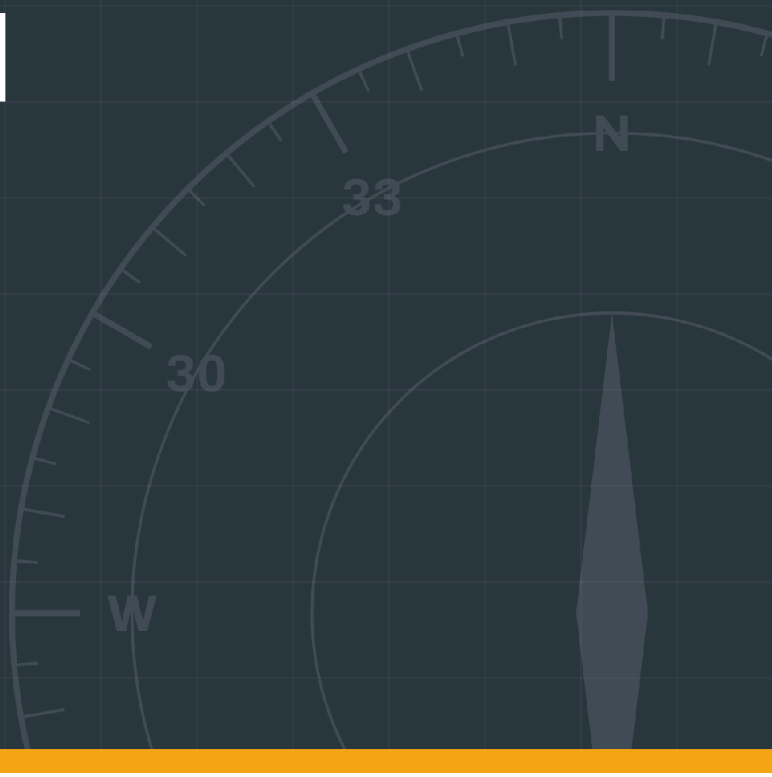
DZ AVIATION

FLIGHT TRAINING · ORLANDO APOPKA (X04)

TRAINING COURSE OUTLINE · 14 CFR PART 61

Commercial Pilot

Airplane Single-Engine Land
Ground and flight training syllabus



Orlando Apopka Airport (X04) · Apopka, Florida

Commercial pilot certificate – airplane single-engine land: ground and flight training under 14 CFR Part 61.

CHIEF INSTRUCTOR	Davide Zambiasi, Gold Seal CFI/CFII, airplane and helicopter
AIRCRAFT	Cessna 172 and Piper PA-28-181 Archer; Piper PA-28R Arrow (complex)
REVISION	Revision 1 · November 8, 2026
CONTACT	flydz.co · david@flydz.co
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Log of Revisions

Number	Date	Nature of the Changes	Signature
1	11/08/2026	Original issue: commercial pilot (ASEL) syllabus adapted for DZ Aviation (Part 61, X04)	DZ
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Part 61 Minimum Requirements and Training Plan

DZ Aviation trains under 14 CFR Part 61. The minimum aeronautical experience for a commercial pilot certificate with an airplane single-engine rating is set by 14 CFR 61.129(a). Most of the 250 hours are flight experience the pilot builds before and during the course; this syllabus provides the training and the solo or PIC flights the regulation names. The table below shows each regulatory minimum, the tightest plan in which this course can meet it, and the 36-hour plan this syllabus is built around.

Minimum requirements at a glance

Requirement (14 CFR 61.129(a) unless noted)	Regulatory minimum	Tightest plan	This syllabus	Flight lessons
Total flight time as a pilot	250.0	250.0	250.0	Prior time + course + time building
Powered aircraft, incl. 50 h in airplanes	100.0	100.0	100.0	Prior time + course
Pilot in command, incl. 50 h in airplanes	100.0	100.0	100.0	Prior time + solo lessons + time building
PIC cross-country, incl. 10 h in airplanes	50.0	50.0	50.0	Usually complete after the instrument rating
Training on the 61.127(b)(1) areas of operation	20.0	20.0	32.0	1, 3–11, 16–18 + instrument training
Instrument training (attitude, partial panel, unusual attitudes, navigation), 5 h in a single-engine airplane	10.0	10.0	10.0	Credited from instrument rating training
Training in a complex, turbine-powered, or technically advanced airplane	10.0	10.0	11.5	4–10 (Piper Arrow)
Day VFR cross-country, at least 2 h, point of landing more than 100 nm straight-line from departure	1 flight	1 flight	1 flight	8
Night VFR cross-country, at least 2 h, point of landing more than 100 nm straight-line from departure	1 flight	1 flight	1 flight	9
Practical test preparation within the 2 calendar months before the month of the test	3.0	3.0	5.0	16, 17, 18
Solo, or performing the duties of PIC with an authorized instructor on board	10.0	10.0	14.0	2, 12–15
Cross-country of at least 300 nm, landings at 3 points, one at least 250 nm straight-line from departure	1 flight	1 flight	1 flight	15
Night VFR, with 10 takeoffs and 10 landings with a traffic pattern at an airport with an operating control tower	5.0	5.0	5.0	13, 14
Ground training or home study on the 61.125(b) knowledge areas	No minimum hours	Self-study + 1-on-1	53.0 h planned	Ground lessons 1–17

Requirement (14 CFR 61.129(a) unless noted)	Regulatory minimum	Tightest plan	This syllabus	Flight lessons
Endorsements: complex airplane (61.31(e)), knowledge test (61.35(a)(1), 61.123(c)), practical test (61.39(a)(6), 61.123(e))	Required	Required	Required	FL 10, GL 17, FL 18

The 20 hours of training include the instrument, complex, cross-country, and practical test preparation items below it, so one flight can count toward several of them: the Arrow day and night cross-countries count toward the complex time, the cross-country items, and the 20 hours.

Instrument training credit

Instrument training logged for the instrument rating can be credited toward 14 CFR 61.129(a)(3)(i), but only when the logbook shows it covered attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigation systems. Holding an instrument rating is not, by itself, enough. Stage 1 of the DZ Aviation Instrument Rating syllabus (Flight Lessons 1–8, about 10.4 hours of instrument training in a single-engine airplane) covers exactly these tasks, and each entry is annotated for this purpose. Students without an instrument rating, or whose logbook does not document these tasks, fly those eight lessons before the end-of-course check. Without an instrument rating the commercial certificate also carries a limitation prohibiting the carriage of passengers for hire on cross-country flights of more than 50 nm or at night (14 CFR 61.133(b)), so DZ Aviation recommends completing the instrument rating first.

How we train to the minimums

An instrument-rated student with documented instrument training who meets every lesson's completion standards on the first attempt can finish the course with 10 hours of dual instruction and 10 hours of solo flight. To make that possible, we work as follows:

- Fly at least 3 times per week, in morning slots when possible to avoid Central Florida afternoon thunderstorms. Commercial maneuvers are lost quickly between flights.
- Pass the FAA Commercial Pilot knowledge test before Stage 2 begins, and finish each self-study module before its one-on-one ground session.
- Arrive prepared: chair-fly each maneuver with its entry, references, and recovery, and have every cross-country planned before the briefing.
- Plan each flight to satisfy several requirements at once: the Arrow day and night cross-countries count toward the complex time, and the 300 nm solo cross-country and the night solo flights also build PIC and cross-country time.

- Combine lessons once their completion standards are met: the Arrow checkout and maneuver lessons can be merged, the Stage 2 check can be combined with practical test preparation in the Arrow, and solo maneuver practice is dropped when maneuvers are already at standard.
- Track every minimum in the written debrief after each lesson and in the student's time-building plan, so no requirement is left for the end of the course.

