## UNIVERSITY OF OKLAHOMA DEPARTMENT OF AVIATION COMMERCIAL PILOT CERTIFICATION COURSE AUG 2023

## **FLIGHT TRAINING SYLLABUS**

### PREREQUISITES FOR ENROLLMENT IN THE FLIGHT PORTION OF THE

<u>COMMERCIAL PILOT COURSE</u>: You must hold a private pilot certificate with an airplane category and single engine land rating and a medical certificate valid for at least third class privileges prior to enrolling in the flight portion of this course. You must also have an instrument airplane rating, or be concurrently enrolled in the University of Oklahoma Instrument Rating Course and earn your instrument airplane rating prior to completing this course.

<u>COURSE OBJECTIVE</u>: You will obtain the knowledge, skill and aeronautical experience to meet the requirements of 14 CFR, Section 141, Appendix D to earn a commercial pilot certificate with airplane single engine land rating.

## **COURSE POLICY:**

At the discretion of the instructor, students who progress rapidly within a specific stage, may within reasonable variances, continue to the next lesson with less time than is specified in the specific lesson curriculum, provided all content and completion standards are satisfactorily completed. Stage V, lessons one and two each must be a minimum of three hours duration. For the rest of the lessons, the time stated in the lesson is the approximate minimum time that a student would need to meet the lesson objectives and completion standards; not absolute required times. The lesson time could be lightly more or slightly less. These reduced hours must be included in other lessons to complete the total ground or flight time specified by category in the training course outline in order to satisfactorily complete the course.

At no time will a student be allowed to continue to the next stage without having successfully completed all of the lessons and the required tests or stage checks related to the completion of the previous stage. Flight training for this course will be done in accordance with the F.A.A approved syllabus. Deviations from the syllabus due to student training requirements, weather related factors, or other items as necessary will be allowed as long as the following requirements are met:

- The deviation is approved by the chief or assistant chief flight instructor
- A notation will be made in the student training record as to the lesson covered and the reason for the deviation.
- The student will complete all syllabus requirements before a graduation certificate is issued.

To satisfactorily complete the course of training, the student must meet all course objectives and completion standards. The student must complete the required ground training and pass the FAA Commercial Pilot Airplane Knowledge test prior to the completion of flight training.

**EXPECTED ACCOMPLILSHMENTS AND STANDARDS:** To satisfactorily complete each Flight stage you must complete the lessons in that stage and pass the end of course stage check. Each lesson lists specific objectives and standards of completion.

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CHECKS AND TESTS: The flight training portion of the syllabus contains a quiz and a stage check flight at the end of Stage IV, V and X. The stage checks will be administered by the Chief/Assistant Chief Flight Instructor or check instructor approved by the FSDO. The Stage X check is the end of course stage check which will be equal in scope, depth and difficulty to the practical test defined by the FAA Commercial Pilot – Airplane Airman Certification Standards.

# UNIVERSITY OF OKLAHOMA COMMERCIAL PILOT CERTIFICATION COURSE COMMERCIAL PILOT STAGE V LESSON TIME ALLOCATION

LESSON	DUAL	SOLO	DL NGT	SO NGT	DL XC	SO XC	INST DL	TAA
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10		5.0				5.0		
11		6.0				6.0		
12	QUIZ							
13	1.0						0.3	
TOTAL*	16.0	24.0	3.0		9.0	24.0	8.3	5.0

<sup>\*</sup>Any shortages in a category must be made up in Stage X.

**DL NGT** = Dual Night **DL XC** = Dual Cross Country **SO XC** = Solo Cross Country

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X = Indicates minimum times required by FSP to complete the lesson.

**Y** = Times indicated in Lesson Time Allocation Table

If X is less than Y on a particular lesson the shortage must be made up in a future lesson

\*Nldg = Solo Night Landings at an Airport with an Operating Control Tower

#### 1

#### **STAGE V**

### **STAGE OBJECTIVE**

The objective of this stage is to broaden the student's knowledge of VFR cross-country during day and night operations and provide the skills necessary to operate safely during extended cross-country flights. The student will also be introduced to a basic overview of IFR flight operations.

### STAGE COMPLETION STANDARD

At the completion of this stage of training, the student must be able to demonstrate the complete and accurate planning of VFR cross-country flights and the safe conduct of those flights using pilotage, dead reckoning, and radio navigation. Also, at the completion of this stage the student should have a basic understanding of IFR flight.

#### STAGE V FLIGHT LESSON 1 - DUALCROSS-COUNTRY

#### LESSON OBJECTIVE:

This lesson is a review and evaluation of the student's cross-country skills in preparation for solo cross-country flights. The flight will be of at least 3-hour duration, a total straight line distance of more than 100 n.m. from the original point of departure. The flight will be conducted during the day.

