COURSE SYLLABUS

FLIGHT INSTRUCTOR

KING SCHOOLS

Cessna eLearning
Web Based Instructional Programs

Cleared for Flight Instructing
Flight Instructor Training Course

SYLLABUS

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Cleared for Flight Instructing
Flight Instructor Syllabus
Your Path to Becoming a CFI

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FLIGHT INSTRUCTOR SYLLABUS
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Cleared for Flight Instructing
Cessna Flight Instructor Syllabus
Your Path to Becoming a CFI

Purpose

You are entering the realm of the most important position in all of aviation, the Flight Instructor. As the trainers, flight instructors hold the destiny of aviation in their hands by preparing new pilots and advancing existing pilots to obtain the knowledge and risk management, as well as the flight skills to safely operate in the national airspace system.

Your Cessna Flight Instructor syllabus lays out the ground and flight training that will prepare you to become a Certificated Flight Instructor (CFI). Your training will be tracked in the Cessna Flight Training System online *Course Tracking Application* (CTA). Each online Lab, Lesson Group and Lesson has been arranged with the flight lessons (represented by individual training scenarios) to progressively prepare you to teach flying.

The two stages of the *Cessna Flight Instructor Syllabus* are subdivided into one or more "phases," each containing multiple knowledge lessons and flight scenarios. Progress checks are located in phases at key points in the course including those marking the end of a stage.

You will use this document as your day-to-day guide for training since it provides all the details for applying the curriculum elements.

Although written to comply with the 14 CFR Part 141 Pilot School Flight Instructor Certification Course requirements, the *Cessna Flight Instructor Syllabus* may also be used with a 14 CFR Part 61 flight instructor training curriculum when adjusted for the part 61 requirements.

STEPS FOR BECOMING A CERTIFICATED FLIGHT INSTRUCTOR (CFI)

Becoming a Certificated Flight Instructor is a major milestone in a pilot's career since it is often the first level of flight employment. Your Cessna Pilot Center will explain, in detail, the course enrollment requirements shown below:

- Hold a commercial pilot or airline transport pilot certificate.
- Hold an instrument rating appropriate to the aircraft category and class for instructor privilege sought.
- Hold a current third class medical certificate.
- Pass knowledge tests on Fundamentals of Instructing and aeronautical knowledge appropriate to instructor rating sought.
- Complete the required flight training for the course (see Appendix A).
- Pass a flight instructor practical test.

COURSE ELEMENTS

The Cessna online training

- Provides innovative and interactive learning exercises.
- Is accessible anywhere you have an Internet connection or may be used remotely by downloading to a mobile device.

The unique design of the training program

- Integrates web-based knowledge sessions with flight scenarios.
- Ensures that before every flight you will have the required knowledge to succeed.

You and your instructor will discuss the schedule for your training and you will know

- When to complete the appropriate web-based knowledge instruction.
- What to prepare for each flight scenario.

Upon completion of each flight scenario you and your instructor will

- Review the elements of the flight scenario and the scenario outcome.
- Compare your performance to the completion standards.
- Independently evaluate the tasks in the flight scenario.
- Discuss and compare the results.
- Discuss the next flight scenario.

Please note that it may take you more than one flight to complete a flight scenario to the established standards.

COURSE STRUCTURE

STAGES

The course is divided into two stages:

- Stage 1: Learning the Flight Instructor Role
- Stage 2: Becoming a Flight Instructor

PHASES

Each stage is made up of one or more phases. There are a total of four phases:

Stage 1: Learning the Flight Instructor Role

Phase 1: Demonstrating Maneuvers from the Right Seat
Phase 2: Gaining Proficiency Demonstrating and Explaining Maneuvers
Phase 3: Refining Instructional Skills

Stage 2: Becoming a Flight Instructor

Phase 4: Demonstrating Instructional Competence

SCENARIOS

There are multiple flight scenarios within each phase. The completion standards for the scenario tasks in each phase are found in the respective Phase Proficiency Checklist.

Once all items on the phase proficiency checklist are completed to the level of performance required for that phase, you can then move on to the next phase of training.

You are not required to complete every flight scenario within a phase if you have already demonstrated the standards indicated for that phase, but it is highly recommended that you do so, as the scenarios progress in complexity to give you maximum efficiency in your training. Progress Checks are required scenarios.

PROGRESS CHECKS
Each stage has at least one Progress Check at the end of the last phase of each stage. The progress checks are found:

- Stage 1, phase 1
- Stage 1, phase 2
- Stage 1, phase 3
- Stage 2, phase 4

PHASE SEQUENCE
The four phases are:

1. DEMONSTRATING MANEUVERS FROM THE RIGHT SEAT — Your flight instructor curriculum ground study for Phase 1 reviews and delves further into Aerodynamics, Sectional Charts, Airspace and Weather Minimums, and Federal Aviation Regulations.

Your in-flight scenarios begin with exercising the flight controls and thereafter flying all the scenarios from the instructor's flight station (normally the right seat in a side-by-side cockpit). You will start explaining how to perform maneuvers as you demonstrate them. You will also start the process of analyzing and correcting errors with basic maneuvers made by your instructor when simulating a pilot you are training. You will also look for the risks involved with maneuvers and formulate strategies to mitigate them. In the last scenario of this phase you will fly with another instructor for a phase progress check.

2. GAINING PROFICIENCY, DEMONSTRATING AND EXPLAINING MANEUVERS — For this Phase's ground lessons, you will look more in depth at the Flight Instruments, Aircraft performance, Weather, Weight and Balance, then study how to teach flight maneuvers with the Teaching Maneuvers lab.

During your in-flight scenarios you will demonstrate all designated maneuvers to the specified standards while simultaneously explaining the elements of each maneuver. You will also start using scenarios for introducing a maneuver to a simulated pilot in training. In addition, you will continue exercising risk management while analyzing and correcting errors made by your instructor simulating a pilot being trained on more advanced maneuvers. The last scenario of this phase is another phase progress check that you will fly with a check instructor.

3. REFINING INSTRUCTIONAL SKILLS — In this phase, your ground study will include Communications and Radar Services, Radio Navigation, and the Fundamentals of Instructing (FOI). After completing the FOI Lab and the question review feature for FOI, you will be prepared to take the FOI knowledge test.

You will be involved with planning your in-flight scenarios as instructional flights and expanding lesson scenario development to include all maneuvers. You will also refine error analysis and correction for the simulated pilot in training performance. You will complete this phase with an end-of-stage progress check flown with another instructor.

4. DEMONSTRATING INSTRUCTIONAL COMPETANCE — Your knowledge study for this phase includes the Cross-Country Planning, Flight Operations and Advanced Ground Instructor Labs as well as concentrated sessions with your instructor in preparation for the practical test.

Your in-flight activities include demonstrating all maneuvers while simultaneously explaining how to fly them, introducing maneuvers to simulated pilots in training, correcting simulated errors, teaching maneuvers appropriate for risk surveillance and mitigation, and demonstrating active instructional level risk awareness, identification and mitigation. You will fly an end-of-course progress check with an appropriately designated instructor.

Since each phase builds on what you have learned before, it is important that you complete the phases in the proper sequence. However, some degree of flexibility is necessary.

- Weather and other factors may make it impractical to conduct a particular flight scenario while another may be possible.
- In this case your instructor, with the approval of the chief instructor, may suggest out-of-phase and out-of-stage scenarios that can be completed with the current conditions.
- If available at your flight school and approved for this course, you may complete all or portions of a flight scenario using an aviation training device, flight training device, or flight simulator.

IMPORTANT: The syllabus does not address your local Cessna Pilot Center's safety practices and procedures; review these key items before or after the first flight with your instructor.

PHASES

There are 4 phases of training. Each phase has

- *Required* **Web-based Knowledge Instruction**
- *Suggested* **Flight Scenarios**
- *Required* **Phase Ground Training Checklists**
- *Required* **Phase Proficiency Checklists**

Web-based Knowledge Instruction

- Forms the customer's knowledge foundation to be used for the flight scenarios
- Is directly correlated to the phase
- Is to be completed before the corresponding phase can be considered complete

Flight Scenarios

- Are placed in a suggested order of completion
- Can be flown
  - Once
  - More than once
  - Not at all
- Can be customized for your local training environment
- Can be completed out of phase or stage if approved by the Chief or Assistant Chief Instructor

Phase Ground Training Checklists

- Can be prepared for through study of the web-based curriculum and course library materials
    - Including FAA publications such as the *Aviation Instructor's Handbook*, *Pilot's Handbook of Aeronautical Knowledge* and *Airplane Flying Handbook*
    - Recorded as 'Instruction Given', 'Describe' or 'Explain'
        - 'Instruction Given' indicates that your instructor briefed you on the subject
        - 'Describe' indicates that you are able to describe the physical characteristics of the maneuver or knowledge area
        - 'Explain' indicates that you are able to describe the task or knowledge area and understand the underlying concepts, principles and procedures
    - Must be demonstrated to the 'Explain' level to complete the phase

Phase Proficiency Checklists

- Contain tasks that are to be completed to the 'Perform' level in order to complete the phase
- Contain single-pilot resource management that is to be completed to the 'Manage/Decide' level
    - Grading criteria is discussed in detail later in this document
- Contain completion standards for the phase

PROGRESSING THROUGH THE SYLLABUS

A phase is considered complete when all the tasks are completed to the 'Perform' or 'Manage/Decide' level as appropriate for the completions standards given on the Phase Proficiency Checklist.

It is recommended that the order of the suggested scenarios be followed.

- However, with the approval of your Chief or Assistant Chief Instructor you can complete scenarios that are out of the current phase
- This flexibility allows greater efficiency in course of flight training

You do not need to complete all scenarios in a phase in order to complete that particular phase. The scenarios are simply suggested flights to get you to the 'Perform' and 'Manage/Decide' level for the tasks and standards for that phase.

It is more common to repeat the scenarios in order to obtain the desired level of proficiency and safety than to skip them.

If you are able meet all of the phase standards and skip a scenario, you and your instructor must make sure that you meet the hourly training requirements applicable to your approved training course. It is possible you could finish the course meeting all the standards, but be deficient in the required minimum time and have to make it up at the end.

OVERALL SYSTEM USE

The Cessna Flight Instructor course is designed to provide the most benefit when

- The instructor assigns preparation for the next scenario
    - Web-based study
    - Suggested study materials
    - Scenario planning

- Prior to the next scenario, you
    - Study the assigned materials
    - Perform the necessary scenario planning

- Prior to the flight, the instructor
    - Prints your training package (or downloads it to a mobile device) including the
        - Phase Ground Training Checklist
        - Phase Proficiency Checklist
        - Scenario

- During the preflight briefing
    - Your instructor evaluates the applicable items on the Phase Ground Training Checklist
    - You ask any questions you have to clarify your understanding of the knowledge areas and the upcoming scenario
    - You brief the instructor on the scenario planning

- During the postflight briefing
    - You independently grade the applicable tasks on the Phase Proficiency Checklist
    - Your instructor independently grades the tasks on the Phase Proficiency Checklist
    - You then discuss the scenario outcome and compare grading
    - The instructor logs the scenario into the Course Tracking Application through a mobile device or a computer at your Cessna Pilot Center

FAA INDUSTRY TRAINING STANDARDS (FITS)

This flight training syllabus uses the concepts developed under the FAA Industry Training Standards (FITS) program. FITS incorporates three tenets

- Scenario-based training (SBT)
- Single-pilot resource management (SRM)
- Learner-centered grading (LCG)

Scenario-Based Training (SBT) uses real-world scenarios as the foundation of training. Flight maneuvers are still a vital part of flight training, but the use of real-world scenarios helps to develop a pilot's decision making skills. The training presents situations and circumstances that pilots face every day as learning experiences.

Single-Pilot Resource Management (SRM) includes the concepts of aeronautical decision making (ADM), risk management (RM), task management (TM), automation management (AM),

controlled flight into terrain (CFIT) awareness, and situational awareness (SA). SRM training helps the pilot to accurately assess and manage risk, thereby making logical and timely decisions.

Learner-Centered Grading (LCG) includes two parts: learner self assessment and a detailed debrief by the instructor. The purpose of the self assessment is to stimulate growth in the learner's thought processes and, in turn, behaviors. The self assessment is followed by an in-depth discussion between the instructor and the customer that compares the instructor's assessment to the customer's self assessment.

SCENARIO-BASED TRAINING

The scenario-based approach to training pilots emphasizes the development of critical thinking and flight management skills, rather than focusing solely on traditional maneuver-based skills. The goal of this training philosophy is the accelerated acquisition of higher-level decision making skills. Such skills are necessary to prevent pilot-induced accidents.

Scenario-based training goals include the development of

- Critical thinking skills
- Aeronautical decision making skills
- Situational awareness
- Pattern recognition (emergency procedures) and judgment skills
- Automation competence
- Planning and execution skills
- Procedural knowledge
- Psychomotor (hand-eye coordination) skills
- Risk management skills
- Task management skills
- Automation management skills
- Controlled flight into terrain (CFIT) awareness

For scenario-based training to be effective there must be a purpose for the flight and consequences if the flight is not completed as planned.

It is vital that you, the instructor in training, and your instructor communicate the following information well in advance of every training flight:

- Purpose of the flight
- Pressures to complete the flight (real or simulated)
- Risks/hazards associated with the scenario (real or simulated)
- Scenario destination(s)
- Desired outcomes
- Possible in-flight scenario changes or deviations (during later stages of the program)

With the guidance of your instructor, you should plan and fly the scenario as realistically as possible. This means that you will know where you are going and what will transpire during the flight. While the actual flight may deviate from the original plan, this method allows you to be placed in a realistic scenario.

SCENARIO PLANNING
Prior to the flight, you will be briefed on the scenario to be planned. You will plan the scenario; your instructor will help you the first few times. The flight scenario should include

- Simulated real-world reason to go flying
- Route
    - Destination(s)
    - Weather
    - NOTAMs
- Pressures to complete the flight (real or simulated)
- Risks associated with the scenario (real or simulated)
- Possible deviations

Reality is the ultimate learning situation, and scenario-based training attempts to get as close as possible to this ideal. The more realistic the training scenario, the better we learn

- Core safety habits, and
- Decision-making skills that can be applied in the real-world

SINGLE-PILOT RESOURCE MANAGEMENT (SRM)

Single-pilot resource management is defined as the art and science of managing all the resources (both onboard the aircraft and from outside sources) available to a pilot flying in a single-pilot operation (prior to and during flight) to ensure that the successful outcome of the flight is never in doubt.

SRM includes the concepts of

- Task management (TM)
- Automation management (AM)
- Risk management (RM)
- Aeronautical decision making (ADM)
- Situational awareness (SA)
- Controlled flight into terrain (CFIT) awareness

SRM training helps a pilot maintain situational awareness by

- Managing the technology in the aircraft as well as aircraft control and navigation tasks
- Enabling the pilot to accurately assess and manage risk while making accurate and timely decisions
- Helping pilots learn how to gather information, analyze it and make decisions

In most flight scenarios, there is no one correct answer. Pilots are expected to analyze each situation in light of their

- Experience level
- Personal minimums
- Current physical and mental condition
- Ability to make their own decisions as best as possible

Below are standards for each training concept of SRM:

Performance The training task is:	**Standards** You will:
Task management (TM)	Prioritize and select the most appropriate tasks (or series of tasks) to ensure successful completion of the training scenario.
Automation management (AM)	Program and utilize the most appropriate and useful modes of cockpit automation to ensure successful completion of the training scenario.
Risk management (RM)	Utilize risk management tools to assess and mitigate risk associated with the planned flight both during the preflight planning and in flight.
Aeronautical decision-making (ADM)	Consistently make informed decisions in a timely manner based on the task at hand and a thorough knowledge and use of all available resources.
Situational Awareness (SA)	Be aware of all factors such as traffic, weather, fuel state, aircraft mechanical condition, and pilot fatigue level that may have an impact on the successful completion of the training scenario.
Controlled Flight Into Terrain (CFIT) Awareness	Understand, describe, and apply techniques to avoid CFIT during inadvertent encounters with IMC during VFR flight, periods of reduced visibility, or at night.