The tightest plan is built as follows:

Phase (flight lessons)	Dual	Solo / PDPIC	Notes
Arrow checkout and commercial maneuvers (4–7, condensed)	3.0		Complex airplane endorsement after Lesson 10 standards are met
Arrow day cross-country (8)	2.0		Point of landing more than 100 nm from X04
Arrow night cross-country (9)	2.0		Point of landing more than 100 nm from X04
Practical test preparation in the Arrow (16, 18)	3.0		Includes the Stage 2 check; within the 2 calendar months before the month of the test
Night solo at a towered airport (13, 14)		5.0	10 takeoffs and 10 landings with a traffic pattern
300 nm solo cross-country (15)		5.0	Three points of landing, one at least 250 nm from X04
Total – 20.0 hours	**10.0**	**10.0**	All 10.0 dual hours are complex time; 10.0 h of instrument training credited

In the tightest plan the commercial practical test is flown in the Arrow. A complex airplane is not required for the commercial practical test, and the test may be taken in the Cessna 172 or Archer when the student has trained in it to commercial standards (Lessons 11, 16, and 17).

What most students actually need

Few students finish at the tightest plan, and this syllabus does not assume they will. It is planned at 36 hours (22.0 dual and 14.0 solo), and any lesson is repeated until its completion standards are met. The extra time goes mostly to chandelles, lazy eights, and eights on pylons flown to ACS standards, to the power-off 180° accuracy landing, and to review after weather or schedule gaps. The student is endorsed for the practical test only when he or she consistently meets the current Commercial Pilot – Airplane ACS.

Building to 250 hours

Most students begin the course well short of 250 hours. The rest is built as pilot in command, flown to a written plan agreed with the chief instructor so that each flight also builds a requirement still missing: PIC time, PIC cross-country time, and night experience. Time-building flights are not part of this syllabus's hours, but the chief instructor reviews the student's logbook at each stage check and before the end-of-course check.

Course Outline

1. DZ Aviation provides flight and ground instruction at Orlando Apopka Airport (X04), Apopka, Florida, under 14 CFR Part 61. DZ Aviation does not hold an FAA air agency certificate.

DZ Aviation

Orlando Apopka Airport (X04), Apopka, FL · www.flydz.co · david@flydz.co

2. Base of Operations: Orlando Apopka Airport (X04)
    a. Airport: X04 is a public-use, non-towered airport about 4 miles northwest of Apopka and is the base for all training in this course. Runway 15/33 is 3,284 x 60 ft asphalt, with pilot-controlled low-intensity edge lights on the CTAF (123.05) and a rotating beacon, so the airport supports day and night training. Runway 15 uses right traffic and has a 241 ft displaced threshold. Touch-and-go landings are prohibited when three or more aircraft are in the pattern, and powered paragliders operate west of the runway. The power-off 180° accuracy landing is practiced at X04 only when the pattern is clear; commercial maneuvers are flown in the practice areas away from the Orlando Class B airspace.
    b. Ground Instruction Facilities: Briefings, debriefings, and one-on-one ground lessons are conducted at X04 in a briefing area suitable for instruction, away from ramp and maintenance activity, with internet access for weather briefings and flight planning.
    c. Ground Trainer: No flight simulation training device is used in this course; all flight training is conducted in the airplane. Students are encouraged to chair-fly each maneuver.
3. Training Aids: Ground training uses an online self-study commercial pilot course (Sporty's, King Schools, or equivalent), FAA handbooks, the aircraft POHs and checklists, current charts, ForeFlight, and diagrams and models during one-on-one sessions.
4. Aircraft:
    a. Cessna 172 and Piper PA-28-181 Archer airplanes operated by Countrywide Flyers, a flying club based at X04, are used for cross-country, night, solo, and practical test preparation flights. Each is maintained and inspected as required by 14 CFR Part 91 and equipped for day and night VFR flight as specified in 14 CFR 91.205, with a transponder with ADS-B Out for operations in the Orlando Class B Mode C veil.
    b. A Piper PA-28R Arrow, a complex airplane with retractable landing gear, flaps, and a controllable-pitch propeller (14 CFR 61.1), is used for the 10 hours of complex airplane training required by 14 CFR 61.129(a)(3)(ii). A technically advanced airplane that meets 14 CFR 61.129(j) may be substituted for some or all of this time with the chief instructor's approval.

c. Students must be members of Countrywide Flyers and checked out in the club aircraft before training. Membership, aircraft scheduling, checkout, and insurance requirements, including any minimum time before solo in the Arrow, are set by the aircraft operator, not by DZ Aviation.

d. The Arrow is not approved for intentional spins, and no spin training is conducted in this course.

5. Chief Instructor:

   a. The chief instructor for the Commercial Pilot course is:

      i. **Davide Zambiasi – Gold Seal CFI/CFII, airplane and helicopter**

   b. The chief instructor conducts the training in this course, administers all stage exams, stage checks, and the end-of-course check, keeps the training records, and issues all required endorsements.

6. Instructors: All training in this course is given by the chief instructor.

7. Training Records: Each lesson is logged in the student's logbook and in the DZ Aviation training record, with a written debrief that states which completion standards were met and what comes next. Complex time, the day and night cross-countries, the night towered-airport landings, and solo or PDPIC time are each identified in the logbook remarks so the 14 CFR 61.129(a) items can be verified at a glance. Endorsements follow the current edition of FAA Advisory Circular 61-65.

8. Scheduling: Students should schedule at least three lessons per week. Morning lessons are recommended from late spring through early fall to avoid afternoon thunderstorms. When more than three weeks pass between flight lessons, the next lesson normally begins with a review of the previous lesson's elements.

Curriculum Overview

The DZ Aviation Commercial Pilot course (the course) is designed to meet the aeronautical knowledge, flight proficiency, and aeronautical experience training requirements of 14 CFR 61.125, 61.127(b)(1), and 61.129(a) for a commercial pilot certificate with an airplane category and single-engine land class rating. DZ Aviation trains under 14 CFR Part 61; the course is organized in stages, with stage exams, stage checks, and written completion standards, because this makes progress measurable and keeps training on track. The instructor refers to the regulations throughout the course so that every knowledge area, flight proficiency area, and experience requirement is covered and documented.

The syllabus has separate ground and flight segments that are taught concurrently. The ground lessons are divided into three stages. In Stage 1, the student studies the regulations for commercial operations and reviews airports, airspace, weather, navigation, physiology, and aeronautical decision making at the commercial level. In Stage 2, the student studies complex airplane systems, advanced aerodynamics, and performance. In Stage 3, the student studies the commercial maneuvers and emergency procedures.

The flight lessons are separated into three stages. In Stage 1, the student plans and flies cross-country flights to commercial standards. In Stage 2, the student completes the complex airplane training in the Piper Arrow, including the commercial maneuvers and the day and night cross-countries. In Stage 3, the student brings the maneuvers to ACS standards in the training airplane, completes the solo or PDPIC experience, including the 300 nm cross-country and the night towered-airport landings, and prepares for the practical test.

The course coordinates ground and flight lessons in a step-by-step progression of introduction and practice, combining self-study assignments, one-on-one ground instruction, and training in the airplane. The syllabus is not a rigid document: it is a summary of the course of training, and the instructor adapts it to each student’s needs and to the local training environment.

Course elements

The course has a ground portion and a flight portion, which are normally conducted together. The ground portion covers the aeronautical knowledge areas of 14 CFR 61.125(b); the flight portion covers the areas of operation of 14 CFR 61.127(b)(1) and the training and solo experience of 14 CFR 61.129(a)(3) and (a)(4). A student who completes the course, has documented instrument training as described above, and builds the remaining flight time meets the Part 61 requirements for the commercial pilot certificate.

Course enrollment

A student may enroll at any time and may begin at the start of any stage, subject to the evaluation described under Credit for previous training. The student must hold at least a private pilot certificate with an airplane single-engine land rating, must be able to read, speak, write, and understand the English language, and must be at least 18 years old by the practical test. To act as pilot in command on the solo and time-building flights, the student must hold at least a third-class medical certificate or fly under BasicMed; exercising commercial pilot privileges after the practical test requires at least a second-class medical certificate (14 CFR 61.23), so applying for one before the course is recommended. Completing the DZ Aviation Instrument Rating course first is strongly recommended.

Credit for previous training

All flight and ground training previously received from an authorized instructor and properly logged counts toward the requirements of 14 CFR 61.129(a), whether it was received under Part 61 or Part 141, provided the logbook shows what was covered. Prior complex or TAA training counts toward the 10 hours when it was received from an authorized instructor. Before placing a student who has prior training, the chief instructor reviews the student's logbook and endorsements and conducts an evaluation flight and oral review. The student then enters the course at the lesson that matches the proficiency demonstrated.