#### CONTENT:

#### **Lesson Introduction**

Cross-Country Ground Operations

- Cross-Country Flight Planning
- Obtaining Weather Information
- Cockpit Management

Radio Communications and ATC Light Signals Navigation

- VOR (IR)
- GPS (IR)
- Pilotage
- Dead Reckoning

Cruise Procedures

Lost and Diversion Procedures

Power Settings and Mixture Leaning

Simulated Emergency Procedures

- System and Equipment Malfunctions
- Low Fuel Supply
- Lost Procedures
- Turbulence
- Adverse Weather
- Airframe and Powerplant Icing
- Planning to Alternate
- Emergency Descent
- Emergency Approach and Landing

#### Unfamiliar Airports

- Traffic Patterns
- UNICOM-Equipped Field
- Tower-Controlled Field
- Operations in Heavy Traffic
- CTAF Procedures
- Airport and Runway Marking and Lighting

#### Full Panel Instrument

- Straight and Level
- Climbs
- Descents
- Standard-Rate Turns
- Use of Radar Vectors

High Density Altitude Operations

Radio Facility Shutdowns

#### **COMPLETION STANDARDS:**

This lesson is complete when the student performs the tasks above to the standards listed in the Commercial Pilot Airman Certification Standards and the Private Pilot Airman Certification Standards for the instrument tasks while making a cross country flight to and back from an airport more than 100 n.m from the point of departure. The flight will be made during the day.

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#### STAGE V FLIGHT LESSON 2 - DUAL CROSS-COUNTRY, NIGHT

#### LESSON OBJECTIVE:

During this lesson, the student will learn night cross-country procedures, including preflight planning, navigation, emergencies, and the use of unfamiliar airports. The flight will be of at least 3-hour duration, a total straight-line distance of more than 100 n.m. from the original point of departure, and occurring at night.

#### **CONTENT:**

#### **Lesson Review**

Aeromedical Factors

Simulated Emergency Procedures

- System and Equipment Malfunctions
- Emergency Descent
- Adverse Weather
- Turbulence
- Lost Procedures
- Low Fuel Supply
- Airframe and Powerplant Icing

Airport and Runway Markings and Lighting

Normal Takeoffs and Landings

Full Panel Instrument

- Straight and Level
- Climbs
- Descents
- Standard-Rate Turns

Go-Around From Rejected (Balked) Landing

#### **Lesson Introduction**

Night Cross-Country Ground Operations

- Cross-Country Flight Planning
- Obtaining Weather Information
- Cockpit Management

Night Cross-Country Procedures

Lost and Diversion Procedures

Night Navigation

- VOR (IR)
- GPS (IR)
- Pilotage
- Dead Reckoning

**Unfamiliar Airports** 

#### **COMPLETION STANDARDS:**

This lesson is complete when the student performs the tasks above to the standards listed in the Commercial Pilot Airman Certification Standards and the Private Pilot Airman Certification Standards for the instrument tasks while making a cross country flight to and back from an airport more than 100 n.m. from the point of departure. The flight will be made at night.

#### UNIVERSITY OF OKLAHOMA

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#### STAGE V FLIGHT LESSON 3 – SOLO CROSS-COUNTRY

#### **LESSON OBJECTIVE:**

This and the following solo cross-country flights are provided to develop the student's cross-country proficiency and confidence. The flight will include a landing at a point more than 50 n.m. from the original departure point.

#### **CONTENT:**

#### **Lesson Review**

Cross-Country Ground Operations

- Preflight Planning

Cross-Country Flight Assigned by the Instructor

- Airport Operations (Tower and CTAF/Unicom)
- Dead Reckoning
- Pilotage
- VOR Navigation
- GPS Navigation

#### **COMPLETION STANDARDS:**

The student will show added skill in cross-country planning by selecting optimum cruising altitudes and appropriate checkpoints for a flight with a landing at a point more than 50 n.m. from the original departure point. Additionally, fuel planning will be accurate and allow for an adequate reserve.

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#### STAGE V FLIGHT LESSON 4 - DUAL LOCAL, INSTRUMENT

#### **LESSON OBJECTIVE:**

This lesson reviews full panel attitude instrument flying to prepare the student for the later introduction of partial panel air work.