LEARNER-CENTERED GRADING

Learner-centered grading includes two parts

- Learner self-assessment
- A detailed debrief by the instructor

The purpose of the self-assessment is to stimulate growth in the learner's thought processes and, in turn, behaviors. The self-assessment is followed by an in-depth discussion between you and your flight instructor that compares your self-assessment to the instructor's assessment.

Pre- and post-flight briefings are essential for setting goals. During events and tasks that require high levels of attention, there may be little time for learning as the bulk of your cognitive resources are given to performing the actual task.

INDEPENDENTLY GRADING THE SCENARIO

After the scenario is complete, you and your instructor should independently grade your performance for maneuvers and single-pilot resource management (SRM). Note that any grade that would not apply to the task has been grayed out in this syllabus.

It is very important that enough time is allowed. Simply assigning grades and signing logbooks within a limited period of time will not work with this grading system.

After independently evaluating the *actual scenario outcomes* compared to the *desired outcomes*

- You and your instructor come together to compare and discuss your individual evaluations during the postflight discussion

You and your instructor may disagree on the evaluations.

- This should be used as an opportunity to discuss the scenario further
- The instructor has the final authority in assigning the final grade for the desired outcomes

MANEUVER (TASK) GRADES

- **Describe** – At the completion of the ground training session, the pilot in training will be able to describe the physical characteristics of the task at a rote level.
- **Explain** – At the completion of the ground training session, the pilot in training will be able to describe the task and display an understanding of the underlying concepts, principles, and procedures.
- **Practice** – At the completion of the scenario, the pilot in training will be able to plan and execute the scenario. *Coaching, instruction, and/or assistance from the instructor will correct deviations and errors identified by the instructor.*
- **Perform** – At the completion of the scenario, the pilot in training will be able to perform the activity without assistance from the instructor. *Errors and deviations will be identified and corrected by the customer in an expeditious manner.* At no time will the successful completion of the activity be in doubt. ('Perform' will be used to signify that the pilot is satisfactorily demonstrating proficiency in traditional piloting and systems operation skills.)
- **Not Observed** – Any event not accomplished or required in the scenario.

Example:

- Once the pilot in training can explain the effect of crosswind and speed reduction on rudder effectiveness, they have achieved a level of learning that will allow for meaningful "Practice."
- The "Perform" level is met when the completion standards for the particular scenario or phase are met.

SINGLE-PILOT RESOURCE MANAGEMENT (SRM) GRADES

- **Explain** – At the completion of the ground training session, the pilot in training can verbally identify the risks inherent in the flight scenario.
- **Practice** – The pilot in training can identify, describe, and understand the risks inherent in the scenario. The customer may need to be prompted to identify risks and make decisions.
- **Manage/Decide** - The pilot in training can correctly gather the most important data available both within and outside the cockpit, identify possible courses of action, evaluate the risk inherent in each course of action, and make the appropriate decision. *Instructor intervention is not required for the safe completion of the flight.*
- **Not Observed** – Any event not accomplished or required in the scenario.

Example:

- A pilot who is becoming proficient at aeronautical decision making (ADM) and risk management (RM) would be graded first at the "Practice" level.
- The "Manage/Decide" level is met once a pilot makes decisions on their own, for instance, the decision to go-around without being prompted.

EVERYDAY USE OF FITS CONCEPTS

The PAVE Checklist
Use the PAVE Checklist as an easy way to implement the FITS concepts.

The PAVE checklist is

- A simple way to remember and examine the risk factors before you fly, and
- Can also help you manage the specific risks associated with taking off and landing

The PAVE checklist puts risk factors into four categories:

Pilot
Aircraft
en**V**ironment
External pressures

The pilot. Are you fatigued? When was the last time you were flying in the weather conditions that you will encounter? What are your personal minimums?

The aircraft. Are you familiar with the aircraft? Its avionics? Is it airworthy? What is the density altitude? How does that affect your climb rate? What is your maximum crosswind component?

The environment. Are the temperature and dew point close? Are you familiar with the area and its topography? Are there any NOTAMs?

External pressures. Are others influencing the flight? Do you have people waiting for you at the airport?

KNOWLEDGE CONTENT

WEB-BASED KNOWLEDGE INSTRUCTION

The web-based knowledge instruction should be completed before beginning the flight scenarios in each corresponding phase; you can work ahead as far in the course as you like at your discretion. However, the course is designed so that the web-based knowledge instruction corresponds to the flight scenarios within a phase.

If you have an extended time lapse between studying the web-based knowledge instruction and flying the companion scenario, you will find it very helpful to take some time to review your last knowledge sessions just before you fly the associated scenario.

You complete the web-based knowledge instruction satisfactorily by answering all the questions correctly. Your instructor will

- Review your results before you fly
- Answer any questions you may have

KNOWLEDGE TEST

Cessna's online Flight Instructor course includes a Question Review & Test Prep feature which

- Contains examples of FAA-style test questions for both the Fundamentals of Instructing (FOI) and the Flight Instructor Airplane (FIA) knowledge tests
- Provides the answers and explanations of the correct and incorrect answer choices
- Prepares you to take a CPC practice test and the FAA knowledge tests

Upon completing Phase 3, you will want to prepare for and take the FAA Fundamentals of Instructing (FOI) airman knowledge test and before taking your practical test, you will take the FAA Flight Instructor, Airplane (FIA) airman knowledge test. As a part of your preparation, your Cessna Pilot Center (CPC) will likely want you use the Question Review & Test Prep feature to take a practice test (CPC knowledge test) as a part of their course. The CPC test

- Has questions covering the required FAA knowledge areas
- Counts as your CPC final exam for the course.
- Is taken and proctored at your Cessna Pilot Center using the randomly generated exam feature of the Question Review in your course by selecting
    - Practice Exams
    - Randomly Generated Exam
    - Start New, and
    - If previous random exams taken, select OK to overwrite previous results

When you have completed all the questions in your CPC knowledge test

- Select "Finish / Suspend"
- Select "Finish", and then
- Your proctor will
    - Select View Exam Results
    - Print the Exam Results Summary, and
    - Select View Exam Detail and note any question not answered correctly

When you have finished the test, your instructor will

- Review the results with you, and
- Assign appropriate areas for review if necessary

After taking the CPC knowledge test, you should then take the FAA knowledge tests as soon as possible as the information will be fresh in your memory.

FLIGHT SCENARIOS

PREFLIGHT BRIEFING

Before each flight scenario you and your instructor will review the scenario objectives to make sure you both understand what you will be doing during the lesson.

- Use this opportunity to ask any questions
- Make sure you understand what is expected of you

- You will need a view-limiting device such as a hood or view-restricting glasses for a scenario having (IR—instrument reference) associated with any task

POST-FLIGHT DISCUSSION AND EVALUATION

After each flight, you and your instructor will

- Review your flight and evaluate your performance independently
- Compare and discuss your self-evaluation with his or her evaluation

Your instructor will make recommendations to help you in your learning. Make sure you ask questions about any area that is not clear.

You will then complete your flight training record based on the completion standards for the phase. Any tasks requiring additional practice to meet the phase completion standards will be carried over to the next flight scenario.

You may expect at least one-half hour for preflight and post-flight briefings for each scenario.

PROGRESS CHECKS

Progress checks are designed to ensure that you progress at the appropriate level of proficiency to move on to the next level. Normally, the Chief Instructor, Assistant Chief Instructor or an assigned instructor will fly with you.

Progress checks are nothing to get nervous about; they are there to ensure the completeness of your training. You will find that flying with another instructor often provides fresh insight and new techniques.

REQUIRED AERONAUTICAL KNOWLEDGE AREAS

The Federal Aviation Regulations 14 CFR Parts 61 and 141 specify aeronautical knowledge areas that must be covered in the ground training for a Flight Instructor Course. Also noted is reference to knowledge areas for Recreational, Private, and Commercial Pilot applicable to the aircraft category for which flight instructor privileges sought. All required areas are covered in this course, but they are distributed throughout the curriculum for subject continuity and logical development. You will find these required topics included in lessons listed as follows:

(1) Fundamentals of Instructing

PHASE 3; 3.3.1 The Learning Process
- Characteristics of Learning
- Principles of Learning
- Perceptions
- Insights
- Motivation
- Levels of Learning
- Domains of Learning

PHASE 3; 3.3.2 Physical Skills, Memory, and Transfer of Learning
- Learning Skills
- Memory
- Forgetting and Retention
- Transfer of Learning

PHASE 3; 3.3.3 Human Behavior
- Human Needs
- Defense Mechanisms
- The Instructor Role in Human Relations
- Effective Communication

PHASE 3; 3.3.4 The Teaching Process
- Teaching Steps
- Lesson Sequence
- Lecture
- Cooperative or Group Learning
- Guided Discussion
- Demonstration/Performance
- Computer Based Training

PHASE 3; 3.3.5 Critique, Evaluation and Instructional Aids
- The Instructor as a Critic
- Oral Quizzing
- Written Tests
- Performance Tests
- Instructional Aids

PHASE 3; 3.3.6 Flight Instructor Responsibilities
- Professionalism
- Helping Student Pilots Learn
- Endorsing a Student for Solo Flight
- The Flight Instructor as a Practical Psychologist

PHASE 3; 3.3.7 Flight Instruction and Planning Lessons
- Techniques of Flight Instruction
- Obstacles to Learning

Identifying Blocks of Learning
Lesson Plans

(2) Applicable Federal Aviation Regulations that relate to Recreational, Private, and Commercial Pilot Privileges, Flight Rules, and Accident and Incident Notification

PHASE 1; 1.4.1 Documents You Need in Flight
Pilot Documents
Aircraft Documents

PHASE 1; 1.4.2 Pilot Certificate Requirements and Limitations
Student Pilot Requirements and Limitations
Recreational Pilots
Private Pilots
Commercial Pilots
Flight Instructor Certificate Durations, Limitations and Responsibilities

PHASE 1; 1.4.3 FAA Knowledge and Practical Tests
Knowledge Tests
Practical Tests

PHASE 1; 1.4.4 Flight Requirements and Limitations
Recency, Tailwheel Endorsements and Flight Reviews
Pilot in Command Limitations
Commercial Flights and Turbine-Powered Airplanes

PHASE 1; 1.4.5 Aircraft Maintenance and Equipment
Maintenance Requirements
Minimum Equipment List

PHASE 1; 1.4.6 Rules to Fly By
Preflight Planning, Safety Belts and Oxygen
Minimum Safe Altitudes, Aerobatic Flight and Night Flying
Right of Way
VFR Cruising Altitudes
Speed Limits
Light Gun Signals
Transponders

PHASE 1; 1.4.7 Alcohol, Drugs, Emergencies and Notification Action
Alcohol and Drugs
Emergency Actions and ELTs
Accident and Incident Notification
Address Change Notification

PHASE 4; 4.3.1 Advanced Ground Instructor
V-Speeds and Terms
Regulations
Ground Instructor Privileges

(3) Basic aerodynamics and principles of flight

PHASE 1; 1.1.1 Lift and Stalls
Lift
Angle of Attack
Stalls and Spins

PHASE 1; 1.1.2 Forces on an Aircraft
Forces on an Aircraft
Drag
Climb Performance and Aircraft Axes

Propellers and Left Turning Tendency

PHASE 1; 1.1.3 Wing Design and High-Lift Devices
- Wing Shape
- High Lift Devices

PHASE 1; 1.1.4 Maneuverability, Controllability and Stability
- Maneuverability and Controllability
- Stability
- Center of Gravity
- Lateral Stability

PHASE 1; 1.1.5 Maneuvering Flight
- Turns and Forces in Turns
- Rate and Radius of Turns
- Load Factor
- Gear and Flap Configurations
- Maneuver Diagram
- Severe Turbulence

PHASE 1; 1.1.6 Airspeed Limitations, Vortices and Ground Effect
- Airspeed Limitations
- Wing Tip Vortices
- Ground Effect

PHASE 1; 1.1.7 Multiengine Operations
- Multiengine Operations

(4) Meteorology including critical weather situations, windshear recognition and avoidance, and the use of aeronautical weather reports and forecasts

PHASE 2; 2.3.1 The Atmosphere, Pressure Systems and Fronts
- Standard Atmosphere
- Pressure Systems and Wind
- Fronts
- Stability and Clouds

PHASE 2; 2.3.2 Clouds, Moisture and Stability
- Moisture
- Stability
- Unstable Air
- Stable Air
- Temperature Inversions

PHASE 2; 2.3.3 Weather Hazards
- Fog
- Ice and Freezing Rain
- Thunderstorms
- Microbursts
- Windshear
- Turbulence
- Mountain Wave

PHASE 2; 2.3.4 Current Weather
- Surface Aviation Weather Reports
- METAR Report Rules
- Automatic Surface Observations
- PIREPs

PHASE 2; 2.3.5 Forecasts
- Terminal Forecasts
- Area Forecasts
- Winds and Temperature Aloft

PHASE 2; 2.3.6 Weather Charts
- Constant Pressure Charts
- Surface Analysis Charts
- Weather Depiction Charts
- Low Level Prognostic Charts

PHASE 2; 2.3.7 Aids for Avoiding Hazardous Weather
- Weather Advisories
- Radar Weather Reports
- Severe Outlook Chart

(5) Safe and efficient operation of aircraft

PHASE 1; 1.1.6 Airspeed Limitations, Vortices and Ground Effect
- Airspeed Limitations
- Wing Tip Vortices
- Ground Effect

PHASE 4; 4.2.1 Preflight Planning
- Flight Plans
- Chart Supplement
- NOTAMs

PHASE 4; 4.2.5 Taxiing in the Wind and Collision Avoidance
- Taxiing in the Wind
- Avoiding Midairs
- Scanning for Traffic

PHASE 4; 4.2.6 Aeromedical Factors
- Hypoxia
- Oxygen
- Alcohol, Hyperventilation, and Scuba Diving
- Motion Sickness, Spatial Disorientation and Vision

PHASE 4; 4.2.7 Visual Glide Slopes, Airport Markings and Lighting
- 2 Bar and 3 Bar VASI
- PAPI and Tricolor VASI
- Airport Markings
- Airport Lighting
- Segmented Circle

(6) Weight and balance computations

PHASE 2; 2.4.1 Weight and Balance Principles and Calculation
- Weight and Balance Principles
- Locating the Center of Gravity
- Using Graphs to Determine Center of Gravity
- Finding New CG When Adding Weight
- Shifting Weight to Move the CG

(7) Use of performance charts

PHASE 2; 2.2.1 An Airplane's Performance Altitude
- Finding Pressure Altitude
- How Density Altitude Affects Performance

PHASE 2; 2.2.2 Calculating Performance
- Checking the Ground Roll
- Takeoff Distance to Clear an Obstacle
- Climb Performance
- Glide Distance
- Crosswind Component
- Landing Distance

(8) Significance and effects of exceeding aircraft performance limitations

PHASE 1; 1.1.5 Maneuvering Flight
- Turns and Forces in Turns
- Rate and Radius of Turns
- Load Factor
- Gear and Flap Configurations
- Maneuver Diagram
- Severe Turbulence

PHASE 1; 1.1.6 Airspeed Limitations
- Airspeed Limitations

(9) Use of aeronautical charts and a magnetic compass for pilotage and dead reckoning

PHASE 1; 1.2.1 Sectional Charts
- Latitude and Longitude
- Chart Details

PHASE 2; 2.1.2 Heading Indicator and Magnetic Compass
- Heading Indicator
- Turning Errors
- Acceleration and Deceleration Errors
- Deviation Errors

PHASE 4; 4.1.1 Preflight and Inflight Cross-Country Calculations
- Fuel Required and Range
- Wind Triangle, Course and Heading
- Ground Speed and Fuel Consumed
- Distance and Time to Climb
- Magnetic Heading and Ground Speeds
- Determining the Wind
- Distance Traveled and Indicated Airspeed
- Off-Course Correction and Diverting to an Alternate

(10) Use of air navigation facilities

PHASE 3; 3.1.1 Communications and Radar Services
- Transponder Codes, Traffic Advisories and Radio Failure

PHASE 3; 2.2.1 VOR Navigation
- VOR Orientation
- VORTAC/DME

PHASE 3; 2.2.2 Estimating Your Position and Checking Your VOR
- Off Course Indicators
- Time and Distance
- VOT

(11) Aeronautical decision making and judgment

PHASE 2; 2.6.2 Aeronautical Decision Making
- Managing the Pilot Risk Factor
- Hazardous Attitudes and Antidotes