Ground training

14 CFR 61.125(a) requires the applicant to receive and log ground training from an authorized instructor, or to complete a home-study course, on the aeronautical knowledge areas of 14 CFR 61.125(b). This course combines both. Before each ground lesson, the student completes the assigned module of an online self-study commercial pilot course (Sporty's, King Schools, or an equivalent course accepted by the chief instructor). The student then reviews the lesson one-on-one with the instructor, who covers weak areas, applies the material to commercial operations from X04, and checks the student against the lesson's completion standards.

Using the ground lessons

Each ground lesson lists its objectives, the recommended self-study and one-on-one time, required materials, lesson elements, and completion standards. At the start of the one-on-one session, the instructor outlines the objectives, the elements to be covered, and the completion standards. Self-study times are estimates; one-on-one time is logged as ground training and may be split across briefings and debriefings when that serves the student better.

Textbooks and required materials

Before each ground lesson, the student completes the assigned self-study module and reads the related sections of the references below. The following materials are required for the course:

- Online commercial pilot ground school course (Sporty's, King Schools, or equivalent)
- Airplane Flying Handbook (FAA-H-8083-3)
- Pilot's Handbook of Aeronautical Knowledge (FAA-H-8083-25)
- Aviation Weather Handbook (FAA-H-8083-28)
- Risk Management Handbook (FAA-H-8083-2)
- Pilot's Operating Handbooks and checklists for the Cessna 172 or Piper PA-28-181 Archer and the Piper PA-28R Arrow
- FAR/AIM (current edition)
- Current Chart Supplement U.S. (Southeast)
- Current sectional charts for the planned routes and the Orlando Terminal Area Chart (paper or ForeFlight)
- Airman Knowledge Testing Supplement for Commercial Pilot (FAA-CT-8080-1, current edition)
- Commercial Pilot – Airplane Airman Certification Standards (FAA-S-ACS-7, current edition)
- ForeFlight or another electronic flight bag with current data

Stage written exams and end-of-course written exam

Each ground stage ends with a written stage exam on the material unique to that stage. The minimum passing score is 80%, and the instructor reviews every incorrect answer with the student before the next stage begins. After all ground lessons are complete, the student takes the end-of-course written exam, a comprehensive review for the FAA Commercial Pilot – Airplane knowledge test. The logged ground training and a passed end-of-course exam are the basis for the knowledge test endorsement required by 14 CFR 61.35(a)(1) and 61.123(c). Students are encouraged to take the FAA knowledge test before Flight Stage 2 begins.

Stage checks and end-of-course check

Each flight stage ends with a stage check conducted by the chief instructor: Flight Lesson 3 (commercial cross-country), Flight Lesson 10 (complex airplane and commercial maneuvers), and Flight Lesson 18 (end-of-course check). The student must meet the stage completion standards before moving to the next stage. The end-of-course check is a full mock practical test flown to the current Commercial Pilot – Airplane ACS, and is the basis for the practical test endorsements required by 14 CFR 61.39(a)(6) and 61.123(e).

Preflight orientation

Before each flight, the instructor briefs the lesson: its objectives, the elements to be covered, and the completion standards, including unfamiliar terms and the maneuvers and procedures to be flown. The briefing is tailored to the flight, the local environment (the X04 traffic pattern, the Orlando Class B airspace, and Central Florida weather), and the individual student. Before each solo or PDPIC flight, the student briefs the instructor on the plan, the weather, and the alternates. After every lesson, the instructor gives the student a written debrief stating what met standards, what needs more work, and the plan for the next lesson.

Deviations

This syllabus has been written with a building block progression of learning. The succession of the lessons is designed to optimize the learning process. However, even though the lessons are arranged in a logical sequence, the syllabus should not be considered a rigid document. It should be considered as an abstract or summary of the course of training. Therefore the instruction must provide flexibility to adapt to individual student needs and/or the local training environment. With the approval of the chief instructor, lessons may be rearranged to better suit the needs of the student as long as the overall progression of the building blocks is not disturbed. Stages 2 and 3 may be flown in parallel when aircraft availability or weather makes that more efficient, but the 300 nm cross-country and the night solo flights are flown only after the Stage 1 check.

Course completion certificate

Students who complete all ground and flight lessons, stage exams, and stage checks receive a DZ Aviation course completion certificate after Flight Lesson 18. Because DZ Aviation trains under Part 61, this is not a Part 141 graduation certificate: eligibility for the practical test comes from the student's logged aeronautical experience (14 CFR 61.129(a)), a passed knowledge test, and the required instructor endorsements (14 CFR 61.39 and 61.123).

Course completion

To complete the course, the student must complete the ground and flight lessons in the order given (unless changed by the chief instructor as described under Deviations), meet every lesson and stage completion standard, and meet the aeronautical knowledge, flight proficiency, and aeronautical experience requirements of 14 CFR 61.125, 61.127, and 61.129(a).

Structure and Hours Plan

Ground course

	Self-study (recommended)	1-on-1 ground instruction	Stage and EOC exams	Total ground time
Stage 1	13.0	5.5	2.0	20.5
Stage 2	14.0	5.0	2.0	21.0
Stage 3	5.0	2.5	4.0	11.5
Part 61 minimum	**NS**	**NS**	**NS**	**NS**
Course total	**32.0**	**13.0**	**8.0**	**53.0**

NS = none specified. Part 61 sets no minimum ground hours: the student logs ground training or a home-study course on the 61.125(b) areas and receives a knowledge test endorsement (14 CFR 61.35 and 61.123(c)).

Ground course overview

Commercial Course	Lesson number	Self-study (recommended)	1-on-1 ground	Exam time	Total ground time	Lesson description
	1	3.0	1.5		4.5	Introduction to commercial training & commercial regulations
	2	4.0	1.0		5.0	Airports, airspace, charts & meteorology review
	3	2.0	1.0		3.0	Navigation & cross-country planning
	4	2.0	1.0		3.0	Physiology, night & high-altitude operations
	5	2.0	1.0		3.0	ADM, risk management & commercial decision making
	6			2.0	2.0	Stage 1 written exam
Stage 1	**Total**	**13.0**	**5.5**	**2.0**	**20.5**	
	7	3.0	1.0		4.0	High-performance powerplants & constant-speed propellers
	8	2.0	1.0		3.0	Retractable landing gear & Arrow systems
	9	2.0	0.5		2.5	Oxygen, pressurization & ice control systems
	10	3.0	1.0		4.0	Advanced aerodynamics & stability
	11	4.0	1.5		5.5	Performance & weight and balance
	12			2.0	2.0	Stage 2 written exam
Stage 2	**Total**	**14.0**	**5.0**	**2.0**	**21.0**	
	13	1.0	0.5		1.5	Maximum performance takeoffs & landings, power-off 180
	14	2.0	1.0		3.0	Performance & ground reference maneuvers
	15	2.0	1.0		3.0	Emergency procedures & upset prevention

Commercial Course	Lesson number	Self-study (recommended)	1-on-1 ground	Exam time	Total ground time	Lesson description
	16			2.0	2.0	Stage 3 written exam
	17			2.0	2.0	End-of-course exam
Stage 3	**Total**	**5.0**	**2.5**	**4.0**	**11.5**	
Course Total		**32.0**	**13.0**	**8.0**	**53.0**	

