Flight (VR-IR)

Turns (VR-IR)

Climbs (VR-IR)

Descents (VR-IR)

Maneuvering During Slow Flight

Approaches and Landings - All Engines Operating

Approaches and Landings - One Engine Inoperative

Instrument Approach - All Engines Operating

Instrument Approach - One Engine Operating

Emergency Operations (Engine Out)

FLIGHT LESSON 13 (CONTINUED)

OU MEIG 04/01/22
UNIVERSITY OF OKLAHOMA
ADDITIONAL FLIGHT INSTRUCTOR RATING COURSE
MULTI-ENGINE - AIRPLANE
GROUND TRAINING SYLLABUS

33

Systems and Equipment Malfunction

After Landing Procedures

Completion Standards:

At the completion of this lesson, the student will be able to teach and demonstrate within the limits set by the current FAA Multi-Engine and Flight Instructor Practical Test Standards.

OU MEIG 04/01/22
UNIVERSITY OF OKLAHOMA
ADDITIONAL FLIGHT INSTRUCTOR RATING COURSE
MULTI-ENGINE - AIRPLANE
GROUND TRAINING SYLLABUS

34

FLIGHT LESSON 14

DUAL - FINAL STAGE CHECK

Lesson Objective:

This lesson is a stage check conducted by the Chief Flight Instructor or Assistant Chief Flight Instructor. The student must demonstrate flight instructor proficiency. Note: Several areas indicate a minimum number of tasks which must be evaluated. The student must be prepared to demonstrate proficiency in all the listed tasks.

Content:

Preflight Procedures (A minimum of one of the following)

- Preflight Inspection
- Single-Pilot Resource Management
- Engine Starting

Takeoffs, Landings and Go-Arounds (At least two takeoff tasks and two landing tasks from the following)

- Normal and Crosswind Takeoff and Climb
- Short-Field Takeoff and Maximum Performance Climb
- Normal and Crosswind Approach and Landing
- Go-Around/Rejected Landing
- Short-Field Approach and Landing

Performance Maneuver - Steep Turns

Slow Flight and Stalls (At least one of the following)

- Maneuvering During Slow Flight
- Power-On Stalls
- Power-Off Stalls
- Accelerated Maneuver Stalls (Demonstration)

Emergency Operations (At least the second or third, the fourth and one other of the following)

- Systems and Equipment Malfunctions
- Engine Failure During Takeoff Before Vmc
- Engine Failure After Liftoff
- Approach and Landing With an Inoperative Engine
- Emergency Descent
- Emergency Equipment and Survival Gear

OU MEIG 04/01/22
UNIVERSITY OF OKLAHOMA
ADDITIONAL FLIGHT INSTRUCTOR RATING COURSE
MULTI-ENGINE - AIRPLANE
GROUND TRAINING SYLLABUS

35

Flight Lesson 14 (Continued)

Multi-Engine Operations (At least the fourth and fifth and one other of the following)

- Operation of Systems
- Performance and Limitations
- Flight Principles - Engine Inoperative
- Maneuvering With One Engine Inoperative
- Vmc Demonstration
- Demonstrating The Effects Of Various Airspeeds and Configurations During Engine Inoperative Performance

Completion Standards:

The student will demonstrate proficiency in strict accordance with the current FAA Airplane Multi-Engine Flight Instructor Practical Test Standards. This stage check will be at least equal in scope, depth and difficulty to that practical test.