PHASE 3; 3.3.3 Human Behavior
- Human Needs
- Defense Mechanisms
- The Instructor Role in Human Relations
- Effective Communication

(12) Principles and functions of aircraft systems

PHASE 2; 2.1.1 Pitot-Static Instruments
- Airspeed Errors
- Altimeter Errors
- True Airspeed and Altitudes

PHASE 2; 2.1.2 Heading Indicator and Magnetic Compass
- Heading Indicator
- Turning Errors
- Acceleration and Deceleration Errors
- Deviation Errors

PHASE 4; 4.2.2 Airplane Systems
- Fuel Systems
- Engines
- Propellers
- Constant Speed Propellers
- Engine Ignitions Systems
- Electrical Systems

PHASE 4; 4.2.3 Engine Operations
- Mixture
- Overheating
- Detonation and Pre-Ignition

PHASE 4; 4.2.4 Induction Icing and Cold Weather Operations
- Induction and Impact Icing
- Cold Weather Operations

(13) Maneuvers, procedures, and emergency operations appropriate to the aircraft

PHASE 2; 2.1.3 Instrument Flight
- Basic Instrument Maneuvers
- Unusual Attitudes

PHASE 2; 2.5.1 Steep Turns and Steep Spirals
- The Whats and Whys of Steep Turns
- Load Factor and You
- How to Do Great Steep Turns
- Performing Steep Spirals

PHASE 2; 2.5.2 Chandelles
- Introduction to the Chandelle
- How to Do Chandelles
- Techniques for a Perfect Chandelle

PHASE 2; 2.5.3 Lazy Eights
- Introduction to Lazy Eights
- How to Do Lazy Eights
- Techniques for Perfect Lazy Eights

PHASE 2; 2.5.4 Eight on Pylons
- Introduction to Eights on Pylons
- How to Do Eights on Pylons
- Techniques for Perfect Eights on Pylons

PHASE 2; 2.5.5 Power-off Approach
- How to do Power-Off 180° Accuracy Approaches and Landings

PHASE 2; 2.6.1 Teaching Aircraft Control
- The Basics of Aircraft Control

PHASE 2; 2.6.2 Aeronautical Decision Making
- Managing the Pilot Risk Factor
- Hazardous Attitudes and Antidotes

PHASE 2; 2.6.3 Teaching Flight Maneuvers
- Turns
- Takeoffs and Landings
- Rectangular Course
- Turns Around a Point
- S-Turns Across a Road
- Chandelles
- Lazy Eights
- Eights on Pylons

PHASE 4; 4.2.4 Induction Icing and Cold Weather Operations
- Induction and Impact Icing
- Cold Weather Operations

PHASE 4; 4.2.5 Taxiing in the Wind and Collision Avoidance
- Taxiing in the Wind

(14) Night and high-altitude operations

PHASE 2; 2.1.3 Instrument Flight
- Basic Instrument Maneuvers
- Unusual Attitudes

PHASE 2; 2.2.1 An Airplane's Performance Altitude
- Finding Pressure Altitude
- How Density Altitude Affects Performance

PHASE 4; 4.2.6 Aeromedical Factors
- Hypoxia
- Oxygen
- Alcohol, Hyperventilation, and Scuba Diving
- Motion Sickness, Spatial Disorientation and Vision

PHASE 4; 4.2.7 Visual Glide Slopes, Airport Markings and Lighting
- 2 Bar and 3 Bar VASI
- PAPI
- Airport Markings
- Airport Lighting
- Segmented Circle

(15) Descriptions of and procedures for operating within the National Airspace System

PHASE 1; 1.3.1 Airspace
- Airspace System and Class E Airspace
- Class D Airspace
- Class C Airspace
- Flying in and Around Class C Airspace
- Class B Airspace
- Flying in and Around Class B Airspace
- Class B Communications and Equipment
- Class A Airspace

PHASE 1; 1.3.2 Special Use Airspace
- Restricted and Warning Areas
- Alert Areas and MOA's

PHASE 1; 1.3.3 VFR Weather Minimums
- Visibility and Cloud Clearance
- Controlled Airspace
- Special VFR

PHASE 2; 2.2.4 Rules to Fly By
- Preflight Planning, Safety Belts and Oxygen
- Minimum Safe Altitudes, Aerobatic Flight and Night Flying
- Right of Way
- VFR Cruising Altitudes
- Speed Limits
- Light Gun Signals
- Transponders

PHASE 3; 3.1.1 Communications and Radar Services
- Non-Tower Airport Advisory, UNICOM
- ATIS, Radio Aids Box
- Transponder Codes, Traffic Advisories and Radio Failure

PHASE 4; 4.2.1 Preflight Planning
- Flight Plans
- Chart Supplement
- NOTAMs

CREDIT FOR PREVIOUS TRAINING (WHEN ENROLLING INTO PART 141 CURRICULUM)

According to FAR 141.77(c), when you transfer from one FAA-approved school to another approved school, course credits you earned in your previous course of training may be credited for part of your training by your new school.

- Your new school may determine the amount of credit you are allowed by a knowledge test and a flight proficiency test
- Credit for aeronautical knowledge instruction may be determined by a knowledge test alone
- Maximum credit allowed is 50% of the curriculum requirements of your new school

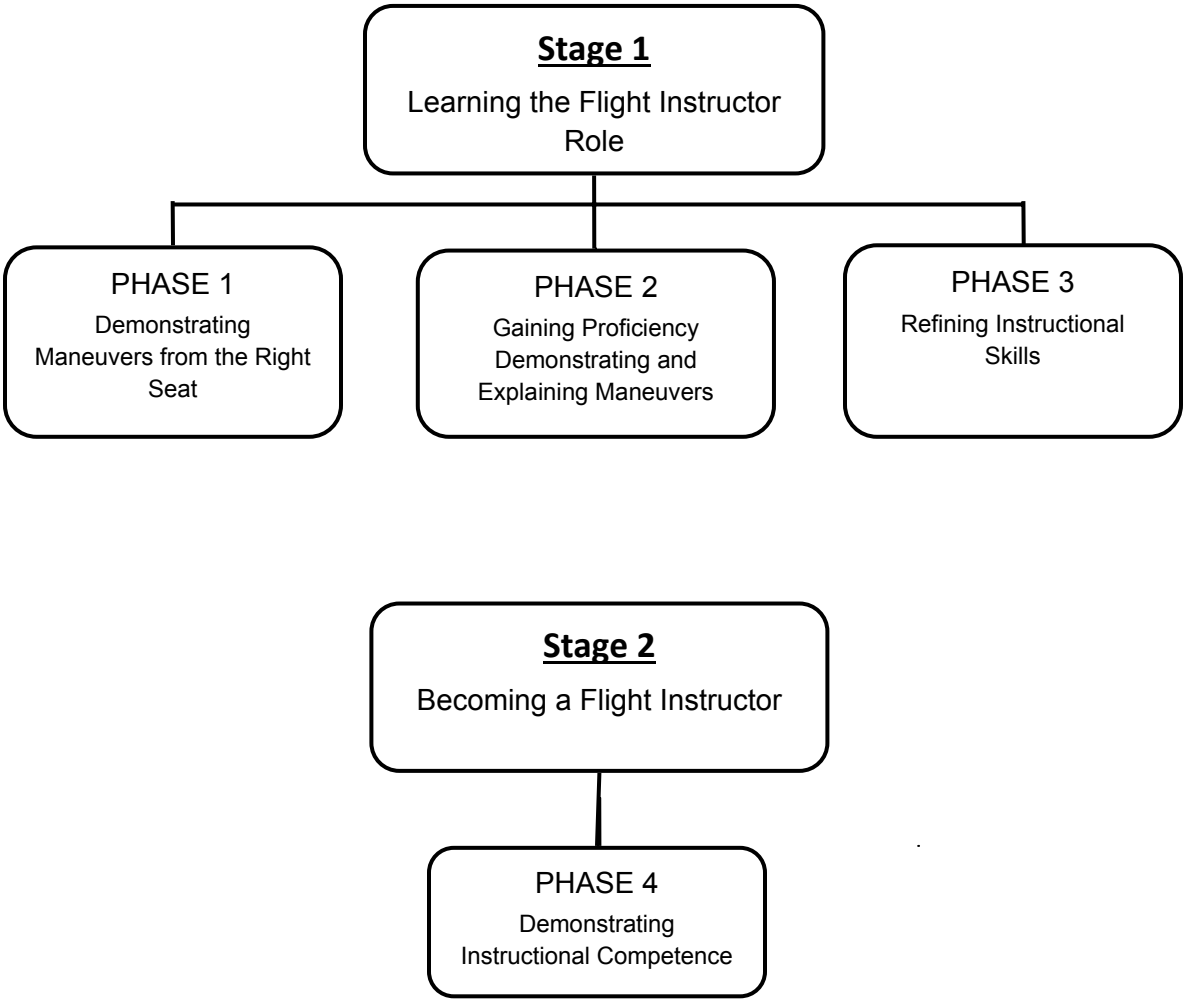
If you transfer from other than an FAA-approved school, you may receive credit for the knowledge and flight experience. Up to a maximum of 25% of the curriculum requirements of the course to which you are transferring to may be credited.

CREDIT FOR PREVIOUS TRAINING (WHEN ENROLLING INTO PART 61 CURRICULUM)
If you are enrolling into a Part 61 course, all flight training logged from an authorized instructor applies to the minimum required flight time under Part 61. Your new flight school

- Will evaluate your flight proficiency and knowledge in all required areas of operation and aeronautical knowledge
- Determine the appropriate starting point in the syllabus to continue your training

GUARANTEE OF QUALITY
This multimedia online pilot training system is available through Cessna Pilot Centers. It is structured so that you receive the highest quality pilot training at any Cessna Pilot Center located around the world.

SYLLABUS STRUCTURE



STAGE 1 – ***Learning the Flight Instructor Role*** (3P)
Stage Objectives:

a. Master flight control at instructor's cockpit position
b. Perform Private Pilot maneuvers to standards
c. Perform Commercial Pilot maneuvers to standards
d. Perform Flight Instructor demonstration stalls to standards
e. Integrate explanation of how a maneuver is performed while demonstrating it
f. Incorporate maneuvers into scenarios
g. Explain risks involved with each maneuver and describe methods of mitigating them
h. Complete Spin Task (14 CFR Pt 141 App F 5.(b)(1)&(2) or 14 CFR Pt 61.183(i)(1)
i. Complete FOI Ground lessons
j. Complete FOI test

PHASE 1 – ***Demonstrating Maneuvers from the Right Seat*** (6S)
Phase Objectives:

a. Introduce flight control from instructor's cockpit position
b. Introduce and demonstrate all tasks
c. Introduce explaining how to perform a maneuver while demonstrating it
d. Introduce analyzing and correcting common errors with basic maneuvers
e. Incorporate risk management considerations for each maneuver

Web-based KNOWLEDGE

AERODYNAMICS

SECTIONAL CHARTS

AIRSPACE AND WEATHER MINIMUMS

FEDERAL AVIATION REGULATIONS

1.1 AERODYNAMICS

Objectives: You will restudy the various principles of flight to make sure you have the knowledge necessary for instructing pilot trainees.

1.1.1 Lift and Stalls

Lift
Angle of Attack
Stalls and Spins

1.1.2 Forces on an Aircraft

Forces on an Aircraft
Drag
Climb Performance and Aircraft Axes
Propellers and Left Turning Tendency

1.1.3 Wing Design and High-Lift Devices

Wing Shape
High Lift Devices

1.1.4 Maneuverability, Controllability and Stability

Maneuverability and Controllability
Stability
Center of Gravity
Lateral Stability

1.1.5 Maneuvering Flight

Turns and Forces in Turns
Rate and Radius of Turns
Load Factor
Gear and Flap Configurations
Maneuver Diagram
Severe Turbulence

1.1.6 Airspeed Limitations, Vortices and Ground Effect

Airspeed Limitations
Wing Tip Vortices
Ground Effect

1.1.7 Multiengine Operations

Multiengine Operations

1.2 SECTIONAL CHARTS

Objective: You will review charting concepts to make sure you are prepared to instruct new pilots on latitude/longitude and interpreting chart details and symbols so they can relate them to topographical features and objects on the ground.

1.2.1 Sectional Charts

Latitude and Longitude
Chart Details

1.3 AIRSPACE AND WEATHER MINIMUMS

Objectives: You will go back into the details of the National Airspace system and the VFR minimum weather requirements to make sure you are prepared to teach this information and its nuances to new pilots.

1.3.1 Airspace

Airspace System and Class E Airspace
Class D Airspace
Class C Airspace
Flying in and Around Class C Airspace
Class B Airspace
Flying in and Around Class B Airspace
Class B Communications and Equipment
Class A Airspace

1.3.2 Special Use Airspace

Restricted and Warning Areas
Alert Areas and MOA's

1.3.3 VFR Weather Minimums

Visibility and Cloud Clearance
Controlled Airspace
Special VFR

1.4 FEDERAL AVIATION REGULATIONS

Objectives: You will delve into the regulations to the extent you will easily be able to interpret and explain them to the pilots you will train.

1.4.1 Documents You Need in Flight

Pilot Documents
Aircraft Documents

1.4.2 Pilot Certificate Requirements and Limitations

Student Pilot Requirements and Limitations
Recreational Pilots
Private Pilots
Commercial Pilots
Flight Instructor Certificate Durations, Limitations and Responsibilities

1.4.3 FAA Knowledge and Practical Tests

Knowledge Tests
Practical Tests

1.4.4 Flight Requirements and Limitations

Recency, Tailwheel Endorsements and Flight Reviews
Pilot in Command Limitations
Commercial Flights and Turbine-Powered Airplanes

1.4.5 Aircraft Maintenance and Equipment

Maintenance Requirements
Minimum Equipment List

1.4.6 Rules to Fly By

Preflight Planning, Safety Belts and Oxygen
Minimum Safe Altitudes, Aerobatic Flight and Night Flying
Right of Way
VFR Cruising Altitudes
Speed Limits
Light Gun Signals
Transponders

1.4.7 Alcohol, Drugs, Emergencies and Notification Action

Alcohol and Drugs
Emergency Actions and ELTs
Accident and Incident Notification
Address Change Notification

Scenario 1 – Learning Control from the Other Seat (1-1)

Objective:

Introduce performing flight tasks from instructor's control position
Identify task elements that may be difficult to perform from the instructor's control position
Introduce demonstrating basic maneuvers while simultaneously explaining how to perform the maneuver

Purpose/pressures (real or simulated):

Obtaining Flight Instructor Certificate
Aviation Employment

Where to go:

Training area

How to get there:

Pilotage, DR, Electronic Navigation

Planned deviations:

None

Planned malfunctions:

As specified by tasks

Risks (real or simulated):

Note unfamiliar visual sight picture
Maintain heightened awareness that flight/engine controls are in different hands
Observe parallax or obscured flight/engine instruments

Preflight Discussion

New this scenario:

Preflight Inspection
Cockpit Management
Engine Starting
Taxiing
Airport, Runway and Taxiway Signs, Markings, and Lighting
Before Takeoff Check
Radio Communications and ATC Light Signals
Traffic Patterns
Normal and Crosswind Takeoff and Climb
Normal and Crosswind Approach and Landing
Go-Around/Rejected Landing
Straight-and-Level Flight
Level Turns
Straight Climbs and Climbing Turns
Straight Descents and Descending Turns
Steep Turns
Maneuvering During Slow Flight
Power-On Stalls (Proficiency)
Power-Off Stalls (Proficiency)
Spin Awareness
Postflight Procedures

Postflight Discussion

Scenario 2 – Gaining Experience Flying from Instructor's Seat (1-2)

Objective:

Gain confidence in performing flight tasks from instructor's control position
Add more Private Pilot maneuvers
Meet/exceed Private Pilot standards
Expand skill demonstrating/explaining basic maneuvers

Purpose/pressures (real or simulated):

Obtaining Flight Instructor Certificate
Aviation Employment

Where to go:

Training area

How to get there:

Pilotage, DR, Electronic Navigation

Planned deviations:

None

Planned malfunctions:

As specified by tasks

Risks (real or simulated):