Flight lessons structure

Commercial course	Lesson	Pre/post brief	Dual	Solo / PDPIC	Complex (Arrow)	Dual XC	Solo XC	Night dual	Night solo	Practical test prep	Total flight
	1	1.0	2.0			2.0					2.0
	2	0.5		2.5			2.5				2.5
	3	1.0	2.0			2.0					2.0
Stage 1	**Total**	**2.5**	**4.0**	**2.5**	**0.0**	**4.0**	**2.5**	**0.0**	**0.0**	**0.0**	**6.5**
	4	1.0	1.5		1.5						1.5
	5	0.5	1.5		1.5						1.5
	6	0.5	1.5		1.5						1.5
	7	0.5	1.5		1.5						1.5
	8	1.0	2.0		2.0	2.0					2.0
	9	1.0	2.0		2.0	2.0		2.0			2.0
	10	1.0	1.5		1.5						1.5
Stage 2	**Total**	**5.5**	**11.5**	**0.0**	**11.5**	**4.0**	**0.0**	**2.0**	**0.0**	**0.0**	**11.5**
	11	0.5	1.5								1.5
	12	0.3		1.5							1.5
	13	0.5		2.5					2.5		2.5
	14	0.5		2.5					2.5		2.5
	15	1.0		5.0			5.0				5.0
	16	0.5	1.5							1.5	1.5
	17	0.5	1.5							1.5	1.5
	18	1.5	2.0							2.0	2.0
Stage 3	**Total**	**5.3**	**6.5**	**11.5**	**0.0**	**0.0**	**5.0**	**0.0**	**5.0**	**5.0**	**18.0**
Course Total		**13.3**	**22.0**	**14.0**	**11.5**	**8.0**	**7.5**	**2.0**	**5.0**	**5.0**	**36.0**
Part 61 Minimums			**20.0**	**10.0**	**10.0**	**2.0 day**		**2.0**	**5.0**	**3.0**	

The 20-hour dual minimum includes the 10 hours of instrument training credited from the instrument rating, so this syllabus provides 32.0 hours of training on the 61.127(b)(1) areas of operation when that credit is documented. Solo

flights may be flown as PDPIC with the chief instructor on board when the operator's insurance or the student's experience calls for it; the time counts toward 14 CFR 61.129(a)(4) either way. Lesson 2 is one structured solo cross-country; additional PIC cross-country flights are flown as time building. The times are a guide: lessons are repeated until their completion standards are met.

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Stage 1 – Ground Lessons

OBJECTIVES:

- During this stage, the student will learn the regulations that govern commercial pilot privileges and limitations, and will review airports, airspace, charts, weather, navigation, physiology, and aeronautical decision making at the level expected of a commercial pilot.

COMPLETION STANDARDS:

- This stage is complete when the student has taken the Commercial Stage 1 written exam with a minimum passing score of 80%, and the instructor has reviewed each incorrect response to ensure complete understanding before the student progresses to the next stage.

EXPECTATIONS:

- The student is expected to review and study the lessons' related material and attend each session prepared to progress through the course.

Ground Lesson 1: Introduction to commercial training & commercial regulations

OBJECTIVES:

- Become familiar with the commercial pilot syllabus, DZ Aviation and aircraft operator procedures, and the plan for building to 250 hours.
- Learn the regulations that define commercial pilot privileges and limitations and the operations a commercial pilot may conduct without an air carrier certificate.

SCHEDULE: 3.0 h self-study + 1.5 h 1-on-1

MATERIAL REQUIRED:

- FAR/AIM

LESSON ELEMENTS:

Introduction to the commercial training environment

- Commercial Pilot Syllabus and the time-building plan
- Expectations for punctuality, preparation, and professionalism
- Scheduling the Arrow and club aircraft
- SOP: stabilized approach and go-around policy
- Eligibility: age, medical certificate class, knowledge test, and practical test
- Commercial Pilot – Airplane ACS

14 CFR Part 61

- Commercial pilot privileges and limitations (61.133)
- Medical certificate requirements and duration (61.23)
- Complex, high-performance, and tailwheel endorsements (61.31)
- Recent flight experience (61.57) and flight review (61.56)

14 CFR Part 91 and Part 119

- Common carriage, holding out, and private carriage
- Operations exempt from Part 119 (119.1(e)), including student instruction, aerial work, and certain sightseeing flights
- Charitable and nonprofit flights (91.146)
- Equipment, inspection, and maintenance requirements for aircraft used for hire (91.205, 91.409)
- Operations over congested areas and minimum altitudes (91.119)

NTSB Part 830

- Accidents, incidents, and reporting requirements

COMPLETION STANDARDS:

- The student will demonstrate, through oral quizzing, understanding of commercial pilot privileges and limitations and of the difference between operations that require an air carrier certificate and those that do not.

Ground Lesson 2: Airports, airspace, charts & meteorology review

OBJECTIVES:

- Review the airport environment, airspace, and aeronautical charts for VFR operations.
- Review weather theory, hazards, reports, forecasts, and sources at the commercial level.

SCHEDULE: 4.0 h self-study + 1.0 h 1-on-1

MATERIAL REQUIRED:

- FAR/AIM
- Aviation Weather Handbook
- sectional charts

LESSON ELEMENTS:

Airports, airspace, and flight information

- Runway and taxiway markings, lighting, and runway incursion avoidance
- Airspace classes and operations in the Orlando Class B airspace
- Special use airspace and TFRs
- Chart Supplement and NOTAMs

Meteorology

- Weather factors and Florida weather patterns
- Thunderstorms, wind shear, turbulence, and icing
- METAR, TAF, GFA, AIRMETs, SIGMETs, and PIREPs
- Graphic weather products and in-flight weather sources

Aeronautical charts

- Sectional and terminal area charts
- Chart symbols, obstructions, and maximum elevation figures

COMPLETION STANDARDS:

- The student will demonstrate understanding of the airport environment, airspace, charts, and weather information during oral quizzing at the completion of the lesson.

Ground Lesson 3: Navigation & cross-country planning

OBJECTIVES:

- Review pilotage, dead reckoning, and radio and GPS navigation for VFR cross-country flight.
- Plan long cross-country flights to commercial standards, including the 300 nm cross-country.

SCHEDULE: **2.0 h self-study + 1.0 h 1-on-1**

MATERIAL REQUIRED:

- PHAK
- sectional charts
- Chart Supplement

LESSON ELEMENTS:

- Pilotage and checkpoint selection
- Dead reckoning and the navigation log
- VOR and GPS navigation
- Route and altitude selection, including VFR cruising altitudes
- Fuel planning and reserves
- Diversion and lost procedures
- VFR flight plans and flight following
- Planning the 300 nm cross-country and the day and night cross-countries of more than 100 nm

COMPLETION STANDARDS:

- The student will plan a commercial cross-country flight accurately and demonstrate understanding of VFR navigation during oral quizzing at the completion of the lesson.

Ground Lesson 4: Physiology, night & high-altitude operations

OBJECTIVES:

- Review the physiological factors that affect day and night flight.
- Learn the requirements and hazards of high-altitude operations, including supplemental oxygen.

SCHEDULE: 2.0 h self-study + 1.0 h 1-on-1

MATERIAL REQUIRED:

- PHAK
- AIM

LESSON ELEMENTS:

- The eye, night vision, and night scanning
- Visual illusions and landing illusions
- Spatial disorientation
- Hypoxia, hyperventilation, and decompression sickness
- Supplemental oxygen requirements (91.211)
- Alcohol, drugs, fatigue, and performance
- Night operations: lighting, airport identification, and emergencies at night

COMPLETION STANDARDS:

- The student will demonstrate knowledge of physiological factors and of night and high-altitude operations during oral quizzing at the completion of the lesson.

Ground Lesson 5: ADM, risk management & commercial decision making

OBJECTIVES:

- Gain additional knowledge of aeronautical decision making, risk management, and single-pilot resource management as they apply to commercial operations.
- Understand the pressures that commercial flying puts on the decision-making process.

SCHEDULE: 2.0 h self-study + 1.0 h 1-on-1

MATERIAL REQUIRED:

- Risk Management Handbook
- PHAK

LESSON ELEMENTS:

- The decision-making process and risk assessment (PAVE, 3P)
- Hazardous attitudes and their antidotes
- Commercial and customer pressure; schedule pressure and get-there-itis
- Crew and passenger communication
- Resource use and workload management
- Situational awareness and controlled flight into terrain
- Personal minimums for commercial operations

COMPLETION STANDARDS:

- The student will demonstrate understanding of aeronautical decision making and risk management in commercial operations during oral quizzing at the completion of the lesson.

Ground Lesson 6: Stage exam

OBJECTIVES:

- Demonstrate comprehension of the material presented in Commercial Stage 1.