#### **CONTENT:**

#### Lesson Review

Aircraft Flight Instruments and Navigation Equipment

Full Panel Instrument

- Straight and Level
- Standard-Rate Turns
- Constant Airspeed Climbs
- Constant Airspeed Descents
- Maneuvering During Slow Flight

#### **Lesson Introduction**

Full Panel Instrument

- IFR Preflight Inspection
- Preflight Check of Instruments, Equipment, and Systems
- Instrument Cockpit check
- IFR Takeoff Preparations
- Change of Airspeed
- Steep Turns
- Instrument Takeoffs
- Timed Turns to Magnetic Headings
- Magnetic Compass Turns
- Power-Off Stalls (Imminent)
- Power-On Stalls (Imminent)
- Recovery from Unusual Flight Attitudes

#### **COMPLETION STANDARDS:**

The tasks will be performed to the standards of the Instrument Rating Airman Certification Standards with the following exceptions:

Heading: +/- 15 degrees Altitude: +/- 200 feet Airspeed: +/- 15 knots

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#### STAGE V FLIGHT LESSON 5 - SOLO CROSS-COUNTRY

#### **LESSON OBJECTIVE:**

The objective of this lesson is for the student to plan and complete a cross-country flight using pilotage, dead reckoning, and radio navigation. The flight will include a landing at a point more than 50 n.m. from the original departure point.

#### **CONTENT:**

#### **Lesson Review**

**Cross-Country Ground Operations** 

- Preflight Planning

Cross-Country Flight Assigned by the Instructor

- Pilotage
- Dead Reckoning
- VOR Navigation
- GPS Navigation
- Use of Tower Controlled Airports
- Use of UNICOM Equipped Airports

#### **COMPLETION STANDARDS:**

This lesson is complete when the student has conducted a solo cross-country to include a landing at a point more than 50 n.m. from the original departure point. The student should attempt to gain proficiency in the accurate tracking of selected VOR radials and the GPS course line.

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#### STAGE V FLIGHT LESSON 6 – DUAL INSTRUMENT

#### LESSON OBJECTIVE:

During this lesson the student will be introduced to VOR Orientation and GPS holding patterns.

#### **CONTENT:**

#### Lesson Review

Full and Partial Panel Instrument

- Straight and Level
- Standard-Rate Turns
- Constant Rate Climbs
- Constant Airspeed Climbs
- Constant Rate Descents
- Constant Airspeed Descents
- Recovery from Unusual Flight Attitudes

#### **Lesson Introduction**

Full and Partial Panel Instrument

- VOR Accuracy Test
- VOR Radial Interception and Tracking
- VOR Orientation
- GPS Holding

#### **COMPLETION STANDARDS:**

The student will perform the tasks to the standards of the Instrument Rating Airman Certification Standards with the following exceptions:

Headings will be maintained to +/- 15 degrees Altitudes will be maintained to +/- 200 feet Airspeed will be maintained to +/- 15 knots

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#### STAGE V FLIGHT LESSON 7 DUAL INSTRUMENT - TAA

#### **LESSON OBJECTIVE:**

This lesson introduces the student to non-precision instrument approach procedures and missed approach planning. It also introduces the student to the PFD and MFD displays in a Technically Advanced Aircraft while executing the tasks of this lesson

#### **CONTENT:**

#### Lesson Review

Full Panel Instrument

- Straight and Level
- Constant Rate Climbs
- Constant Airspeed Climbs
- Constant Rate Descents
- Constant Airspeed Descents
- Standard-Rate Turns

Systems and Equipment Failures

#### **Lesson Introduction**

Non-Precison Approaches (VOR, GPS, LOC) Precision Approaches (ILS) Straight-In Approach Procedures Circling Approach Procedures Missed Approach Procedures Landing from a Straight-In or Circling Approach Procedure

#### **COMPLETION STANDARDS:**

At the completion of this lesson, the student will be able to explain and use the information displayed on the approach charts, execute an instrument approach and missed approach procedure. Be able to interpret data presented by the PFD and MFD. The tasks will be completed to the standards of the Instrument Rating Airman certification standards with the following exceptions:

Heading: +/- 15 degrees Altitude: +/- 200 feet Airspeed: +/- 15 knots

Tracking of lateral and vertical courses will be to within less than a full deflection of

the deviation indicators

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#### STAGE V FLIGHT LESSON 8 - DUAL CROSS-COUNTRY, INSTRUMENT -TAA

#### **LESSON OBJECTIVE:**

During this lesson, the student will plan and conduct a short IFR cross-country flight. During the flight, the student will become familiar with IFR departure and arrival procedures. The student will also be introduced to the flight director and autopilot of a Technically Advanced Aircraft in execution of the tasks in this lesson.

#### **CONTENT:**

#### Lesson Review

Holding VOR and GPS Navigation Precision and Non-Precision Approaches

#### **Lesson Introduction**

Filing an IFR Flight Plan Air Traffic Control Clearances Simulated Emergency Procedures IFR Cross-Country Flight Planning

- Obtaining Weather Information
- Aircraft Performance, Limitations, and Systems related to IFR Operation

En route Navigation and Tracking Calculating ETEs and ETAs En route Course Changes

#### **COMPLETION STANDARDS:**

At the completion of this flight, the student will be able to explain the basic principles of IFR cross country flight including navigation and tracking along published airways. Additionally, the student will know the methods used to calculate ETAs and comply with course changes that may be issued by ATC or necessitated by en route weather. The student will also demonstrate the ability to program the flight director and use the autopilot in a Technically Advanced Aircraft. Headings, altitudes and airspeeds will be maintained to the standards of the Instrument Rating Airman Certification Standards. Use of the flight director to track lateral and vertical courses will be to within three quarters deflection of the deviation indicators.