Identify risks inherent while instructing each maneuver and appropriate mitigation
Teach risks involved with phase of flight/maneuver and appropriate mitigation

Preflight Discussion

New this scenario:

Short-Field Takeoff and Maximum Performance Climb
Short-Field Approach and Landing
Slip to a Landing
Turns Around a Point
S-Turns across a Road
Systems and Equipment Malfunctions

Improving your skills:

*Preflight Inspection
*Cockpit Management
*Engine Starting
*Taxiing
*Before Takeoff Check
^Radio Communications and ATC Light Signals
^Traffic Patterns
*Airport, Runway and Taxiway Signs, Markings, and Lighting
Go-Around/Rejected Landing
#Straight-and-Level Flight
#Level Turns
#Straight Climbs and Climbing Turns
#Straight Descents and Descending Turns
Steep Turns
Maneuvering During Slow Flight
Power-On Stalls (Proficiency)
Power-Off Stalls (Proficiency)
Spin Awareness
*Postflight Procedures

Postflight Discussion

Note: The remaining scenarios will detail the following representing essential tasks that will be assessed but not individually listed with each scenario:

Pre-takeoff/After Landing Ground Operations encompassing tasks noted with *
Airport Operations encompassing tasks noted with ^
Fundamentals of Flight encompassing tasks noted with #

Scenario 3 –Demonstrating and Explaining Private Pilot Maneuvers (1-3)
Objective:
Complete all Visual-Reference Private Pilot Maneuvers
Meet/exceed standards with Private Pilot level maneuvers
Provide insightful explanations of each maneuver while demonstrating them
Purpose/pressures (real or simulated):
Obtaining Flight Instructor Certificate
Aviation Employment
Where to go:
Training area
How to get there:
Pilotage, DR, Electronic Navigation
Planned deviations:
None
Planned malfunctions:
As specified by tasks
Risks (real or simulated):
Identify risks involved with the new tasks and describe mitigation techniques
Identify areas for loss of collision avoidance awareness while instructing

Preflight Discussion

New this scenario:
Soft-Field Takeoff and Climb
Soft-Field Approach and Landing
Rectangular Course
Emergency Descent
Emergency Approach and Landing (Simulated)
Emergency Equipment and Survival Gear

Improving your skills:
Pre-takeoff/After Landing Ground Operations *(Scenario 2, 7 tasks *)*
Airport Operations *(Scenario 2, 2 tasks ^)*
Fundamentals of Flight *(Scenario 2, 4 tasks #)*
Short-Field Takeoff and Maximum Performance Climb
Short-Field Approach and Landing
Go-Around/Rejected Landing
Slip to a Landing
S-Turns across a Road
Steep Turns
Maneuvering During Slow Flight
Power-On Stalls (Proficiency)
Power-Off Stalls (Proficiency)
Spin Awareness

Postflight Discussion

Scenario 4 – Improving Instructional Skill and Risk Management (1-4)

Objective:

Introduce Private Pilot Instrument Reference Maneuvers
Meet/exceed standards with *Improving your skills* maneuvers
Introduce Commercial Pilot level maneuvers
Introduce simulated common errors on *Improving your skills* maneuvers
Refine ability to explain how to do a maneuver while demonstrating it

Purpose/pressures (real or simulated):

Obtaining Flight Instructor Certificate
Aviation Employment

Where to go:

Training area

How to get there:

Pilotage, DR, Electronic Navigation

Planned deviations:

None

Planned malfunctions:

As specified by tasks

Risks (real or simulated):

Identify risks involved with the new tasks and describe mitigation techniques
Identify areas for loss of collision avoidance awareness while instructing
Identify risk areas for loss of situational awareness while instructing
Teach risks involved with phase of flight/maneuver and appropriate mitigation

Preflight Discussion

New this scenario:

Straight-and-Level Flight (IR)
Constant Airspeed Climbs (IR)
Constant Airspeed Descents (IR)
Turns to Headings (IR)
Recovery from Unusual Flight Attitudes (IR)
Power-Off 180° Accuracy Approach and Landing
Secondary Stalls (Demonstration)
Accelerated Maneuver Stalls (Demonstration)
Chandelles

Improving your skills:

Pre-takeoff/After Landing Ground Operations *(Scenario 1-2 *)*
Airport Operations *(Scenario 1-2 ^)*
Fundamentals of Flight *(Scenario 1-2 #)*
Soft-Field Takeoff and Climb
Soft-Field Approach and Landing
Systems and Equipment Malfunctions
Turns Around a Point
Maneuvering During Slow Flight
Spin Awareness
Emergency Descent
Emergency Approach and Landing (Simulated)

Postflight Discussion

Scenario 5 – Building Flight and Instructional Skills (1-5)

Objective:

Introduce steep spirals
Sharpen techniques flying and explaining the *Improving your skills* maneuvers
Detect and correct simulated common errors on *Improving your skills* maneuvers

Purpose/pressures (real or simulated):

Obtaining Flight Instructor Certificate
Aviation Employment

Where to go:

Training area

How to get there:

Pilotage, DR, Electronic Navigation

Planned deviations:

None

Planned malfunctions:

As specified by tasks

Risks (real or simulated):

Identify risks involved with the new tasks and describe mitigation techniques
Identify areas for loss of collision avoidance awareness while instructing
Identify risk areas for loss of situational awareness while instructing
Teach risks involved with phase of flight/maneuver and appropriate mitigation

Preflight Discussion

New this scenario:

Steep Spirals

Improving your skills:

Pre-takeoff/After Landing Ground Operations *(Scenario 1-2 *)*
Airport Operations *(Scenario 1-2 ^)*
Fundamentals of Flight *(Scenario 1-2 #)*
Straight-and-Level Flight (IR)
Constant Airspeed Climbs (IR)
Constant Airspeed Descents (IR)
Turns to Headings (IR)
Recovery from Unusual Flight Attitudes (IR)
Power-Off 180° Accuracy Approach and Landing
Secondary Stalls (Demonstration)
Accelerated Maneuver Stalls (Demonstration)
Spin Awareness
Chandelles
Normal and Crosswind Takeoff and Climb
Normal and Crosswind Approach and Landing
Emergency Approach and Landing (Simulated)

Postflight Discussion

Phase 1 Ground Training Checklist

*All items to be graded independently by the instructor and customer, then discussed and a final grade assessed. *Desired outcome for all tasks by the end of the phase is "Explain"*	Instruction Given	Describe	Explain
Aerodynamic stalls			
Spins			
Propeller effects and left-turning tendency			
Flaps			
Center of Gravity and stability			
Load factor			
Wingtip vortices and avoiding wake turbulence			
Chart topographical features and airport symbols			
Identifying and requirements to fly in different classes of airspace			
VFR weather minimums			
Pilot and aircraft documents			
Pilot in command requirements			
Aircraft maintenance requirements			
Altitudes: minimum and cruising			
Alcohol and drug limitations			

Phase 1 Proficiency Checklist

*****All items to be graded independently by the instructor and customer, then discussed and a final grade assessed. *Desired outcome for all tasks by the end of the phase is "Perform" or "Manage/Decide"*	Practice	Perform	Manage / Decide
Single-pilot resource management			
Risk management *Identifies risks both preflight and in-flight, evaluates options and chooses actions to mitigate the risks*			
Task management *Prioritizes and selects most appropriate tasks for phase of flight*			
Situational Awareness *Identifies potential SA risks; understands and uses cockpit tools available to enhance SA*			
Pre-takeoff ground operations			
Preflight inspection *Performs preflight inspection using the checklist to confirm that all steps have been completed*			
Cockpit management *Briefs cockpit safety equipment and establishes and maintains an efficient and organized cockpit*			
Engine starting *Notes airplane position, uses checklist and safety procedures considers other persons/property*			
Taxiing *Runway incursion procedures records taxi instructions, airport diagram, full attention to taxiing*			
Airport, runway and taxiway signs, markings, and lighting *Understands and complies with airport signs, markings and lighting*			
Before takeoff check *Uses checklist for preflight, starting, run-up and all phases of flight*			

Phase 1 Proficiency Checklist *continued*

Airport operations			
Radio communications and ATC light signals *Uses correct procedures and terminology and correctly interprets simulated light signals*			
Traffic patterns *Appropriate entry/exit procedures, pattern flown, altitudes, configuration and airspeeds*			
In-flight operations			
Takeoffs, landings and go-arounds			
Normal and crosswind takeoff and climb *Checks configuration, lights, instruments, wind and power before TO, cross checks instruments in climb, V_Y ±5 kt*			
Short-field takeoff and maximum performance climb *Checks configuration, lights, instruments, wind and power before TO, short-field liftoff, cross checks instruments in climb, V_X ±5 kt until obstacle cleared*			
Soft-field takeoff and climb *Checks configuration, lights, instruments, wind and power before TO, soft-field liftoff, cross checks instruments in climb, V_X or V_Y ±5 kt*			
Normal and crosswind approach and landing *Stabilized approach, A/S ±5 kt, smooth roundout and touchdown, maintains X-W correction*			
Short-field approach and landing *Stabilized approach, A/S ±5 kt, smooth roundout and touchdown within specified area, maintains X-W correction*			
Soft-field approach and landing *Stabilized approach, A/S ±5 kt, smooth roundout and soft-field touchdown procedures, maintains X-W correction*			
Slip to a landing *Considers X-W, stabilized slip, precise ground track, smooth, timely transition to touchdown*			
Go-Around/Rejected Landing *Makes timely decision, climb power and pitch for V_X/V_Y, ±5 kt, flaps & gear up as appropriate*			
Power-off 180° accuracy approach and landing *Identifies key points, corrects for wind, coordinated, stabilized approach, lands specified area*			
Fundamentals of flight			
Straight-and-Level Flight *Smooth, coordinated, effective use of flight controls, heading ±5°, altitude ±50 ft*			
Level Turns *Smooth, coordinated, effective use of flight controls, altitude ±50 ft, rollout on heading ±5°*			
Straight Climbs and Climbing Turns *Smooth, coordinated, effective use of flight controls, leveloff ±50 ft, rollout/maintain heading ±5°*			
Straight Descents and Descending Turns *Smooth, coordinated, effective use of flight controls, leveloff ±50 ft, rollout/maintain heading ±5°*			
Performance maneuvers			
Steep Turns *Smooth, coordinated, flight controls, bank ±5°, altitude ±50 ft, rollout/maintain heading ±10°*			
Steep Spirals *Coordinated controls, proper airspeed, power setting, constant radius around selected point*			
Chandelles *Proper entry airspeed, power setting, coordinated, max performance*			
Ground reference maneuvers			
Turns around a point *Suitable altitude, airspeed, reference point, corrects for wind, alt ±100 ft, aware emergency options*			
S-turns across a road *Suitable altitude, airspeed, reference line, corrects for wind, alt ±100 ft, aware emergency options*			
Rectangular course *Suitable altitude, airspeed, reference lines, corrects for wind, alt ±100 ft, aware emergency options*			

Phase 1 Proficiency Checklist *continued*

Slow flight, stalls and spins			
Maneuvering During Slow Flight *Entry alt so completed ≥ 1,500 ft AGL, Alt ±50 ft, Hdg ±10°, bank ±5° (if turn), A/S + 5/-0 kt*			
Power-On Stalls (Proficiency) *Entry alt so recovery ≥ 1,500 ft AGL, Hdg ±10°, bank ±5° (if turn), appropriate flap and gear up*			
Power-Off Stalls (Proficiency) *Entry alt so recovery ≥ 1,500 ft AGL, Hdg ±10°, bank ±5° (if turn), appropriate flap and gear dn*			
Secondary stalls (demonstration) *Entry alt so recovery ≥ 1,500 ft AGL, Hdg, appropriate flap and gear, improper stall recovery*			
Spin Awareness *Aerodynamic factors, flight situations, recovery procedures from unintentional spin*			
Accelerated maneuver stalls (demonstration) *Entry alt so recovery ≥ 3,000 ft AGL, A/S > V_A, 20 kt > V_{S1}, 45° bank*			
Basic instrument maneuvers			
Straight-and-level flight (IR) *Coordinated controls trimmed, Alt ±100 ft, Hdg ±10°*			
Constant airspeed climbs (IR) *Coordinated controls trimmed, Hdg ±10°, A/S ±5 kt, level off Alt ±50 ft*			
Constant airspeed descents (IR) *Coordinated controls trimmed, Hdg ±10°, A/S±5 kt, level off Alt ±50 ft*			
Turns to headings (IR) *Maintains Hdg ±5°, Alt ±50 ft*			
Recovery from unusual flight attitudes (IR) *Applies correct recovery control inputs using only instrument reference*			
Emergency operations			
Systems and equipment malfunctions *Uses recommended procedures while maintaining control*			
Emergency descent *Sets configuration, A/S ±10 kt, maintains +0/-10 kt, levels off ±100 ft*			
Emergency approach and landing (simulated) *Analyzes situation, best glide ±10 kt, sets up for selects suitable landing area*			
Emergency equipment and survival gear *When, where, and how to use*			
After landing ground operations			
Post-landing taxi and parking *Safely exits runway, uses runway incursion avoidance procedures, safe movement in parking area*			
Postflight procedures *Secures aircraft and completes appropriate checklists and postflight inspection*			

Phase 1 completion standards:

You have completed Phase 1 when you

- Review your home study results with your instructor
- Show ability to confidently control the aircraft from the instructor's seat
- Describe maneuver elements while demonstrating them
- Start analyzing maneuver errors and correcting simulated by the instructor
- Describe the risks of each maneuver and mitigation strategies
- Achieve a grade of "Perform" or "Manage/Decide" on all Phase Proficiency Checklist tasks
- Complete the Phase 1 Progress Check

INSTRUCTOR NOTES:

Scenario 6 – Adding the Remaining Maneuvers and Phase Check (1-6)

Objective:

Introduce Lazy Eights, Eights on Pylons, Cross-Controlled Stalls and Elevator Trim Stalls
Expand Spin Awareness discussion in relation to *New this scenario* stall tasks
Continue developing technique with flying and explaining the *Improving your skills* maneuvers
Detect and correct simulated common errors on *Improving your skills* maneuvers

Purpose/pressures (real or simulated):

Obtaining Flight Instructor Certificate
Aviation Employment

Where to go:

Training area

How to get there:

Pilotage, DR, Electronic Navigation

Planned deviations:

None

Planned malfunctions:

As specified by tasks

Risks (real or simulated):

Identify risks involved with the new tasks and describe mitigation techniques
Identify areas for loss of collision avoidance awareness while instructing
Identify risk areas for loss of situational awareness while instructing
Teach risks involved with phase of flight/maneuver and appropriate mitigation

Preflight Discussion

New this scenario:

Lazy Eights
Eights on Pylons
Cross-controlled Stalls (Demonstration)
Elevator Trim Stalls (Demonstration)

Improving your skills:

Pre-takeoff/After Landing Ground Operations *(Scenario 1-2 *)*
Airport Operations *(Scenario 1-2 ^)*
Fundamentals of Flight *(Scenario 1-2 #)*
Power-On Stalls (Proficiency)
Spin Awareness
Steep Spirals
Chandelles
Soft-Field Takeoff and Climb
Soft-Field Approach and Landing
Systems and Equipment Malfunctions
Emergency Descent
Emergency Approach and Landing (Simulated)