SCHEDULE: 2.0 h

LESSON ELEMENTS:

Commercial Stage 1 exam

- Commercial regulations and NTSB Part 830
- Airports, airspace, and charts
- Meteorology
- Navigation and cross-country planning
- Physiology, night, and high-altitude operations
- Aeronautical decision making and risk management

COMPLETION STANDARDS:

- The lesson and stage are complete when the student has completed the Stage 1 exam with a minimum score of 80%, and the instructor has reviewed each incorrect response to ensure complete understanding before progressing to the next stage.

Stage 2 – Ground Lessons

OBJECTIVES:

- During this stage, the student will learn the operation of complex airplane systems, using the Piper Arrow as the example, along with advanced aerodynamics, airplane performance, and weight and balance.

COMPLETION STANDARDS:

- This stage is complete when the student has taken the Commercial Stage 2 written exam with a minimum passing score of 80%, and the instructor has reviewed each incorrect response to ensure complete understanding before the student progresses to the next stage.

EXPECTATIONS:

- The student is expected to review and study the lessons' related material and attend each session prepared to progress through the course.

Ground Lesson 7: High-performance powerplants & constant-speed propellers

OBJECTIVES:

- Gain a working knowledge of fuel-injected engines, engine monitoring, and turbocharging.
- Understand the principles and operation of the constant-speed propeller.

SCHEDULE: 3.0 h self-study + 1.0 h 1-on-1

MATERIAL REQUIRED:

- PHAK
- Airplane Flying Handbook
- Arrow POH

LESSON ELEMENTS:

Fuel-injected engines

- Fuel injection system components and operation
- Normal, hot, and flooded starts
- Mixture leaning by EGT
- Engine monitoring: EGT, CHT, oil temperature, and oil pressure
- Detonation and preignition
- Induction icing and alternate air

Turbocharging (awareness)

- Principles, system operation, and high-altitude performance

Constant-speed propellers

- Propeller principles and governor operation
- Manifold pressure and RPM: power settings and the order of power changes
- Propeller failure modes and overspeed

COMPLETION STANDARDS:

- The student will demonstrate understanding of high-performance powerplants and constant-speed propellers during oral quizzing at the completion of the lesson.

Ground Lesson 8: Retractable landing gear & Arrow systems

OBJECTIVES:

- Understand the operation, limitations, and malfunctions of retractable landing gear.
- Learn the systems, limitations, and procedures of the Piper Arrow.

SCHEDULE: 2.0 h self-study + 1.0 h 1-on-1

MATERIAL REQUIRED:

- Arrow POH
- Airplane Flying Handbook

LESSON ELEMENTS:

Retractable landing gear

- Hydraulic and electric gear systems
- Gear position indications, warning horn, and squat switch
- Gear and flap airspeed limitations
- Gear-up landing prevention: GUMPS checks and stabilized approach
- Gear malfunctions and emergency gear extension
- Automatic gear extension systems (if installed)

Piper Arrow systems

- Engine, propeller, fuel, and electrical systems
- V-speeds, limitations, and the power and configuration table
- Normal and emergency checklists
- Weight and balance and performance data

COMPLETION STANDARDS:

- The student will demonstrate understanding of retractable landing gear and Arrow systems, limitations, and procedures during oral quizzing at the completion of the lesson.

Ground Lesson 9: Oxygen, pressurization & ice control systems

OBJECTIVES:

- Understand the operation and limitations of oxygen, pressurization, and ice control systems.

SCHEDULE: **2.0 h self-study + 0.5 h 1-on-1**

MATERIAL REQUIRED:

- PHAK

LESSON ELEMENTS:

Oxygen systems

- Continuous-flow, diluter-demand, and pressure-demand systems
- Pulse oximeters
- Oxygen storage and servicing

Cabin pressurization (awareness)

- Principles, components, and pressurization emergencies

Ice control systems

- Anti-ice and deice systems for airfoils, propellers, and windshields
- Pitot heat
- Limitations of airplanes not certificated for flight into known icing

COMPLETION STANDARDS:

- The student will demonstrate understanding of oxygen, pressurization, and ice control systems during oral quizzing at the completion of the lesson.

Ground Lesson 10: Advanced aerodynamics & stability

OBJECTIVES:

- Integrate aerodynamic theory with the operational factors that affect airplane flight characteristics, as a basis for the commercial maneuvers.

SCHEDULE: 3.0 h self-study + 1.0 h 1-on-1

MATERIAL REQUIRED:

- PHAK
- Airplane Flying Handbook

LESSON ELEMENTS:

Forces of flight

- Lift equation and high-lift devices
- Induced and parasite drag; L/D max
- Ground effect
- Weight, load factor, and the V-g diagram
- Maneuvering speed and its change with weight

Stability and control

- Static and dynamic stability
- Longitudinal, lateral, and directional stability
- Effect of CG position on stability and control

Aerodynamics of maneuvers

- Turning flight, rate and radius of turn
- Left-turning tendencies at high power and low airspeed
- Stall causes, types, and recovery
- Spin causes, phases, and recovery (awareness)

COMPLETION STANDARDS:

- The student will demonstrate understanding of advanced aerodynamic concepts during oral quizzing at the completion of the lesson.

Ground Lesson 11: Performance & weight and balance

OBJECTIVES:

- Gain the working knowledge needed to predict airplane performance from POH data.
- Learn to compute and control weight and balance, including weight shifts.

SCHEDULE: 4.0 h self-study + 1.5 h 1-on-1

MATERIAL REQUIRED:

- Arrow and Cessna 172 or Archer POHs
- PHAK

LESSON ELEMENTS:

Performance

- Density altitude, wind, weight, and runway condition
- Takeoff, climb, cruise, and landing performance charts
- Glide distance and stall speeds
- Significance of exceeding performance limitations

Weight and balance

- Weight and balance documents and limitations
- Computation, graph, and table methods
- Weight shift and weight addition or removal
- Effects of operating at high gross weight and at forward and aft CG

COMPLETION STANDARDS:

- The student will compute performance and weight and balance accurately for the Arrow and the training airplane during oral quizzing at the completion of the lesson.

Ground Lesson 12: Stage exam

OBJECTIVES:

- Demonstrate comprehension of the material presented in Commercial Stage 2.

SCHEDULE: 2.0 h

LESSON ELEMENTS:

Commercial Stage 2 exam

- High-performance powerplants and constant-speed propellers
- Retractable landing gear and Arrow systems
- Oxygen, pressurization, and ice control systems
- Advanced aerodynamics
- Performance and weight and balance

COMPLETION STANDARDS:

- The lesson and stage are complete when the student has completed the Stage 2 exam with a minimum score of 80%, and the instructor has reviewed each incorrect response to ensure complete understanding before progressing to the next stage.

Stage 3 – Ground Lessons

OBJECTIVES:

- During this stage, the student will learn the procedures, references, and common errors of the commercial maneuvers and the emergency procedures expected of a commercial pilot.

COMPLETION STANDARDS:

- This stage is complete when the student has taken the Commercial Stage 3 written exam and the end-of-course exam with minimum passing scores of 80%, and the instructor has reviewed each incorrect response to ensure complete understanding.

EXPECTATIONS:

- The student is expected to review and study the lessons' related material and attend each session prepared to progress through the course.

Ground Lesson 13: Maximum performance takeoffs & landings, power-off 180

OBJECTIVES:

- Understand the procedures and performance considerations for short-field and soft-field takeoffs and landings to commercial standards.
- Learn the power-off 180° accuracy approach and landing.

SCHEDULE: **1.0 h self-study + 0.5 h 1-on-1**

MATERIAL REQUIRED:

- Airplane Flying Handbook
- Commercial Pilot ACS

LESSON ELEMENTS:

- Short-field takeoff and maximum performance climb
- Short-field approach and landing
- Soft-field takeoff, climb, approach, and landing
- Power-off 180° accuracy approach and landing: key positions, glide management, and the landing tolerance
- Planning for the X04 runway length and displaced threshold

COMPLETION STANDARDS:

- The student will demonstrate understanding of maximum performance takeoffs and landings and the power-off 180° accuracy landing during oral quizzing at the completion of the lesson.