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#### STAGE V FLIGHT LESSON 9 - SOLO CROSS-COUNTRY

#### **LESSON OBJECTIVE:**

During this lesson, the student will continue to practice cross-country planning and accurate flying. The flight will include a landing at a point more than 50 n.m. from the original departure point.

#### **CONTENT:**

#### **Lesson Review**

Cross-Country Ground Operations

- Preflight Planning

Cross-Country Flying Assigned by the Instructor

- Pilotage
  - Dead Reckoning
  - VOR Navigation
  - GPS Navigation
  - Use of Controlled and Uncontrolled Airports

#### **COMPLETION STANDARDS:**

This lesson is complete when the student has conducted a cross-country to include a landing at a point more than 50 n.m. from the original departure point. The student should attempt to increase proficiency by accurately adhering to the preplanned navigation log.

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#### STAGE V FLIGHT LESSON 10 - SOLO CROSS-COUNTRY

#### LESSON OBJECTIVE:

The purpose of this cross-country is to build the student's experience and meet the long cross-country requirements. Therefore, the flight will include a landing at a point more than 50 n.m. from the original departure point.

#### **CONTENT:**

#### **Lesson Review**

Cross-Country Ground Operations

- Preflight Planning
- Cockpit Management

Cross-Country Flight Assigned by the Instructor

- Pilotage
- Dead Reckoning
- VOR Navigation
- GPS Navigation
- Use of Controlled and Uncontrolled Airports

#### **COMPLETION STANDARDS:**

This lesson is complete when the student has conducted a solo cross-country to include a landing more than 50 n.m. from the original departure point. The student should attempt to increase proficiency by accurately adhering to the pre-planned navigation leg.

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#### STAGE V FLIGHT LESSON 11 - SOLO CROSS-COUNTRY

#### **LESSON OBJECTIVE:**

The purpose of this cross-country is to build the student's experience and meet the long cross-country requirements. The flight must have landings at a minimum of three points and one of the segments must consist of a straight line distance more than 250 nautical miles.

#### **CONTENT:**

#### **Lesson Review**

**Cross-Country Ground Operations** 

- Preflight Planning
- Cockpit Management

Cross-Country Flight Assigned by the Instructor

- Pilotage
- Dead Reckoning
- VOR Navigation
- GPS Navigation
- Use of Controlled and Uncontrolled Airports

#### **COMPLETION STANDARDS:**

This lesson is complete when the student has conducted a solo cross-country with landings at a minimum of three points, and one of the segments has a straight line distance of more than 250 nautical miles. During the preflight orientation and postflight evaluation, the student should display efficient use of applicable FAA publications, correct weather analysis, and accurate flight planning.

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### STAGE V LESSON 12 – QUIZ

#### **LESSON OBJECTIVE:**

The objective of this lesson is to test the student's knowledge of this stage through a quiz.

## **CONTENT:** The quiz will cover the following areas:

Aircraft Weight and Balance Cross Country Flight Planning Weather Products/Services Airspace Instrument Approaches and Holding

#### **COMPLETION STANDARDS:**

This lesson is complete when the student scores a 70% or better. In addition, the instructor is responsible for reviewing those questions missed.

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#### STAGE V FLIGHT LESSON 13 - DUAL CROSS-COUNTRY

#### STAGE CHECK

#### LESSON OBJECTIVE:

The objective of this stage check is to test the student's understanding of VFR crosscountry procedures and to determine the student's ability to perform these procedures at the proficiency level of a commercial pilot. The student will also be tested on basic IFR navigation.

#### **CONTENT:**

#### Lesson Review

**Cross-Country Ground Operations** 

- Preflight Planning
- Cockpit Management

## Cross-Country Flight

- VOR Navigation (IR)
- GPS Navigation (IR)
- Pilotage
- Dead Reckoning
- Cruise Procedures
- Use of Unfamiliar Airports
- Airport and Runway Markings and Lighting
- Radio Communications and ATC Light Signals

## Simulated Emergency Procedures

- Systems and Equipment Malfunctions
- Emergency Descent
- Low Fuel Supply
- Lost Procedures
- Diversion Procedures
- Turbulence
- Adverse Weather
- Airframe and Powerplant Icing
- Planning to an Alternate
- Radio and Instrument Failure
- Recovery From Unusual Attitudes

#### **COMPLETION STANDARDS:**

The student will perform the tasks above to the standards of the Commercial Pilot Airman Certification Standards. Instrument tasks will be performed to the standards of the Instrument Rating Airman Certification Standards.

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