Postflight Discussion

Phase 1 **Progress Check**

*All items to be graded independently by the instructor and customer, then discussed and a final grade assessed. *Desired outcome for all tasks by the end of the phase is "Perform" or "Manage/Decide"*	Practice	Perform	Manage / Decide
Single-pilot resource management			
Risk management *Identifies risks both preflight and in-flight, evaluates options and chooses actions to mitigate the risks*			
Task management *Prioritizes and selects most appropriate tasks for phase of flight*			
Situational Awareness *Identifies potential SA risks; understands and uses cockpit tools available to enhance SA*			
Pre-takeoff ground operations			
Preflight inspection *Performs preflight inspection using the checklist to confirm that all steps have been completed*			
Cockpit management *Briefs cockpit safety equipment and establishes and maintains an efficient and organized cockpit*			
Engine starting *Notes airplane position, uses checklist and safety procedures considers other persons/property*			
Taxiing *Runway incursion procedures record taxi instructions, airport diagram, full attention to taxiing*			
Airport, runway and taxiway signs, markings, and lighting *Understands and complies with airport signs, markings and lighting*			
Before takeoff check *Uses checklist for preflight, starting, run-up and all phases of flight*			
Airport operations			
Radio communications and ATC light signals *Uses correct procedures and terminology and correctly interprets simulated light signals*			
Traffic patterns *Appropriate entry/exit procedures, pattern flown, altitudes, configuration and airspeeds*			
In-flight operations			
Takeoffs, landings and go-arounds			
Soft-field takeoff and climb *Checks configuration, lights, instruments, wind and power before TO, soft-field liftoff, cross checks instruments in climb, V_X or V_Y ±5 kt*			
Soft-field approach and landing *Stabilized approach, A/S ± 5 kt, smooth roundout and soft-field touchdown procedures, maintains X-W correction*			
Fundamentals of flight			
Straight-and-Level Flight *Smooth, coordinated, effective use of flight controls, heading ±5°, altitude ±50 ft*			
Level Turns *Smooth, coordinated, effective use of flight controls, altitude ±50 ft, rollout on heading ±5°*			
Straight Climbs and Climbing Turns *Smooth, coordinated, effective use of flight controls, level off ±50 ft, rollout/maintain heading ±5°*			
Straight Descents and Descending Turns *Smooth, coordinated, effective use of flight controls, level off ±50 ft, rollout/maintain heading ±5°*			

Phase 1 **Progress Check* continued*

Performance maneuvers			
Steep Spirals *Coordinated controls, proper airspeed, power setting, constant radius around selected point*			
Chandelles *Proper entry airspeed, power setting, coordinated, max performance*			
Lazy eights *~30° max bank, constant change pitch and roll, ±100 ft, ±10 kt, ±10° heading*			
Ground reference maneuvers			
Eights on pylons *Suitable pylons, pivotal altitude, entry max bank 30°-40°, corrects to maintain line of sight, coord.*			
Slow flight, stalls and spins			
Power-On Stalls (Proficiency) *Entry alt so recovery ≥ 1,500 ft AGL, Hdg ±10°, bank ±10° (if turn), appropriate flap and gear up*			
Cross-controlled stalls (demonstration) *Entry alt so recovery ≥ 3,000 ft AGL*			
Elevator trim stalls (demonstration) *Entry alt so recovery ≥ 1,500 ft AGL, trimmed for approach glide, landing configuration, full power, allowing to pitch up to stall*			
Spin Awareness *Aerodynamic factors, flight situations, recovery procedures from unintentional spin*			
Emergency operations			
Systems and equipment malfunctions *Uses recommended procedures while maintaining control*			
Emergency descent *Sets configuration, A/S ±10 kt, maintains +0/-10 kt, levels off ±100 ft*			
Emergency approach and landing (simulated) *Analyzes situation, best glide ±10 kt, sets up for selects suitable landing area*			
After landing ground operations			
Post-landing taxi and parking *Safely exits runway, uses runway incursion avoidance procedures, safe movement in parking area*			
Postflight procedures *Secures aircraft and completes appropriate checklists and postflight inspection*			

PHASE 2 – ***Gaining Proficiency Demonstrating and Explaining Maneuvers*** (3S)
Phase Objectives:

a. Demonstrate all maneuvers to standards
b. Simultaneously explain all maneuvers while performing them
c. Introduce using scenarios for maneuvers
d. Introduce analyzing and correcting common errors with advanced maneuvers

Web-based KNOWLEDGE

FLIGHT INSTRUMENTS

AIRCRAFT PERFORMANCE

WEATHER

WEIGHT AND BALANCE

COMMERCIAL MANEUVERS

TEACHING MANEUVERS

2.1 FLIGHT INSTRUMENTS

Objectives: You will reacquaint yourself with the details, operating concepts and anomalies of the flight instruments. You will also review aircraft control by instrument reference and recovery from unusual flight attitudes.

2.1.1 Pitot-Static Instruments

Airspeed Errors
Altimeter Errors
True Airspeed and Altitudes

2.1.2 Heading Indicator and Magnetic Compass

Heading Indicator
Turning Errors
Acceleration and Deceleration Errors
Deviation Errors

2.1.3 Instrument Flight

Basic Instrument Maneuvers
Unusual Attitudes

2.2 AIRCRAFT PERFORMANCE

Objectives: You will review aircraft performance factors and calculations to set the instructional foundation for these topics.

2.2.1 An Airplane's Performance Altitude

Finding Pressure Altitude
How Density Altitude Affects Performance

2.2.2 Calculating Performance

Checking the Ground Roll
Takeoff Distance to Clear an Obstacle
Climb Performance
Glide Distance
Crosswind Component
Landing Distance

2.3 WEATHER

Objectives: You will delve into weather theory, hazards, products, and tools in order to reach the knowledge level necessary for preparing new pilots to successfully manage environmental risks.

2.3.1 The Atmosphere, Pressure Systems and Fronts

Standard Atmosphere
Pressure Systems and Wind
Fronts
Stability and Clouds

2.3.2 Clouds, Moisture and Stability

Moisture
Stability
Unstable Air
Stable Air
Temperature Inversions

2.3.3 Weather Hazards

Fog
Ice and Freezing Rain
Thunderstorms
Microbursts
Windshear
Turbulence
Mountain Wave

2.3.4 Current Weather

Surface Aviation Weather Reports
METAR Report Rules
Automatic Surface Observations
PIREPs

2.3.5 Forecasts

Terminal Forecasts
Area Forecasts
Winds and Temperatures Aloft

2.3.6 Weather Charts

Constant Pressure Charts
Surface Analysis Charts
Weather Depiction Charts
Low Level Prognostic Charts

2.3.7 Aids for Avoiding Hazardous Weather

Weather Advisories
Radar Weather Reports
Severe Outlook Chart

2.4 WEIGHT AND BALANCE

Objectives: You will review weight and balance principles and gain exercise doing loading calculations to enable effective instruction for new pilots.

2.4.1 Weight and Balance Principles and Calculation

Weight and Balance Principles
Locating the Center of Gravity
Using Graphs to Determine Center of Gravity
Finding New CG When Adding Weight
Shifting Weight to Move the CG

2.5 COMMERCIAL MANEUVERS

Objectives: You will review the techniques and standards for several maneuvers tested on the Commercial Pilot practical test.

2.5.1 Steep Turns and Steep Spirals

The Whats and Whys of Steep Turns
Load Factor and You
How to Do Great Steep Turns
Performing Steep Spirals

2.5.2 Chandelles

Introduction to the Chandelle
How to Do Chandelles
Techniques for a Perfect Chandelle

2.5.3 Lazy Eights

Introduction to Lazy Eights
How to Do Lazy Eights
Techniques for Perfect Lazy Eights

2.5.4 Eights on Pylons

Introduction to Eights On Pylons
How to Do Eights On Pylons
Techniques for Perfect Eights On Pylons

2.5.5 Power-off Approach

How to do Power-Off 180° Accuracy Approaches and Landings

2.6 TEACHING MANEUVERS

Objectives: You will learn instructional concepts and techniques for various flight maneuvers and review the information on Aeronautical Decision Making.

2.6.1 Teaching Aircraft Control

The Basics of Aircraft Control

2.6.2 Aeronautical Decision Making

Managing the Pilot Risk Factor
Hazardous Attitudes and Antidotes

2.6.3 Teaching Flight Maneuvers

Turns
Takeoffs and Landings
Rectangular Course
Turns Around a Point
S-Turns Across a Road
Chandelles
Lazy Eights
Eights on Pylons

Scenario 1 – Refining Commercial Pilot Maneuvers and Stalls (2-1)

Objective:

Meet defined skill standards with each task
Polish skill demonstrating and explaining task maneuvers
Refine ability to detect and correct simulated maneuver common errors
Develop simple scenarios to incorporate listed tasks and identify associated risks

Purpose/pressures (real or simulated):

Obtaining Flight Instructor Certificate
Aviation Employment

Where to go:

Training area

How to get there:

Pilotage, DR, Electronic Navigation

Planned deviations:

None

Planned malfunctions:

As specified by tasks

Risks (real or simulated):

Teach risks involved with phase of flight/maneuver and appropriate mitigation
Identify areas for loss of collision avoidance awareness while instructing
Identify risk areas for loss of situational awareness while instructing

Preflight Discussion

Improving your skills:

Pre-takeoff/After Landing Ground Operations *(Scenario 1-2 *)*
Airport Operations *(Scenario 1-2 ^)*
Fundamentals of Flight *(Scenario 1-2 #)*
Lazy Eights
Eights on Pylons
Power-On Stalls (Proficiency)
Cross-controlled Stalls (Demonstration)
Elevator Trim Stalls (Demonstration)
Spin Awareness
Slip to a Landing
Short-Field Takeoff and Maximum Performance Climb
Short-Field Approach and Landing
Go-Around/Rejected Landing
Power-Off 180° Accuracy Approach and Landing

Postflight Discussion

Scenario 2 – Sharpening Short/Soft Field Ops and Ground Reference Maneuvers (2-2)
Objective:
Meet defined skill standards with each task
Polish skill demonstrating and explaining task maneuvers
Refine ability to detect and correct simulated maneuver common errors
Develop simple scenarios to incorporate listed tasks and identify associated risks
Purpose/pressures (real or simulated):
Obtaining Flight Instructor Certificate
Aviation Employment
Where to go:
Training area
How to get there:
Pilotage, DR, Electronic Navigation
Planned deviations:
None
Planned malfunctions:
As specified by tasks
Risks (real or simulated):
Teach risks involved with phase of flight/maneuver and appropriate mitigation
Identify areas for loss of collision avoidance awareness while instructing
Identify risk areas for loss of situational awareness while instructing

Preflight Discussion

Improving your skills:
Pre-takeoff/After Landing Ground Operations *(Scenario 1-2 *)*
Airport Operations *(Scenario 1-2 ^)*
Fundamentals of Flight *(Scenario 1-2 #)*
Short-Field Takeoff and Maximum Performance Climb
Short-Field Approach and Landing
Soft-Field Takeoff and Climb
Soft-Field Approach and Landing
Go-Around/Rejected Landing
Slip to a Landing
Power-Off 180° Accuracy Approach and Landing
Steep Turns
Rectangular Course
S-Turns across a Road
Turns Around a Point
Eights on Pylons
Emergency Approach and Landing (Simulated)
Emergency Descent

Postflight Discussion

Scenario 3 – Building Confidence Demonstrating Commercial Maneuvers (2-3)
Scenario Objectives:
Meet defined skill standards with each task
Polish skill demonstrating and explaining task maneuvers
Continue detecting and correcting simulated maneuver common errors
Continue developing appropriate scenarios for maneuvers
Purpose/pressures (real or simulated):
Obtaining Flight Instructor Certificate
Aviation Employment
Where to go:
Training area
How to get there:
Pilotage, DR, Electronic Navigation
Planned deviations:
None
Planned malfunctions:
As specified by tasks
Risks (real or simulated):
Teach risks involved with phase of flight/maneuver and appropriate mitigation techniques
Identify enhanced risk areas due to the instructional environment
Develop mitigation strategies for enhanced risk due to the instructional environment

Preflight Discussion

Improving your skills:
Pre-takeoff/After Landing Ground Operations *(Scenario 1-2 *)*
Airport Operations *(Scenario 1-2 ^)*
Fundamentals of Flight *(Scenario 1-2 #)*
Short-Field Takeoff and Maximum Performance Climb
Short-Field Approach and Landing
Power-Off 180° Accuracy Approach and Landing
Steep Spirals
Chandelles
Lazy Eights
Eights on Pylons
Power-On Stalls (Proficiency)
Power-Off Stalls (Proficiency)
Accelerated Maneuver Stalls (Demonstration)
Spin Awareness
Emergency Equipment and Survival Gear

Postflight Discussion

Phase 2 Ground Training Checklist

*All items to be graded independently by the instructor and customer, then discussed and a final grade assessed. *Desired outcome for all tasks by the end of the phase is "Explain"*	Instruction Given	Describe	Explain
Pitot-static instrument operation/errors			
True/indicated airspeed and altitude			
Heading indicator and compass			
Weather systems and hazards			
Weather products			
Aircraft performance			
Weight and balance			
Fundamental maneuvers			
Takeoffs and landings			
Ground reference maneuvers			
Performance maneuvers			
Control using the flight instruments			

Phase 2 Proficiency Checklist

*All items to be graded independently by the instructor and customer, then discussed and a final grade assessed. *Desired outcome for all tasks by the end of the phase is "Perform" or "Manage/Decide"*	Practice	Perform	Manage / Decide
Single-pilot resource management			
Risk management *Identifies risks both preflight and in-flight, evaluates options and chooses actions to mitigate the risks*			
Situational Awareness *Identifies potential SA risks; understands and uses cockpit tools available to enhance SA*			
Task management *Prioritizes and selects most appropriate tasks for phase of flight*			
Controlled flight into terrain awareness (CFIT) *Identifies those areas of an instructional flight with elevated CFIT risk*			
Pre-takeoff Ground Operations			
Preflight inspection *Performs preflight inspection using the checklist to confirm that all steps have been completed*			
Cockpit management *Briefs cockpit safety equipment and establishes and maintains an efficient and organized cockpit*			
Engine starting *Notes airplane position, uses checklist and safety procedures considers other persons/property*			
Taxiing *Runway incursion procedures record taxi instructions, airport diagram, full attention to taxiing*			
Airport, runway and taxiway signs, markings, and lighting *Understands and complies with airport signs, markings and lighting*			
Before takeoff check *Uses checklist for preflight, starting, run-up and all phases of flight*			

Phase 2 Proficiency Checklist *continued*

Airport operations			
Radio communications and ATC light signals *Uses correct procedures and terminology and correctly interprets simulated light signals*			
Traffic patterns *Appropriate entry/exit procedures, pattern flown, altitudes, configuration and airspeeds*			
In-flight operations			
Takeoffs, landings and go-arounds			
Short-field takeoff and maximum performance climb *PTS Standards*			
Soft-field takeoff and climb *PTS Standards*			
Short-field approach and landing *PTS Standards*			
Soft-field approach and landing *PTS Standards*			
Slip to a landing *PTS Standards*			
Go-Around/Rejected Landing *PTS Standards*			
Power-off 180° accuracy approach and landing *PTS Standards*			
Fundamentals of flight			
Straight-and-Level Flight *Smooth, coordinated, effective use of flight controls, heading ±5°, altitude ±50 ft*			
Level Turns *Smooth, coordinated, effective use of flight controls, altitude ±50 ft, rollout on heading ±5°*			
Straight Climbs and Climbing Turns *Smooth, coordinated, effective use of flight controls, level off ±50 ft, rollout/maintain heading ±5°*			
Straight Descents and Descending Turns *Smooth, coordinated, effective use of flight controls, level off ±50 ft, rollout/maintain heading ±5°*			
Performance maneuvers			
Steep Turns *PTS Standards*			
Steep Spirals *PTS Standards*			
Chandelles *PTS Standards*			
Lazy eights *PTS Standards*			
Ground reference maneuvers			
Turns around a point *PTS Standards*			
S-turns across a road *PTS Standards*			
Rectangular course *PTS Standards*			
Eights on pylons *PTS Standards*			

Phase 2 Proficiency Checklist *continued*

Slow flight, stalls and spins			
Power-On Stalls (Proficiency) *PTS Standards*			
Power-Off Stalls (Proficiency) *PTS Standards*			
Cross-controlled stalls (demonstration) *PTS Standards*			
Elevator trim stalls (demonstration) *PTS Standards*			
Spin Awareness *PTS Standards*			
Accelerated maneuver stalls (demonstration) *PTS Standards*			
Emergency operations			
Emergency descent *PTS Standards*			
Emergency approach and landing (simulated) *PTS Standards*			
Emergency equipment and survival gear *PTS Standards*			
After landing ground operations			
Post-landing taxi and parking *Safely exits runway, uses runway incursion avoidance procedures, safe movement in parking area*			
Postflight procedures *Secures aircraft and completes appropriate checklists and postflight inspection*			

Phase 2 completion standards:

You have completed Phase 2 when you

- Review your home study results with your instructor
- Demonstrate all maneuvers to standards
- Begin using scenarios to incorporate maneuvers
- Simultaneously explain each maneuver while demonstrating it
- Start analyzing and correcting errors with advanced maneuvers
- Continue assessing the risks of each maneuver and developing mitigation strategies
- Achieve a grade of “Perform” or “Manage/Decide” on all Phase Proficiency Checklist tasks
- Complete the Phase 2 Progress Check

INSTRUCTOR NOTES:

Scenario 4 – Demonstrating/Explaining Maneuvers and Phase Check (2-4)
Scenario Objectives:
Meet defined skill standards with each task
Explain each task maneuver while demonstrating it
Evaluate simulated student maneuver performance correcting simulated errors
Use scenarios effectively
Purpose/pressures (real or simulated):
Obtaining Flight Instructor Certificate
Aviation Employment
Where to go:
Training area
How to get there:
Pilotage, DR, Electronic Navigation
Planned deviations:
None
Planned malfunctions:
As specified by tasks
Risks (real or simulated):
Teach risks involved with phase of flight/maneuver and appropriate mitigation techniques
Identify enhanced risk areas due to the instructional environment
Employ mitigation strategies for enhanced risk due to the instructional environment

Preflight Discussion

Improving your skills:
Pre-takeoff/After Landing Ground Operations *(Scenario 1-2 *)*
Airport Operations *(Scenario 1-2 ^)*
Fundamentals of Flight *(Scenario 1-2 #)*
Short-Field Takeoff and Maximum Performance Climb
Short-Field Approach and Landing
Soft-Field Takeoff and Climb
Soft-Field Approach and Landing
Slip to a Landing
Go-Around/Rejected Landing
Power-Off 180° Accuracy Approach and Landing
Steep Spirals
Chandelles
Lazy Eights
S-Turns Across a Road
Eights on Pylons
Cross-controlled Stalls (Demonstration)
Elevator Trim Stalls (Demonstration)
Secondary Stalls (Demonstration)
Accelerated Maneuver Stalls (Demonstration)
Spin Awareness
Emergency Approach and Landing (Simulated)
Systems and Equipment Malfunctions
Emergency Descent

Postflight Discussion

Phase 2 **Progress Check**

*All items to be graded independently by the instructor and customer, then discussed and a final grade assessed. *Desired outcome for all tasks by the end of the phase is "Perform" or "Manage/Decide"*	Practice	Perform	Manage / Decide
Single-pilot resource management			
Risk management *Identifies risks both preflight and in-flight, evaluates options and chooses actions to mitigate the risks*			
Situational Awareness *Identifies potential SA risks; understands and uses cockpit tools available to enhance SA*			
Task management *Prioritizes and selects most appropriate tasks for phase of flight*			
Controlled flight into terrain awareness (CFIT) *Identifies those areas of an instructional flight with elevated CFIT risk*			
Pre-takeoff Ground Operations			
Preflight inspection *Performs preflight inspection using the checklist to confirm that all steps have been completed*			
Cockpit management *Briefs cockpit safety equipment and establishes and maintains an efficient and organized cockpit*			
Engine starting *Notes airplane position, uses checklist and safety procedures considers other persons/property*			
Taxiing *Runway incursion procedures record taxi instructions, airport diagram, full attention to taxiing*			
Airport, runway and taxiway signs, markings, and lighting *Understands and complies with airport signs, markings and lighting*			
Before takeoff check *Uses checklist for preflight, starting, run-up and all phases of flight*			
Airport operations			
Radio communications and ATC light signals *Uses correct procedures and terminology and correctly interprets simulated light signals*			
Traffic patterns *Appropriate entry/exit procedures, pattern flown, altitudes, configuration and airspeeds*			
In-flight operations			
Takeoffs, landings and go-arounds			
Short-field takeoff and maximum performance climb *Checks configuration, lights, instruments, wind and power before TO, short-field liftoff, cross checks instruments in climb, V_X ±5 kt until obstacle cleared*			
Soft-field takeoff and climb *Checks configuration, lights, instruments, wind and power before TO, soft-field liftoff, cross checks instruments in climb, V_X or V_Y ±5 kt*			
Short-field approach and landing *Stabilized approach, A/S ±5 kt, smooth roundout and touchdown within specified area, maintains X-W correction*			
Soft-field approach and landing *Stabilized approach, A/S ±5 kt, smooth roundout and soft-field touchdown procedures, maintains X-W correction*			
Slip to a landing *Considers X-W, stabilized slip, precise ground track, smooth, timely transition to touchdown*			
Go-Around/Rejected Landing *Makes timely decision, climb power and pitch for V_X/V_Y, A/S ±5 kt, flaps & gear up as appropriate*			

Phase 2 **Progress Check* continued*

Power-off 180° accuracy approach and landing *Identifies key points, corrects for wind, coordinated, stabilized approach, lands specified area*			
Fundamentals of flight			
Straight-and-Level Flight *Smooth, coordinated, effective use of flight controls, heading ±5°, altitude ±50 ft*			
Level Turns *Smooth, coordinated, effective use of flight controls, altitude ±50 ft, rollout on heading ±5°*			
Straight Climbs and Climbing Turns *Smooth, coordinated, effective use of flight controls, level off ±50 ft, rollout/maintain heading ±5°*			
Straight Descents and Descending Turns *Smooth, coordinated, effective use of flight controls, level off ±50 ft, rollout/maintain heading ±5°*			
Performance maneuvers			
Steep Spirals *Coordinated controls, proper airspeed, power setting, constant radius around selected point*			
Chandelles *Proper entry airspeed, power setting, coordinated, max performance*			
Lazy eights *~30° max bank, constant change pitch and roll, ±100 ft, ±10 kt, ±10° heading*			
Ground reference maneuvers			
S-turns across a road *Suitable altitude, airspeed, reference line, corrects for wind, alt ±100 ft, aware emergency options*			
Eights on pylons *Suitable pylons, pivotal altitude, entry max bank 30°-40°, corrects to maintain line of sight, coord.*			
Slow flight, stalls and spins			
Cross-controlled stalls (demonstration) *Entry alt so recovery ≥ 3,000 ft AGL*			
Elevator trim stalls (demonstration) *Entry alt so recovery ≥ 1,500 ft AGL, trimmed for approach glide, landing configuration, full power, allowing to pitch up to stall*			
Secondary stalls (demonstration) *Entry alt so recovery ≥ 1,500 ft AGL, Hdg, appropriate flap and gear, improper stall recovery*			
Spin Awareness *Aerodynamic factors, flight situations, recovery procedures from unintentional spin*			
Accelerated maneuver stalls (demonstration) *Entry alt so recovery ≥ 3,000 ft AGL, A/S > V_A, 20 kt > V_{S1}, 45° bank*			
Emergency operations			
Systems and equipment malfunctions *Uses recommended procedures while maintaining control*			
Emergency descent *Sets configuration, A/S ±10 kt, maintains +0/-10 kt, levels off ±100 ft*			
Emergency approach and landing (simulated) *Analyzes situation, best glide ±10 kt, sets up for selects suitable landing area*			
After landing ground operations			
Post-landing taxi and parking *Safely exits runway, uses runway incursion avoidance procedures, safe movement in parking area*			
Postflight procedures *Secures aircraft and completes appropriate checklists and postflight inspection*			

PHASE 3 – ***Refining Instructional Skills*** (3S)
Phase Objectives:

a. Introduce planning instructional flight
b. Expand scenario development for all maneuvers
c. Refine maneuver error analysis and correction

Web-based KNOWLEDGE

COMMUNICATIONS AND RADAR SERVICES

RADIO NAVIGATION

FUNDAMENTALS OF INSTRUCTING

3.1 COMMUNICATIONS AND RADAR SERVICES

Objective: You will review communications concepts and techniques necessary to teach safe and effective operations around airports and in the National Airspace System.

3.1.1 Communications and Radar Services

Non-Tower Airport Advisory, UNICOM
ATIS, Radio Aids Box
Transponder Codes, Traffic Advisories and Radio Failure

3.2 RADIO NAVIGATION

Objective: You will review the basics of ground based VOR systems, testing accuracy and estimating your position.

3.2.1 VOR Navigation

VOR Orientation
VORTAC/DME

3.2.2 Estimating Your Position and Checking Your VOR

Off Course Indicators
Time and Distance
VOT

3.3 FUNDAMENTALS OF INSTRUCTING

Objective: You will learn the concepts of human behavior, effective communication, the learning process, assessing performance, and risk management essential for effective teaching and responsible flight instruction.

3.3.1 The Learning Process

Characteristics of Learning
Principles of Learning
Perceptions
Insights
Motivation
Levels of Learning
Domains of Learning

3.3.2 Physical Skills, Memory, and Transfer of Learning

Learning Skills
Memory
Forgetting and Retention
Transfer of Learning

3.3.3 Human Behavior

Human Needs
Defense Mechanisms
The Instructor Role in Human Relations
Effective Communication

3.3.4 The Teaching Process

Teaching Steps
Lesson Sequence
Lecture
Cooperative or Group Learning
Guided Discussion
Demonstration/Performance
Computer Based Training

3.3.5 Critique, Evaluation and Instructional Aids

The Instructor As a Critic
Oral Quizzing
Written Tests
Performance Tests
Instructional Aids

3.3.6 Flight Instructor Responsibilities

Professionalism
Helping Student Pilots Learn
Endorsing a Student for Solo Flight
The Flight Instructor as a Practical Psychologist

3.3.7 Flight Instruction and Planning Lessons

Techniques of Flight Instruction
Obstacles to Learning
Identifying Blocks of Learning
Lesson Plans

Scenario 1 Delivering a Private Pilot Flight Lesson (3-1)
Objective:
Plan an instructional flight covering the assigned tasks
Introduce some maneuvers as new to the pilot being trained
Evaluate simulated student performance and correct errors on maneuvers previously introduced
Purpose/pressures (real or simulated):
Obtaining Flight Instructor Certificate
Aviation Employment
Where to go:
Training area
How to get there:
Pilotage, DR, Electronic Navigation
Planned deviations:
None
Planned malfunctions:
As specified by tasks
Risks (real or simulated):
Incorporate scenarios to encourage student risk analysis and mitigation strategies
Demonstrate pilot-in-command level risk management of training scenario

Preflight Discussion

Improving your skills:
Pre-takeoff/After Landing Ground Operations *(Scenario 1-2 *)*
Airport Operations *(Scenario 1-2 ^)*
Fundamentals of Flight *(Scenario 1-2 #)*
Normal and Crosswind Takeoff and Climb
Normal and Crosswind Approach and Landing
Slip to a Landing
Go-Around/Rejected Landing
Steep Turns
Rectangular Course
S-Turns across a Road
Turns Around a Point
Maneuvering During Slow Flight
Power-On Stalls (Proficiency)
Power-Off Stalls (Proficiency)
Straight-and-Level Flight (IR)
Constant Airspeed Climbs (IR)
Constant Airspeed Descents (IR)
Turns to Headings (IR)
Recovery from Unusual Flight Attitudes (IR)
Emergency Approach and Landing (Simulated)
Systems and Equipment Malfunctions
Emergency Descent

Postflight Discussion

Scenario 2 – Delivering a Commercial Pilot Flight Lesson (3-2)

Objective:

Plan an instructional flight covering the assigned tasks
Introduce some maneuvers as new to the pilot being trained
Evaluate simulated student performance and correct errors on maneuvers previously introduced

Purpose/pressures (real or simulated):

Obtaining Flight Instructor Certificate
Aviation Employment

Where to go:

Training area

How to get there:

Pilotage, DR, Electronic Navigation

Planned deviations:

None

Planned malfunctions:

As specified by tasks

Risks (real or simulated):

Incorporate scenarios to encourage student risk analysis and mitigation strategies
Demonstrate pilot-in-command level risk management of training scenario

Preflight Discussion

Improving your skills:

Pre-takeoff/After Landing Ground Operations *(Scenario 1-2 *)*
Airport Operations *(Scenario 1-2 ^)*
Fundamentals of Flight *(Scenario 1-2 #)*
Short-Field Takeoff and Maximum Performance Climb
Short-Field Approach and Landing
Soft-Field Takeoff and Climb
Soft-Field Approach and Landing
Power-Off 180° Accuracy Approach and Landing
Steep Spirals
Chandelles
Lazy Eights
Eights on Pylons
Maneuvering During Slow Flight
Power-On Stalls (Proficiency)
Power-Off Stalls (Proficiency)
Accelerated Maneuver Stalls (Demonstration)
Emergency Approach and Landing (Simulated)
Systems and Equipment Malfunctions
Emergency Equipment and Survival Gear
Emergency Descent

Postflight Discussion

Phase 3 Ground Training Checklist

*All items to be graded independently by the instructor and customer, then discussed and a final grade assessed. *Desired outcome for all tasks by the end of the phase is "Explain"*	Instruction Given	Describe	Explain
Non-tower airport communications			
Radar services/transponder codes			
Radio failure			
VOR use			
Learning process			
Memory, transfer of learning			
Human behavior			
Teaching process			
Evaluation and assessment			
CFI responsibilities			
Techniques of flight instruction			
Lesson planning			

Phase 3 Proficiency Checklist

*All items to be graded independently by the instructor and customer, then discussed and a final grade assessed. *Desired outcome for all tasks by the end of the phase is "Perform" or "Manage/Decide"*	Practice	Perform	Manage / Decide
Single-pilot resource management			
Risk management *Identifies risks both preflight and in-flight, evaluates options and chooses actions to mitigate the risks*			
Situational Awareness *Identifies potential SA risks; understands and uses cockpit tools available to enhance SA*			
Task management *Prioritizes and selects most appropriate tasks for phase of flight*			
Controlled flight into terrain awareness (CFIT) *Identifies those areas of an instructional flight with elevated CFIT risk*			
Pre-takeoff Ground Operations			
Preflight inspection *Performs preflight inspection using the checklist to confirm that all steps have been completed*			
Cockpit management *Briefs cockpit safety equipment and establishes and maintains an efficient and organized cockpit*			
Engine starting *Notes airplane position, uses checklist and safety procedures considers other persons/property*			
Taxiing *Runway incursion procedures record taxi instructions, airport diagram, full attention to taxiing*			
Airport, runway and taxiway signs, markings, and lighting *Understands and complies with airport signs, markings and lighting*			
Before takeoff check *Uses checklist for preflight, starting, run-up and all phases of flight*			

Phase 3 Proficiency Checklist *continued*

Airport operations			
Radio communications and ATC light signals *Uses correct procedures and terminology and correctly interprets simulated light signals*			
Traffic patterns *Appropriate entry/exit procedures, pattern flown, altitudes, configuration and airspeeds*			
In-flight operations			
Takeoffs, landings and go-arounds			
Normal and crosswind takeoff and climb *PTS Standards*			
Short-field takeoff and maximum performance climb *PTS Standards*			
Soft-field takeoff and climb *PTS Standards*			
Normal and crosswind approach and landing *PTS Standards*			
Short-field approach and landing *PTS Standards*			
Soft-field approach and landing *PTS Standards*			
Slip to a landing *PTS Standards*			
Go-Around/Rejected Landing *PTS Standards*			
Power-off 180° accuracy approach and landing *PTS Standards*			
Fundamentals of flight			
Straight-and-Level Flight *Smooth, coordinated, effective use of flight controls, heading ±5°, altitude ±50 ft*			
Level Turns *Smooth, coordinated, effective use of flight controls, altitude ±50 ft, rollout on heading ±5°*			
Straight Climbs and Climbing Turns *Smooth, coordinated, effective use of flight controls, level off ±50 ft, rollout/maintain heading ±5°*			
Straight Descents and Descending Turns *Smooth, coordinated, effective use of flight controls, level off ±50 ft, rollout/maintain heading ±5°*			
Performance maneuvers			
Steep Turns *PTS Standards*			
Steep Spirals *PTS Standards*			
Chandelles *PTS Standards*			
Lazy eights *PTS Standards*			
Ground reference maneuvers			
Turns around a point *PTS Standards*			
S-turns across a road *PTS Standards*			
Rectangular course *PTS Standards*			
Eights on pylons *PTS Standards*			