Ground Lesson 14: Performance & ground reference maneuvers

OBJECTIVES:

- Learn the procedures, references, and common errors of the commercial performance and ground reference maneuvers, and how each develops pilot skill.

SCHEDULE: 2.0 h self-study + 1.0 h 1-on-1

MATERIAL REQUIRED:

- Airplane Flying Handbook
- Commercial Pilot ACS

LESSON ELEMENTS:

- Steep turns
- Steep spirals
- Chandelles
- Lazy eights
- Eights on pylons and pivotal altitude
- Selecting a practice area and clearing procedures

COMPLETION STANDARDS:

- The student will describe each maneuver's entry, references, and completion, and its ACS standards, during oral quizzing at the completion of the lesson.

Ground Lesson 15: Emergency procedures & upset prevention

OBJECTIVES:

- Understand the emergency procedures for commercial VFR operations in single-engine and complex airplanes.
- Learn upset prevention and recovery.

SCHEDULE: 2.0 h self-study + 1.0 h 1-on-1

MATERIAL REQUIRED:

- Airplane Flying Handbook
- POHs

LESSON ELEMENTS:

- Emergency descent
- Emergency approach and landing
- Engine failure and partial power loss
- In-flight fire
- Gear and flap malfunctions; gear-up landing
- Door opening in flight
- Systems and equipment malfunctions
- Emergency equipment and survival gear
- Upset prevention and recovery; spin awareness

COMPLETION STANDARDS:

- The student will demonstrate understanding of commercial pilot emergency procedures during oral quizzing at the completion of the lesson.

Ground Lesson 16: Stage exam

OBJECTIVES:

- Demonstrate comprehension of the material presented in Commercial Stage 3.

SCHEDULE: 2.0 h

LESSON ELEMENTS:

Commercial Stage 3 exam

- Maximum performance takeoffs and landings
- Power-off 180° accuracy approach and landing
- Performance and ground reference maneuvers
- Emergency procedures and upset prevention

COMPLETION STANDARDS:

- The lesson is complete when the student has completed the Stage 3 exam with a minimum score of 80%, and the instructor has reviewed each incorrect response to ensure complete understanding before the end-of-course exam.

Ground Lesson 17: End-of-course exam

OBJECTIVES:

- Demonstrate comprehension of all material in the ground course in preparation for the FAA Commercial Pilot – Airplane knowledge test.

SCHEDULE: 2.0 h

LESSON ELEMENTS:

End-of-course exam

- Commercial regulations
- Airspace, airports, and charts
- Meteorology
- Navigation and cross-country planning
- Physiology and aeronautical decision making
- Complex airplane systems
- Advanced aerodynamics, performance, and weight and balance
- Commercial maneuvers and emergency procedures

COMPLETION STANDARDS:

- The lesson and the ground course are complete when the student has completed the end-of-course exam with a minimum score of 80%, and the instructor has reviewed each incorrect response. The instructor then issues the knowledge test endorsement.

Stage 1 – Flight Lessons

INTRODUCTION:

Through the flight lessons, the student will obtain the knowledge, skill, and aeronautical experience necessary to meet the requirements for a commercial pilot certificate with an airplane category and single-engine land class rating.

COURSE COMPLETION STANDARDS:

The student must demonstrate through flight checks and show through appropriate records that he or she meets the flight proficiency and aeronautical experience requirements of 14 CFR 61.127(b)(1) and 61.129(a).

STAGE 1 OBJECTIVES:

During this stage, the student plans and flies VFR cross-country flights to commercial standards, using pilotage, dead reckoning, and radio and GPS navigation, and begins building PIC cross-country experience. Flights in this stage may be flown with the instructor on board as PDPIC once the student has shown the required proficiency.

STAGE 1 COMPLETION STANDARDS:

The stage is complete when the student plans VFR cross-country flights completely and accurately and flies them safely, with sound judgment, to the standards of the current Commercial Pilot – Airplane ACS.

Flight Lesson 1 – Dual Cross-Country

Preflight Brief	Dual	Dual cross-countr y	Post Brief
0.8	2.0	2.0	0.2

OBJECTIVES:

- Plan and fly a cross-country flight to an unfamiliar airport more than 50 nm from X04, to commercial standards.

LESSON ELEMENTS:

Preflight Discussion	Review Elements this Flight	Review Elements continued
❑ Commercial cross-country flight planning: route, altitude, checkpoints, and fuel ❑ Weight and balance and performance ❑ Commercial pilot privileges and limitations ❑ Performance and limitations ❑ Weather and NOTAM information	❑ Preflight preparation and cockpit management ❑ Pilotage and dead reckoning ❑ VOR and GPS navigation ❑ Flight following with Orlando Approach and Jacksonville Center	❑ Unfamiliar towered and non-towered airports ❑ Diversion and lost procedures ❑ Postflight procedures

COMPLETION STANDARDS:

- The student selects suitable cruising altitudes and checkpoints, calculates fuel burn with an adequate reserve, and holds ETAs within 3 minutes.
- The flight includes a landing more than 50 nm in a straight line from X04.

Flight Lesson 2 – Solo Cross-Country

Preflight Brief	Solo	Solo cross-country	Post Brief
0.3	2.5	2.5	0.2

OBJECTIVES:

- Build proficiency and PIC experience in cross-country flight over unfamiliar routes.
- This lesson may also be flown as dual instruction or as PDPIC with the instructor on board.

LESSON ELEMENTS:

Preflight Discussion	Review Elements this Flight	
❑ Cross-country flight assigned by the instructor ❑ Performance and limitations ❑ Weather and NOTAM information	❑ Cross-country planning and preflight preparation ❑ Pilotage, dead reckoning, and radio navigation ❑ Use of controlled and non-towered airports ❑ Postflight procedures	

COMPLETION STANDARDS:

- The student completes the planned flight safely, with a landing more than 50 nm from X04, and reports the flight in the debrief with actual times and fuel against plan.

Flight Lesson 3 – Stage Check – Dual Cross-Country

Preflight Brief	Dual	Dual cross-countr y	Post Brief
0.8	2.0	2.0	0.2

OBJECTIVES:

- The chief instructor evaluates the student's VFR cross-country planning and flight at commercial standards.

LESSON ELEMENTS:

Preflight Discussion	Review Elements this Flight	Review Elements continued
❑ Cross-country flight planning ❑ Weight and balance ❑ Commercial pilot limitations ❑ Performance and limitations ❑ Weather and NOTAM information	❑ Pilotage, dead reckoning, and radio navigation ❑ National airspace system ❑ Diversion and lost procedures ❑ Use of unfamiliar airports	❑ Radio communications and ATC light signals ❑ Runway incursion avoidance ❑ Simulated adverse weather, high density altitude, and radio failure ❑ Postflight procedures

COMPLETION STANDARDS:

- The student shows complete understanding of VFR cross-country planning and procedures, operates safely in the national airspace system, and uses good judgment consistently, to the current Commercial Pilot – Airplane ACS.

Stage 2 – Flight Lessons

OBJECTIVES:

During this stage, the student learns to operate the Piper Arrow, a complex airplane, through normal, maximum performance, and emergency procedures, is introduced to the commercial performance and ground reference maneuvers, and flies the day and night cross-countries of more than 100 nm. All flights in this stage count toward the 10 hours of complex airplane training.

COMPLETION STANDARDS:

This stage is complete when the student operates the Arrow safely and proficiently in all normal and emergency procedures, performs the commercial maneuvers to the current Commercial Pilot – Airplane ACS, and receives the complex airplane endorsement (14 CFR 61.31(e)).

Flight Lesson 4 – Dual Local – Arrow

Preflight Brief	Dual	Complex	Post Brief
0.8	1.5	1.5	0.2

OBJECTIVES:

- Become familiar with the Arrow, its systems, and its normal procedures.
- Learn the attitudes, power settings, and configurations for the basic maneuvers.

LESSON ELEMENTS:

Preflight Discussion	New Elements this Flight	Review Elements this Flight
❑ Certificates and documents ❑ Complex airplane systems and V-speeds ❑ Power and configuration table: manifold pressure and RPM ❑ Gear and flap operation and limitations; GUMPS checks ❑ Performance and limitations ❑ Weather and NOTAM information	❑ Preflight inspection and engine start (fuel-injected) ❑ Before-takeoff check, including propeller exercise ❑ Normal and crosswind takeoff and climb; gear retraction ❑ Power changes with a constant-speed propeller ❑ Slow flight, power-off and power-on stalls ❑ Steep turns ❑ Traffic pattern, normal and crosswind approach and landing ❑ Go-around with gear and flaps	❑ Collision avoidance and Class B awareness ❑ Positive exchange of flight controls ❑ Postflight procedures

COMPLETION STANDARDS:

- The student performs the listed ground operations with minimal assistance and completes the GUMPS check before every landing.
- The student maintains altitude ±150 ft, heading ±10°, and airspeed ±10 kt.

Flight Lesson 5 – Dual Local – Arrow

Preflight Brief	Dual	Complex	Post Brief
0.3	1.5	1.5	0.2

OBJECTIVES:

- Introduce maximum performance takeoffs and landings and emergency procedures in the Arrow.

LESSON ELEMENTS:

Preflight Discussion	New Elements this Flight	Review Elements this Flight
❑ Short-field and soft-field procedures and performance ❑ Emergency gear extension ❑ Emergency procedures and checklists ❑ Performance and limitations ❑ Weather and NOTAM information	❑ Short-field takeoff, maximum performance climb, approach, and landing ❑ Soft-field takeoff, climb, approach, and landing ❑ Emergency gear extension (as the POH and instructor allow) ❑ Emergency descent ❑ Simulated engine failure and emergency approach and landing ❑ Systems and equipment malfunctions	❑ Slow flight and stalls ❑ Normal and crosswind takeoffs and landings ❑ Go-arounds

COMPLETION STANDARDS:

- The student performs maximum performance takeoffs and landings and emergency procedures with minimal assistance.
- The student maintains approach airspeed +10/−5 kt.

Flight Lesson 6 – Dual Local – Arrow

Preflight Brief	Dual	Complex	Post Brief
0.3	1.5	1.5	0.2

OBJECTIVES:

- Introduce chandelles and lazy eights, and steep turns to commercial standards.

LESSON ELEMENTS:

Preflight Discussion	New Elements this Flight	Review Elements this Flight
❑ Chandelles ❑ Lazy eights ❑ Steep turns at 50° of bank ❑ Practice area selection and clearing turns ❑ Performance and limitations ❑ Weather and NOTAM information	❑ Chandelles ❑ Lazy eights ❑ Steep turns (commercial)	❑ Short-field and soft-field takeoffs and landings ❑ Upset prevention and recovery ❑ Postflight procedures

COMPLETION STANDARDS:

- The student understands the method and technique of the chandelle and the lazy eight and performs each with instructor assistance.

Flight Lesson 7 – Dual Local – Arrow

Preflight Brief	Dual	Complex	Post Brief
0.3	1.5	1.5	0.2

OBJECTIVES:

- Introduce eights on pylons, steep spirals, and the power-off 180° accuracy approach and landing.

LESSON ELEMENTS:

Preflight Discussion	New Elements this Flight	Review Elements this Flight
❑ Eights on pylons and pivotal altitude ❑ Steep spirals ❑ Power-off 180° accuracy approach and landing ❑ Performance and limitations ❑ Weather and NOTAM information	❑ Eights on pylons ❑ Steep spirals ❑ Power-off 180° accuracy approach and landing	❑ Chandelles ❑ Lazy eights ❑ Steep turns ❑ Short-field and soft-field takeoffs and landings

COMPLETION STANDARDS:

- The student understands the method and technique of each new maneuver and performs each with instructor assistance.

Flight Lesson 8 – Dual Day Cross-Country – Arrow (2 h, more than 100 nm)

Preflight Brief	Dual	Complex	Dual cross-country	Post Brief
0.8	2.0	2.0	2.0	0.2

OBJECTIVES:

- Gain proficiency in complex airplane cross-country operations and fly the day cross-country required by 14 CFR 61.129(a)(3)(iii).

LESSON ELEMENTS:

Preflight Discussion	Review Elements this Flight	
❑ Cross-country planning for the Arrow: power settings, fuel flow, and leaning ❑ Airport operations at an unfamiliar airport ❑ Diversion and lost procedures ❑ National airspace system ❑ Aeromedical factors ❑ Performance and limitations ❑ Weather and NOTAM information	❑ Pilotage, dead reckoning, and radio navigation ❑ Cruise procedures and engine management ❑ Diversion to an alternate ❑ Use of controlled and non-towered airports ❑ Postflight procedures	

NOTE: The flight is at least 2 hours, in day VFR conditions, with a point of landing more than 100 nm in a straight line from X04, for example Fernandina Beach (KFHB, about 115 nm) or Fort Myers Page Field (KFMY, about 128 nm).

COMPLETION STANDARDS:

- The student plans and flies the flight with minimal assistance and manages the Arrow's engine and fuel correctly.
- The flight meets the requirements of 14 CFR 61.129(a)(3)(iii).

Flight Lesson 9 – Dual Night Cross-Country – Arrow (2 h, more than 100 nm)

Preflight Brief	Dual	Complex	Dual cross-country	Night	Post Brief
0.8	2.0	2.0	2.0	2.0	0.2

OBJECTIVES:

- Gain proficiency in complex airplane cross-country operations at night and fly the night cross-country required by 14 CFR 61.129(a)(3)(iv).

LESSON ELEMENTS:

Preflight Discussion	Review Elements this Flight	
❑ Night flight operations and night vision ❑ Night cross-country planning, lighted checkpoints, and alternates ❑ Night emergencies ❑ Airport lighting and pilot-controlled lighting ❑ Performance and limitations ❑ Weather and NOTAM information	❑ Night cross-country navigation ❑ Night takeoffs and landings at unfamiliar airports ❑ Emergency procedures at night (simulated) ❑ Postflight procedures	

NOTE: The flight is at least 2 hours, at night in VFR conditions, with a point of landing more than 100 nm in a straight line from X04.

COMPLETION STANDARDS:

- The student plans and flies the night cross-country with minimal assistance and good judgment.
- The flight meets the requirements of 14 CFR 61.129(a)(3)(iv).

Flight Lesson 10 – Stage Check – Dual Local – Arrow

Preflight Brief	Dual	Complex	Post Brief
0.8	1.5	1.5	0.2

OBJECTIVES:

- The chief instructor evaluates the student's operation of the complex airplane and the commercial maneuvers.

LESSON ELEMENTS:

Preflight Discussion	Review Elements this Flight	Review Elements continued
❑ Complex airplane systems and limitations ❑ Maneuvers, procedures, and acceptable performance criteria ❑ Weather and NOTAM information	❑ Normal, short-field, and soft-field takeoffs and landings ❑ Power-off 180° accuracy approach and landing ❑ Steep turns, chandelles, and lazy eights ❑ Eights on pylons and steep spirals	❑ Slow flight and stalls ❑ Emergency descent and emergency approach and landing ❑ Emergency gear extension procedure ❑ Go-around

COMPLETION STANDARDS:

- The student operates the Arrow safely in every normal and emergency procedure and performs each maneuver to the current Commercial Pilot – Airplane ACS.
- The chief instructor issues the complex airplane endorsement (14 CFR 61.31(e)).

Stage 3 – Flight Lessons

OBJECTIVES:

During this stage, the student brings every commercial maneuver to ACS standards in the airplane to be used for the practical test, completes the solo or PDPIC experience required by 14 CFR 61.129(a)(4), including the night towered-airport flights and the 300 nm cross-country, and prepares for the practical test.

COMPLETION STANDARDS:

This stage is complete when the student performs every task in the current Commercial Pilot – Airplane ACS with the outcome never seriously in doubt, and has met every aeronautical experience requirement of 14 CFR 61.129(a).

Flight Lesson 11 – Dual Local

Preflight Brief	Dual	Post Brief
0.3	1.5	0.2

OBJECTIVES:

- Transfer the commercial maneuvers to the Cessna 172 or Archer, the airplane normally used for the practical test.
- Review upset prevention and recovery.