Phase 3 Proficiency Checklist *continued*

Slow flight, stalls and spins			
Maneuvering During Slow Flight *PTS Standards*			
Power-On Stalls (Proficiency) *PTS Standards*			
Power-Off Stalls (Proficiency) *PTS Standards*			
Accelerated maneuver stalls (demonstration) *PTS Standards*			
Basic instrument maneuvers			
Straight-and-level flight (IR) *PTS Standards*			
Constant airspeed climbs (IR) *PTS Standards*			
Constant airspeed descents (IR) *PTS Standards*			
Turns to headings (IR) *PTS Standards*			
Recovery from unusual flight attitudes (IR) *PTS Standards*			
Emergency operations			
Systems and equipment malfunctions *PTS Standards*			
Emergency descent *PTS Standards*			
Emergency approach and landing (simulated) *PTS Standards*			
Emergency equipment and survival gear *PTS Standards*			
After landing ground operations			
Post-landing taxi and parking *Safely exits runway, uses runway incursion avoidance procedures, safe movement in parking area*			
Postflight procedures *Secures aircraft and completes appropriate checklists and postflight inspection*			

Phase 3 completion standards:

You have completed Phase 3 when you

- Review your home study results with your instructor
- Demonstrate all maneuvers to standards
- Demonstrate planning a primary level instructional flight
- Develop scenarios to incorporate all maneuvers in this phase
- Demonstrate detection of common maneuver errors and provide corrective instruction
- Achieve a grade of “Perform” or “Manage/Decide” on all Phase Proficiency Checklist tasks
- Complete the Phase 3 Progress Check

INSTRUCTOR NOTES:

Scenario 3 – Delivering an Advanced Pilot Flight Lesson and Phase/Stage Check (3-3)

Objective:

Plan an instructional flight covering the assigned tasks
Introduce some maneuvers as new to the pilot being trained
Evaluate simulated student performance and correct errors on maneuvers previously introduced
Conduct Phase/Stage progress check

Purpose/pressures (real or simulated):

Obtaining Flight Instructor Certificate
Aviation Employment

Where to go:

Training area

How to get there:

Pilotage, DR, Electronic Navigation

Planned deviations:

None

Planned malfunctions:

As specified by tasks

Risks (real or simulated):

Incorporate scenarios to encourage student risk analysis and mitigation strategies
Demonstrate pilot-in-command level risk management of training scenario

Preflight Discussion

Improving your skills:

Pre-takeoff/After Landing Ground Operations *(Scenario 1-2 *)*
Airport Operations *(Scenario 1-2 ^)*
Fundamentals of Flight *(Scenario 1-2 #)*
Normal and Crosswind Takeoff and Climb
Normal and Crosswind Approach and Landing
Go-Around/Rejected Landing
Power-Off 180° Accuracy Approach and Landing
Lazy Eights
Eights on Pylons
Maneuvering During Slow Flight
Power-On Stalls (Proficiency)
Power-Off Stalls (Proficiency)
Cross-controlled Stalls (Demonstration)
Elevator Trim Stalls (Demonstration)
Secondary Stalls (Demonstration)
Accelerated Maneuver Stalls (Demonstration)
Emergency Approach and Landing (Simulated)
Systems and Equipment Malfunctions
Emergency Equipment and Survival Gear
Emergency Descent

Postflight Discussion

Phase 3 **Progress Check**

*All items to be graded independently by the instructor and customer, then discussed and a final grade assessed. *Desired outcome for all tasks by the end of the phase is "Perform" or "Manage/Decide"*	Practice	Perform	Manage / Decide
Single-pilot resource management			
Risk management *Identifies risks both preflight and in-flight, evaluates options and chooses actions to mitigate the risks*			
Situational Awareness *Identifies potential SA risks; understands and uses cockpit tools available to enhance SA*			
Task management *Prioritizes and selects most appropriate tasks for phase of flight*			
Controlled flight into terrain awareness (CFIT) *Identifies those areas of an instructional flight with elevated CFIT risk*			
Pre-takeoff Ground Operations			
Preflight inspection *Performs preflight inspection using the checklist to confirm that all steps have been completed*			
Cockpit management *Briefs cockpit safety equipment and establishes and maintains an efficient and organized cockpit*			
Engine starting *Notes airplane position, uses checklist and safety procedures considers other persons/property*			
Taxiing *Runway incursion procedures record taxi instructions, airport diagram, full attention to taxiing*			
Airport, runway and taxiway signs, markings, and lighting *Understands and complies with airport signs, markings and lighting*			
Before takeoff check *Uses checklist for preflight, starting, run-up and all phases of flight*			
Airport operations			
Radio communications and ATC light signals *Uses correct procedures and terminology and correctly interprets simulated light signals*			
Traffic patterns *Appropriate entry/exit procedures, pattern flown, altitudes, configuration and airspeeds*			
In-flight operations			
Takeoffs, landings and go-arounds			
Normal and crosswind takeoff and climb *PTS Standards*			
Normal and crosswind approach and landing *PTS Standards*			
Go-Around/Rejected Landing *PTS Standards*			
Power-off 180° accuracy approach and landing *PTS Standards*			
Fundamentals of flight			
Straight-and-Level Flight *Smooth, coordinated, effective use of flight controls, heading ±5°, altitude ±50 ft*			
Level Turns *Smooth, coordinated, effective use of flight controls, altitude ±50 ft, rollout on heading ±5°*			
Straight Climbs and Climbing Turns *Smooth, coordinated, effective use of flight controls, level off ±50 ft, rollout/maintain heading ±5°*			
Straight Descents and Descending Turns *Smooth, coordinated, effective use of flight controls, level off ±50 ft, rollout/maintain heading ±5°*			

Phase 3 **Progress Check*continued*

Performance maneuvers			
Lazy eights *PTS Standards*			
Ground reference maneuvers			
Eights on pylons *PTS Standards*			
Slow flight, stalls and spins			
Maneuvering During Slow Flight *PTS Standards*			
Power-On Stalls (Proficiency) *PTS Standards*			
Power-Off Stalls (Proficiency) *PTS Standards*			
Cross-controlled stalls (demonstration) *PTS Standards*			
Elevator trim stalls (demonstration) *PTS Standards*			
Secondary stalls (demonstration) *PTS Standards*			
Accelerated maneuver stalls (demonstration) *PTS Standards*			
Emergency operations			
Systems and equipment malfunctions *PTS Standards*			
Emergency descent *PTS Standards*			
Emergency approach and landing (simulated) *PTS Standards*			
Emergency equipment and survival gear *PTS Standards*			
After landing ground operations			
Post-landing taxi and parking *Safely exits runway, uses runway incursion avoidance procedures, safe movement in parking area*			
Postflight procedures *Secures aircraft and completes appropriate checklists and postflight inspection*			

STAGE 2 – ***Becoming a Flight Instructor*** (1P)

Stage Objectives:

a. Perform all flight tasks exceeding minimum skill standards
b. Demonstrate instructional knowledge of each task
c. Simultaneously explain each maneuver while demonstrating it
d. Demonstrate instructional knowledge of risk management considerations of each task
e. Identify and manage instructional risks involved with each task
f. Demonstrate instructional knowledge of common errors of each maneuver
g. Analyze and correct simulated errors when teaching maneuvers
h. Incorporate scenarios when teaching maneuvers
i. Complete all Knowledge Lessons
j. Complete FIA test

PHASE 4 – ***Demonstrating Instructional Competence*** (2S)
Phase Objectives:

a. Demonstrate all Maneuvers to standards while simultaneously explaining how to fly them
b. Introduce maneuvers to simulated pilots in training
c. Correct pilot-in-training simulated errors
d. Teach maneuver appropriate risk surveillance and mitigation
e. Demonstrate active instructional level risk awareness, identification and mitigation

Web-based KNOWLEDGE

CROSS-COUNTRY PLANNING

FLIGHT OPERATIONS

ADVANCED GROUND INSTRUCTOR

4.1 CROSS-COUNTRY PLANNING

Objective: You will reacquaint yourself and sharpen your knowledge of cross-country preflight planning, in-flight calculations, and diversion in preparation for teaching those concepts to new pilots.

4.1.1 Preflight and Inflight Cross-Country Calculations

Fuel Required and Range
Wind Triangle, Course and Heading (MM: Keep triangle?)
Ground Speed and Fuel Consumed
Distance and Time to Climb
Magnetic Heading and Ground Speeds
Determining the Wind
Distance Traveled and Indicated Airspeed
Off-Course Correction and Diverting to an Alternate

4.2 FLIGHT OPERATIONS

Objective: You will review flight planning products, aircraft and engine systems, cold weather and icing, taxiing with wind, collision avoidance, flight physiological factors, visual glide slopes, and airport marking and lighting.

4.2.1 Preflight Planning

Flight Plans
Chart Supplement
NOTAMs

4.2.2 Airplane Systems

Fuel Systems
Engines
Propellers
Constant Speed Propellers
Engine Ignition Systems
Electrical Systems

4.2.3 Engine Operations

Mixture
Overheating
Detonation and Pre-Ignition

4.2.4 Induction Icing and Cold Weather Operations

Induction and Impact Icing
Cold Weather Operations

4.2.5 Taxiing in the Wind and Collision Avoidance

Taxiing in the Wind
Avoiding Midairs
Scanning for Traffic

4.2.6 Aeromedical Factors

Hypoxia
Oxygen
Alcohol, Hyperventilation, and Scuba Diving
Motion Sickness, Spatial Disorientation and Vision

4.2.7 Visual Glide Slopes, Airport Markings and Lighting

2 Bar and 3 Bar VASI
PAPI
Airport Markings
Airport Lighting
Segmented Circle

4.3 ADVANCED GROUND INSTRUCTOR

Objective: You will review the expected knowledge concepts and learn the privileges of an Advanced Ground Instructor.

4.3.1 Advanced Ground Instructor

V-Speeds and Terms
Regulations
Ground Instructor Privileges

Scenario 1 – Elementary Task and Risk Management Review (4-1)
Objective:
Display command of all maneuvers surpassing minimum standards
Display instructional knowledge of risk and risk mitigation factors for each maneuver
Display instructional knowledge and ability to explain the elements of each task
Purpose/pressures (real or simulated):
Obtaining Flight Instructor Certificate
Aviation Employment
Where to go:
Training area
How to get there:
Pilotage, DR, Electronic Navigation
Planned deviations:
None
Planned malfunctions:
As specified by tasks
Risks (real or simulated):
Teach risks and mitigation factors when demonstrating each maneuver
Explain instructional risks and mitigation techniques for each maneuver

Preflight Discussion:

Reviewing your Skills
Pre-takeoff/After Landing Ground Operations *(Scenario 1-2 *)*
Airport Operations *(Scenario 1-2 ^)*
Fundamentals of Flight *(Scenario 1-2 #)*
Normal and Crosswind Takeoff and Climb
Normal and Crosswind Approach and Landing
Soft-Field Takeoff and Climb
Soft-Field Approach and Landing
Slip to a Landing
Go-Around/Rejected Landing
Rectangular Course
S-Turns across a Road
Turns Around a Point
Maneuvering During Slow Flight
Power-On Stalls (Proficiency)
Power-Off Stalls (Proficiency)
Straight-and-Level Flight (IR)
Constant Airspeed Climbs (IR)
Constant Airspeed Descents (IR)
Turns to Headings (IR)
Recovery from Unusual Flight Attitudes (IR)
Systems and Equipment Malfunctions

Postflight Discussion

Scenario 2 – Advanced Task and Risk Management Review (4-2)
Scenario Objectives:
Display command of all maneuvers surpassing minimum standards
Display instructional knowledge of risk and risk mitigation factors for each maneuver
Display instructional knowledge and ability to explain the elements of each task
Purpose/pressures (real or simulated):
Obtaining Flight Instructor Certificate
Aviation Employment
Where to go:
Training area
How to get there:
Pilotage, DR, Electronic Navigation
Planned deviations:
None
Planned malfunctions:
As specified by tasks
Risks (real or simulated):
Teach risks and mitigation factors when demonstrating each maneuver
Explain instructional risks and mitigation techniques for each maneuver

Preflight Discussion

Reviewing your Skills:
Pre-takeoff/After Landing Ground Operations *(Scenario 1-2 *)*
Airport Operations *(Scenario 1-2 ^)*
Fundamentals of Flight *(Scenario 1-2 #)*
Short-Field Takeoff and Maximum Performance Climb
Short-Field Approach and Landing
Power-Off 180° Accuracy Approach and Landing
Steep Turns
Steep Spirals
Chandelles
Lazy Eights
Eights on Pylons
Cross-controlled Stalls (Demonstration)
Elevator Trim Stalls (Demonstration)
Secondary Stalls (Demonstration)
Spin Awareness
Accelerated Maneuver Stalls (Demonstration)
Emergency Approach and Landing (Simulated)
Systems and Equipment Malfunctions (Including Landing Gear Extension Failure)
Emergency Equipment and Survival Gear
Emergency Descent

Postflight Discussion

Phase 4 Ground Training Checklist

*All items to be graded independently by the instructor and customer, then discussed and a final grade assessed. *Desired outcome for all tasks by the end of the phase is "Explain"*	Instruction Given	Describe	Explain
Cross-country planning			
Cross-country in-flight calculations			
Diversion to alternate			
Airplane systems			
Engine operation			
Cold weather operations			
Aeromedical factors			
Visual glideslopes			
Airport signs, markings, and lighting			
Practical test prep			

Phase 4 Proficiency Checklist

*All items to be graded independently by the instructor and customer, then discussed and a final grade assessed. *Desired outcome for all tasks by the end of the phase is "Perform" or "Manage/Decide"*	Practice	Perform	Manage / Decide
Single-pilot resource management			
Risk management *Identifies risks both preflight and in-flight, evaluates options and chooses actions to mitigate the risks*			
Situational Awareness *Identifies potential SA risks; understands and uses cockpit tools available to enhance SA*			
Task management *Prioritizes and selects most appropriate tasks for phase of flight*			
Controlled flight into terrain awareness (CFIT) *Identifies those areas of an instructional flight with elevated CFIT risk*			
Pre-takeoff Ground Operations			
Preflight inspection *Performs preflight inspection using the checklist to confirm that all steps have been completed*			
Cockpit management *Briefs cockpit safety equipment and establishes and maintains an efficient and organized cockpit*			
Engine starting *Notes airplane position, uses checklist and safety procedures considers other persons/property*			
Taxiing *Runway incursion procedures record taxi instructions, airport diagram, full attention to taxiing*			
Airport, runway and taxiway signs, markings, and lighting *Understands and complies with airport signs, markings and lighting*			
Before takeoff check *Uses checklist for preflight, starting, run-up and all phases of flight*			
Airport operations			
Radio communications and ATC light signals *Uses correct procedures and terminology and correctly interprets simulated light signals*			
Traffic patterns *Appropriate entry/exit procedures, pattern flown, altitudes, configuration and airspeeds*			

Phase 4 Proficiency Checklist *continued*

In-flight operations			
Takeoffs, landings and go-arounds			
Normal and crosswind takeoff and climb *PTS Standards*			
Short-field takeoff and maximum performance climb *PTS Standards*			
Soft-field takeoff and climb *PTS Standards*			
Normal and crosswind approach and landing *PTS Standards*			
Short-field approach and landing *PTS Standards*			
Soft-field approach and landing *PTS Standards*			
Slip to a landing *PTS Standards*			
Go-Around/Rejected Landing *PTS Standards*			
Power-off 180° accuracy approach and landing *PTS Standards*			
Fundamentals of flight			
Straight-and-Level Flight *Smooth, coordinated, effective use of flight controls, heading ±5°, altitude ±50 ft*			
Level Turns *Smooth, coordinated, effective use of flight controls, altitude ±50 ft, rollout on heading ±5°*			
Straight Climbs and Climbing Turns *Smooth, coordinated, effective use of flight controls, level off ±50 ft, rollout/maintain heading ±5°*			
Straight Descents and Descending Turns *Smooth, coordinated, effective use of flight controls, level off ±50 ft, rollout/maintain heading ±5°*			
Performance maneuvers			
Steep Turns *PTS Standards*			
Steep Spirals *PTS Standards*			
Chandelles *PTS Standards*			
Lazy eights *PTS Standards*			
Ground reference maneuvers			
Turns around a point *PTS Standards*			
S-turns across a road *PTS Standards*			
Rectangular course *PTS Standards*			
Eights on pylons *PTS Standards*			
Slow flight, stalls and spins			
Maneuvering During Slow Flight *PTS Standards*			
Power-On Stalls (Proficiency) *PTS Standards*			
Power-Off Stalls (Proficiency) *PTS Standards*			