LESSON ELEMENTS:

Preflight Discussion	Review Elements this Flight	Review Elements continued
❑ Differences in maneuver entries and references between the Arrow and the training airplane ❑ Upset prevention and recovery ❑ Performance and limitations ❑ Weather and NOTAM information	❑ Steep turns and steep spirals ❑ Chandelles and lazy eights ❑ Eights on pylons	❑ Power-off 180° accuracy approach and landing ❑ Short-field and soft-field takeoffs and landings ❑ Recovery from unusual attitudes (visual references)

COMPLETION STANDARDS:

- The student performs each maneuver in the training airplane with minimal instructor input and is ready to practice solo.

Flight Lesson 12 – Solo Local – Maneuvers Practice

Preflight Brief	Solo	Post Brief
0.2	1.5	0.1

OBJECTIVES:

- Practice the commercial maneuvers solo to build consistency.

LESSON ELEMENTS:

Preflight Discussion	Review Elements this Flight	
❑ Practice area, altitudes, and clearing procedures ❑ Performance and limitations ❑ Weather and NOTAM information	❑ Steep turns, steep spirals, chandelles, lazy eights, and eights on pylons ❑ Short-field and soft-field takeoffs and landings ❑ Power-off 180° accuracy approach and landing (only when the X04 pattern is clear)	

COMPLETION STANDARDS:

- The student completes the planned practice safely and reports in the debrief which maneuvers met ACS standards.

Flight Lesson 13 – Solo Night – Towered Airport

Preflight Brief	Solo	Night	Post Brief
0.3	2.5	2.5	0.2

OBJECTIVES:

- Build night VFR experience, with takeoffs and landings with a traffic pattern at an airport with an operating control tower.
- This lesson may be flown as PDPIC with the instructor on board.

LESSON ELEMENTS:

Preflight Discussion	Review Elements this Flight	
❑ Night operations at a towered airport: ATIS, ground, tower, and taxi routes at night ❑ Tower hours (confirmed in the Chart Supplement) at Orlando Sanford (KSFB) or Orlando Executive (KORL) ❑ Night emergencies ❑ Performance and limitations ❑ Weather and NOTAM information	❑ Night takeoffs, traffic patterns, and full-stop landings ❑ Radio communications with the tower ❑ Airport lighting and runway incursion avoidance at night ❑ Return to X04 with pilot-controlled lighting	

COMPLETION STANDARDS:

- The student logs at least 5 takeoffs and 5 landings, each with a traffic pattern, at an airport with an operating control tower, and completes the flight safely.

Flight Lesson 14 – Solo Night – Towered Airport

Preflight Brief	Solo	Night	Post Brief
0.3	2.5	2.5	0.2

OBJECTIVES:

- Complete the 5 hours of night VFR and the 10 takeoffs and landings at a towered airport required by 14 CFR 61.129(a)(4)(ii).

LESSON ELEMENTS:

Preflight Discussion	Review Elements this Flight	
❑ Night cross-country to a towered airport (may combine with the pattern work) ❑ Performance and limitations ❑ Weather and NOTAM information	❑ Night takeoffs, traffic patterns, and full-stop landings at a towered airport ❑ Night navigation ❑ Postflight procedures	

COMPLETION STANDARDS:

- With Lesson 13, the student has logged at least 5.0 hours of night VFR solo or PDPIC time and at least 10 takeoffs and 10 landings with a traffic pattern at an airport with an operating control tower.

Flight Lesson 15 – Solo Long Cross-Country (300 nm)

Preflight Brief	Solo	Solo cross-countr y	Post Brief
0.8	5.0	5.0	0.2

OBJECTIVES:

- Complete the cross-country required by 14 CFR 61.129(a)(4)(i), with the student responsible for all planning and decisions.
- This lesson may be flown as PDPIC with the instructor on board; the instructor assists only to prevent a regulatory violation or an unsafe situation.

LESSON ELEMENTS:

Preflight Discussion	Review Elements this Flight	
❑ Long cross-country planning: route, fuel stops, alternates, and airspace ❑ Weather along a 500 nm route and go/no-go decisions ❑ Fatigue and personal minimums ❑ Performance and limitations ❑ Weather and NOTAM information	❑ Pilotage, dead reckoning, and radio and GPS navigation ❑ Unfamiliar towered and non-towered airports ❑ Fuel management and diversion planning ❑ Flight following across facility boundaries ❑ Postflight procedures	

NOTE: The flight totals at least 300 nm, with full-stop landings at a minimum of three points, one of which is at least 250 nm in a straight line from X04. A sample route is X04 – Charleston, SC (KCHS, about 264 nm) – Savannah (KSAV) – Jacksonville Craig (KCRG) – X04, about 545 nm.

COMPLETION STANDARDS:

- The student plans and flies the entire flight safely and with sound judgment.
- Every requirement of 14 CFR 61.129(a)(4)(i) is met and recorded in the logbook.

Flight Lesson 16 – Dual Local – Practical Test Preparation

Preflight Brief	Dual	Practical test prep	Post Brief
0.3	1.5	1.5	0.2

OBJECTIVES:

- Begin practical test preparation, flown within the 2 calendar months before the month of the test.

LESSON ELEMENTS:

Preflight Discussion	Review Elements this Flight	
❑ Practical test procedures and the plan of action ❑ Oral topics: regulations, systems, performance, and weather ❑ Weather and NOTAM information	❑ Short-field and soft-field takeoffs and landings ❑ Power-off 180° accuracy approach and landing ❑ Steep turns and steep spirals ❑ Chandelles and lazy eights ❑ Eights on pylons	

COMPLETION STANDARDS:

- The student performs each task to the current Commercial Pilot – Airplane ACS with no instructor input.

Flight Lesson 17 – Dual Local – Practical Test Preparation

Preflight Brief	Dual	Practical test prep	Post Brief
0.3	1.5	1.5	0.2

OBJECTIVES:

- Continue practical test preparation, flown within the 2 calendar months before the month of the test.

LESSON ELEMENTS:

Preflight Discussion	Review Elements this Flight	
❑ Remaining oral topics ❑ Acceptable performance criteria ❑ Weather and NOTAM information	❑ Cross-country departure, navigation, and diversion ❑ Slow flight, power-off and power-on stalls, accelerated stalls ❑ Emergency descent and emergency approach and landing ❑ Systems and equipment malfunctions ❑ Go-around and forward slip to a landing	

COMPLETION STANDARDS:

- The student performs each task to the current Commercial Pilot – Airplane ACS with no instructor input.

Flight Lesson 18 – Stage Check – End of Course

Preflight Brief	Dual	Practical test prep	Post Brief
1.2	2.0	2.0	0.3

OBJECTIVES:

- This end-of-course check, conducted by the chief instructor, determines whether the student is prepared for the Commercial Pilot – Airplane practical test.

LESSON ELEMENTS:

Preflight Discussion	Review Elements this Flight	Review Elements continued
❑ Pilot qualifications and airworthiness requirements ❑ Weather information ❑ Cross-country flight planning ❑ National airspace system ❑ Performance and limitations ❑ Operation of systems ❑ Human factors ❑ Acceptable performance criteria	❑ Preflight procedures and checklist usage ❑ Normal, crosswind, short-field, and soft-field takeoffs and landings ❑ Power-off 180° accuracy approach and landing ❑ Go-around and forward slip to a landing ❑ Steep turns, steep spirals, chandelles, and lazy eights	❑ Eights on pylons ❑ Pilotage, dead reckoning, navigation systems, and diversion ❑ Slow flight and stalls ❑ Emergency descent, emergency approach and landing, and systems malfunctions ❑ Postflight procedures

COMPLETION STANDARDS:

- The student demonstrates proficiency that meets or exceeds the current FAA Commercial Pilot – Airplane Airman Certification Standards.
- Mastery of the airplane is demonstrated, the successful outcome of each task never seriously in doubt. Additional instruction is assigned, if necessary, to meet the stage and course completion standards.
- The instructor confirms that every 14 CFR 61.129(a) requirement, including 250 hours total time and documented instrument training, is logged before issuing the practical test endorsements.