Phase 4 Proficiency Checklist *continued*

Cross-controlled stalls (demonstration) *PTS Standards*			
Elevator trim stalls (demonstration) *PTS Standards*			
Secondary stalls (demonstration) *PTS Standards*			
Spin Awareness *PTS Standards*			
Accelerated maneuver stalls (demonstration) *PTS Standards*			
Basic instrument maneuvers			
Straight-and-level flight (IR) *PTS Standards*			
Constant airspeed climbs (IR) *PTS Standards*			
Constant airspeed descents (IR) *PTS Standards*			
Turns to headings (IR) *PTS Standards*			
Recovery from unusual flight attitudes (IR) *PTS Standards*			
Emergency operations			
Systems and equipment malfunctions *PTS Standards*			
Emergency descent *PTS Standards*			
Emergency approach and landing (simulated) *PTS Standards*			
Emergency equipment and survival gear *PTS Standards*			
After landing ground operations			
Post-landing taxi and parking *Safely exits runway, uses runway incursion avoidance procedures, safe movement in parking area*			
Postflight procedures *Secures aircraft and completes appropriate checklists and postflight inspection*			

Phase 4 completion standards:

You have completed Phase 4 when you

- Review your home study results with your instructor
- Demonstrate all maneuvers to standards while simultaneously explaining how to fly them
- Introduce maneuvers to simulated pilots in training
- Correct pilot-in-training errors
- Demonstrate ability to teach appropriate risk surveillance and mitigation
- Demonstrate active instructional level risk awareness, identification, and mitigation
- Achieve a grade of “Perform” or “Manage/Decide” on all Phase Proficiency Checklist tasks
- Complete the Phase 4 Progress Check

INSTRUCTOR NOTES:

Scenario 3 – Final Phase/Stage Check (4-3)

Objective:

Check instructor selects at least the minimum tasks required for an actual practical test
Check instructor conducts scenario as a mock instructor practical test
Instructor applicant breaks down each maneuver and explains its basic elements while demonstrating the maneuver

Purpose/pressures (real or simulated):

Obtaining Flight Instructor Certificate
Aviation Employment

Where to go:

Training area

How to get there:

Pilotage, DR, Electronic Navigation

Planned deviations:

None

Planned malfunctions:

As specified by tasks

Risks (real or simulated):

Instructor applicant Identifies risk areas involved with each maneuver assigned
Instructor applicant teaches risks and mitigation techniques involved with each maneuver/task
Instructor applicant maintains active risk surveillance throughout the flight

Preflight Discussion

Checking your Skills:

Preflight Inspection
Cockpit Management
Engine Starting
Taxiing
Before Takeoff Check
Radio Communications and ATC Light Signals
Traffic Patterns
Airport, Runway and Taxiway Signs, Markings, and Lighting
Normal and Crosswind Takeoff and Climb
Normal and Crosswind Approach and Landing
Short-Field Takeoff and Maximum Performance Climb
Short-Field Approach and Landing
Soft-Field Takeoff and Climb
Soft-Field Approach and Landing
Slip to a Landing
Go-Around/Rejected Landing
Power-Off 180° Accuracy Approach and Landing
Straight-and-Level Flight
Level Turns
Straight Climbs and Climbing Turns
Straight Descents and Descending Turns
Steep Turns
Steep Spirals
Chandelles
Lazy Eights
Rectangular Course
S-Turns across a Road
Turns Around a Point
Eights on Pylons
Maneuvering During Slow Flight
Power-On Stalls (Proficiency)
Power-Off Stalls (Proficiency)

Cross-controlled Stalls (Demonstration)
Elevator Trim Stalls (Demonstration)
Secondary Stalls (Demonstration)
Spin Awareness
Accelerated Maneuver Stalls (Demonstration)
Straight-and-Level Flight (IR)
Constant Airspeed Climbs (IR)
Constant Airspeed Descents (IR)
Turns to Headings (IR)
Recovery from Unusual Flight Attitudes (IR)
Emergency Approach and Landing (Simulated)
Systems and Equipment Malfunctions
Emergency Equipment and Survival Gear
Emergency Descent
Postflight Procedures

Postflight Discussion

Phase 4 **Progress Check**

*All items to be graded independently by the instructor and customer, then discussed and a final grade assessed. *Desired outcome for all tasks by the end of the phase is "Perform" or "Manage/Decide"*	Practice	Perform	Manage / Decide
Single-pilot resource management			
Risk management *Identifies risks both preflight and in-flight, evaluates options and chooses actions to mitigate the risks*			
Situational Awareness *Identifies potential SA risks; understands and uses cockpit tools available to enhance SA*			
Task management *Prioritizes and selects most appropriate tasks for phase of flight*			
Controlled flight into terrain awareness (CFIT) *Identifies those areas of an instructional flight with elevated CFIT risk*			
Pre-takeoff Ground Operations			
Preflight inspection *Performs preflight inspection using the checklist to confirm that all steps have been completed*			
Cockpit management *Briefs cockpit safety equipment and establishes and maintains an efficient and organized cockpit*			
Engine starting *Notes airplane position, uses checklist and safety procedures considers other persons/property*			
Taxiing *Runway incursion procedures record taxi instructions, airport diagram, full attention to taxiing*			
Airport, runway and taxiway signs, markings, and lighting *Understands and complies with airport signs, markings and lighting*			
Before takeoff check *Uses checklist for preflight, starting, run-up and all phases of flight*			
Airport operations			
Radio communications and ATC light signals *Uses correct procedures and terminology and correctly interprets simulated light signals*			
Traffic patterns *Appropriate entry/exit procedures, pattern flown, altitudes, configuration and airspeeds*			
In-flight operations			
Takeoffs, landings and go-arounds			
Normal and crosswind takeoff and climb *PTS Standards*			
Short-field takeoff and maximum performance climb *PTS Standards*			
Soft-field takeoff and climb *PTS Standards*			
Normal and crosswind approach and landing *PTS Standards*			
Short-field approach and landing *PTS Standards*			
Soft-field approach and landing *PTS Standards*			
Slip to a landing *PTS Standards*			
Go-Around/Rejected Landing *PTS Standards*			

Phase 4 **Progress Check* continued*

Power-off 180° accuracy approach and landing *PTS Standards*			
Fundamentals of flight			
Straight-and-Level Flight *Smooth, coordinated, effective use of flight controls, heading ±5°, altitude ±50 ft*			
Level Turns *Smooth, coordinated, effective use of flight controls, altitude ±50 ft, rollout on heading ±5°*			
Straight Climbs and Climbing Turns *Smooth, coordinated, effective use of flight controls, level off ±50 ft, rollout/maintain heading ±5°*			
Straight Descents and Descending Turns *Smooth, coordinated, effective use of flight controls, level off ±50 ft, rollout/maintain heading ±5°*			
Performance maneuvers			
Steep Turns *PTS Standards*			
Steep Spirals *PTS Standards*			
Chandelles *PTS Standards*			
Lazy eights *PTS Standards*			
Ground reference maneuvers			
Turns around a point *PTS Standards*			
S-turns across a road *PTS Standards*			
Rectangular course *PTS Standards*			
Eights on pylons *PTS Standards*			
Slow flight, stalls and spins			
Maneuvering During Slow Flight *PTS Standards*			
Power-On Stalls (Proficiency) *PTS Standards*			
Power-Off Stalls (Proficiency) *PTS Standards*			
Cross-controlled stalls (demonstration) *PTS Standards*			
Elevator trim stalls (demonstration) *PTS Standards*			
Secondary stalls (demonstration) *PTS Standards*			
Spin Awareness *PTS Standards*			
Accelerated maneuver stalls (demonstration) *PTS Standards*			
Basic instrument maneuvers			
Straight-and-level flight (IR) *PTS Standards*			
Constant airspeed climbs (IR) *PTS Standards*			
Constant airspeed descents (IR) *PTS Standards*			

Phase 4 **Progress Check*continued*

Turns to headings (IR) *PTS Standards*			
Recovery from unusual flight attitudes (IR) *PTS Standards*			
Emergency operations			
Systems and equipment malfunctions *PTS Standards*			
Emergency descent *PTS Standards*			
Emergency approach and landing (simulated) *PTS Standards*			
Emergency equipment and survival gear *PTS Standards*			
After landing ground operations			
Post-landing taxi and parking *Safely exits runway, uses runway incursion avoidance procedures, safe movement in parking area*			
Postflight procedures *Secures aircraft and completes appropriate checklists and postflight inspection*			

Cessna Flight Instructor Course Training Requirements

Requirements for enrollment

Prior to enrolling in the flight portion of the Cessna Flight Instructor course, the customer must

- Be at least 18 years old prior to course graduation
- Hold at least a commercial pilot certificate
    - An airplane category, single engine land class rating
- For a Part 141 course, hold an instrument rating
    - An airplane category, single engine class rating

Ground training requirements

The customer must successfully complete

- All web-based knowledge instruction
- All Ground Training Checklists
- All Progress Checks
- Practice Knowledge Test (if required by Cessna Pilot Center)

Flight training requirements

Prior to completing the Cessna Flight Instructor course

- The applicable minimum hourly requirements must be met
- As well as successful completion of all Phase Proficiency Checklists and Progress Checks

Requirements for graduation

To obtain a graduation certificate for the Cessna Flight Instructor course, the applicant must:

- Be able to read, speak, write and understand English
- Complete all ground training requirements
- Complete all flight training requirements
- Achieve a satisfactory grade on the FAA Fundamentals of Instructing Knowledge Test
- Achieve a satisfactory grade on the FAA Flight Instructor-Airplane Knowledge Test

Minimum flight time requirements

The course is designed to meet the minimum hour requirements of

- 14 CFR Part 141, Appendix F Flight Instructor Certification Course
- 14 CFR Part 61 Subpart H Flight Instructors Other Than Flight Instructors with a Sport Pilot Rating

The minimum FAA hour requirements

- Vary depending upon your course of enrollment
- Are to be thought of as minimums only
    - The goal is to prepare you to be a competent, proficient flight instructor

What you get at an FAA certificated flight school (under 14 CFR Part 141)

If you take a course with this syllabus under Part 141 of the Federal Aviation Regulations, you are assured that flight school has been approved by the FAA and is required to demonstrate and maintain

- Standardized flight operations, including *Safety Procedures and Practices*
- A structured training environment
- Detailed training records available for regular and unannounced FAA checks and inspection
- At least an 80% first attempt pass rate for certificate or rating applicants training under Part 141

FLIGHT INSTRUCTOR COURSE

MINIMUM COURSE HOURS AND CHRONOLOGICAL LOG

For Part 141, Appendix F Compliance

These times are for customer/instructor guidance only. They are a suggested time schedule which will ensure compliance with the minimum flight and ground training required under FAR Part 141. Preflight and postflight briefings are required under FAR Part 141 for each flight training flight. It is suggested that you allow a minimum of .5 hour per flight for these briefings. The written exams may be credited toward the 40 hours of required ground training, and the check flights may be credited toward the 25 hours of flight training.

Date	Lesson	Minimum Total Flight Training	Instrument Flight Training	Complex Aircraft Flight Training	Total Flight Time	Ground Training
	STAGE 1 **PHASE 1: DEMONSTRATING MANEUVERS FROM THE RIGHT SEAT**					
	AERODYNAMICS					3.3
	SECTIONAL CHARTS					.3
	AIRSPACE AND WEATHER MINIMUMS					2.0
	FEDERAL AVIATION REGULATIONS					3.9
	PHASE 1 GROUND TRAINING Checklist					1.8
	FLIGHT SCENARIO 1	1.4			1.4	.7
	FLIGHT SCENARIO 2	1.4			1.4	.5
	FLIGHT SCENARIO 3	1.4			1.4	.5
	FLIGHT SCENARIO 4	1.5	.3		1.5	.5
	FLIGHT SCENARIO 5	1.5	.3		1.5	.5
	FLIGHT SCENARIO 6 AND **PROGRESS CHECK**	1.5			1.5	.7
	PHASE 2: GAINING PROFICIENCY DEMONSTRATING AND EXPLAINING MANEUVERS					
	FLIGHT INSTRUMENTS					.9
	AIRCRAFT PERFORMANCE					1.2
	WEATHER					3.6
	WEIGHT AND BALANCE					.8
	COMMERCIAL MANEUVERS					2.0
	TEACHING MANEUVERS					2.0
	PHASE 2 GROUND TRAINING Checklist					1.6
	FLIGHT SCENARIO 1	1.5			1.5	.5
	FLIGHT SCENARIO 2	1.5			1.5	.5
	FLIGHT SCENARIO 3	1.5			1.5	.5
	FLIGHT SCENARIO 4 AND **PROGRESS CHECK**	1.5			1.5	.7

Date	Lesson	Minimum Total Flight Training	Instrument Flight Training	Complex Aircraft Flight Training	Total Flight Time	Ground Training
PHASE 3: REFINING INSTRUCTIONAL SKILLS						
	COMMUNICATIONS AND RADAR SERVICES					.3
	RADIO NAVIGATION					.7
	FUNDAMENTALS OF INSTRUCTING					4.5
	PHASE 3 GROUND TRAINING Checklist					1.5
	FLIGHT SCENARIO 1	1.6	.3		1.6	.5
	FLIGHT SCENARIO 2	1.6			1.6	.5
	FLIGHT SCENARIO 3 AND **PROGRESS CHECK**	1.7			1.7	.7
	TOTAL RECEIVED STAGE 1					
	TOTAL REQUIRED STAGE 1	**19.6**	**0.9**		**19.6**	**37.7**

Date	Lesson	Minimum Total Flight Training	Instrument Flight Training	Complex Aircraft Flight Training	Total Flight Time	Ground Training
STAGE 2 **PHASE 4: DEMONSTRATING INSTRUCTIONAL COMPETENCE**						
	CROSS-COUNTRY PLANNING					1.2
	FLIGHT OPERATIONS					3.4
	ADVANCED GROUND INSTRUCTOR					.3
	PHASE 4 GROUND TRAINING Checklist					1.2
	FLIGHT SCENARIO 1	1.7	.3	1.7	1.7	.7
	FLIGHT SCENARIO 2	1.7		1.7	1.7	.7
	FLIGHT SCENARIO 3 AND **PROGRESS CHECK**	2.0	.3	2.0	2.0	1.5
	TOTAL RECEIVED STAGE 2					
	TOTAL REQUIRED STAGE 2	**5.4**	**0.6**	**5.4**	**5.4**	**9.0**

	TOTAL RECEIVED IN COURSE					
	MINIMUM REQUIRED FOR THIS PART 141 COURSE	**25.0**	**1.5**	**5.4**	**25.0**	**46.7**

	MINIMUM REQUIRED FOR PART 61	**(a)**	**(a)**	**(a)**	**(a)**	**(a)**

(a) * No minimum flight or ground training specified for part 61 other than that necessary to achieve the flight proficiency requirements of 61.187 and aeronautical knowledge of 61.185.

GROUND TRAINING SUMMARY

Phase	Online Knowledge Lessons*	Pre-flight & Post-flight Briefings**	Ground Training Checklist	Total
1	9.5	3.4	1.8	14.7
2	10.5	2.2	1.6	14.3
3	5.5	1.7	1.5	8.7
Stage 1 Totals	25.5	7.3	4.9	37.7
4	4.9	2.9	1.2	9.0
Stage 2 Totals	4.9	2.9	1.2	9.0
Totals	**30.4**	**10.2**	**6.1**	**46.7**

* Based on a 45 second average per each lesson question.
** Based on detailed times for pre-flight and post-briefing per flight.

This syllabus accommodates the required 40-hour minimum aeronautical knowledge training when used as a Part 141, Appendix F curriculum as shown in the table above.

The aeronautical knowledge training occurs through multiple paths including the online tested self study video segments, instructor/customer interaction in the pre- and post-flight briefings, and during the instructor/customer Ground Training Checklist reviews.

A customer receives credit for the online course study when they complete every lesson within the course. To complete a lesson, the customer must satisfactorily complete every question within that lesson.

Customer aeronautical knowledge competence is assured through instructor/customer Ground Training Checklist reviews that must be demonstrated to the Explain level and the Cessna Pilot Center (CPC) knowledge test.