PRIVATE PILOT SYLLABUS

Revised 09-15-07  Student name__________________

For optimum success, this syllabus should be followed as closely as possible. Ground orientation lessons should be accomplished first and prior to beginning flight training. However, if a student anxious to begin flight training, that candidate may elect to do so, and in so choosing will elect to obtain the ground orientation training mixed and staggered in with flight training prior during flight lessons cancelled for bad weather or mechanical problems. The candidate will none the less be responsible for all of the self study material covered below as soon as flight training begins, regardless of the orientation’s completion. The purpose of the below listed ground orientation sessions is to guide, clarify, and confirm the candidate’s self study, and must be performed regardless of the candidate’s familiarity with the subject matter.

No solo endorsement will be provided without completion of the ground orientation classes or of the relevant short answer written test provided by 1World Aero & Flight Club. Cross country endorsement will only be provided once the FAA written knowledge test has been successfully completed.

Students are solely responsible for reviewing all self study and homework reference materials assigned, and for the maintenance of such knowledge after obtaining the private pilot license, including changes and updates to such materials should they occur. Students should also consider that a good pilot is always learning, no matter how many flight hours they have accumulated.

Student and instructor will initial and date for each ground and flight lesson completed per this syllabus along each title bar.

Study Materials

- Gleim Private Pilot Test Guide OR equivalent Gleim CD-Rom
- Pilot’s Handbook of Aeronautical Knowledge (AC61-23C)
- Airplane Flying Handbook (FAA-H-8083-3)
- FAR/AIM
- Pilot Operating Handbook

DEMO FLIGHT

Demo Flight Briefing .5 hours
Intro- why a wing flies in cruise vs landing.
Function of aircraft surfaces.
Basic Visual Attitude.
The cockpit and the instrument panel.

**Demo Flight**
Purpose of checklist.
Normal Start (demo).
Normal taxi (demo & guided practice).
Take off, and Climbout (demo or guided practice).
Cruise and level turns (demo then guided practice).
Descent (demo or guided practice).

**Postflight, Debriefing & Logbook**  .5 hours

**Homework**
Pilot’s Handbook of Aeronautical Knowledge
Chapter 1  *Aircraft Structure*.

**STAGE 1 SYLLABUS:  PRE-SOLO**

**GROUND -  **  AERODYNAMICS

**Self Study Preparation**
Pilot’s Handbook of Aeronautical Knowledge
Chapter 2  *Principles of Flight*
Chapter 3  *Aerodynamics of Flight*
Chapter 4  *Flight Controls*

PRESENTATION OF TSA DOCUMENTATION (Valid US Passport, or Valid US Driver’s License and US Birth Certificate) or digital photo is taken.  (.1 hours)

**Ground Lesson -  2.5 hours**
Definition of four forces  Lift/Weight/Thrust/Drag.
Wings and the creation of lift.
  - Venturi effect & Bernouilli Principle.
  - Laminar flow lift vs upwash lift.
  - Induced vs parasite drag.
  - Angle of Attack.
  - Effect of angle of attack changes.
  - Critical AOA.
Stall Speed, wingloading, and factors effecting…
  - Cabin & fuel loads.
  - definitions - surface area, wingloading.
Center of Gravity.
- effect of forward vs aft CG on control, stability.
- effect on wingload.
Bank angle.
- vertical lift and weight.
- effective surface area.
Load factor.
- horizontal lift and weight/centripetal/centrifugal force.
- resultant forces.
- G-forces.
- intro aircraft categories, load limits.
- exceeding 60 degrees of bank.
- Va.
Coordination and uncoordination.
- spins entries, spins & recovery.
- adverse yaw, ailerons vs rudder.
Stability.
Static vs Dynamic vs positive, neutral, negative stability.
Axes of aircraft.
Longitudinal Stability.
- CP/CG.
- thrust line.
- taildown force.
Lateral Stability.
  - dihedral.
- keel effect.
Vertical stability.
- keel effect.
- sweep back.
Tendencies.
  - dutch roll.
  - spiral instability.
Left turn tendencies.
  Effect of power, pitch, speed.
  Torque, Pfactor, Slipstream.
Flight Controls.
Ailerons.
Adverse Yaw & rudder.
Elevator vs Stabilator.
Trim tabs and antiservo tabs.
Flap function and types.

Logbook & record keeping .1 hours

Homework
Gleim Private Pilot
Chapter 1  Airplanes and Aerodynamics  (entire chapter except 1.5)

Memory Items Checklist -  System Failures - Stabilator Failure, Aileron Failure

Pilot Information Manual

Section 1  General (review)
Section 2  Limitations (review)

Pre-Solo Written –  Answer questions covered in ground session.

GROUND - SYSTEMS

Self Study Preparation

Pilot’s Handbook of Aeronautical Knowledge

Chapter 5  Aircraft Systems
Chapter 6  Flight instruments

Pilots Information Manual  –  Section 7 Description (review)

Ground Lesson  2.5 hours

Engine Mechanical System & layout.
   Cylinders, pistons.
   Crank shaft & tie rods.
   4 Strokes 5 Events - intake, compression, ignition, power, exhaust.

Engine Electrical System.
   Magnetos.
   Sparkplugs.
   Magneto switch.

Engine Ignition/Starting System.
   Battery.
   Ignition Switch.
   Starter Motor.

Aircraft Electrical System.
   Battery.
   Alternator.
   Buses & circuit breakers.
   ACU or Overvoltage Regulator.
   Abnormal indication causes.
   - alternator belt.
   - under or over charge.
   - transient spikes.
   - shorts.
   Abnormal indication troubleshoot.
   Abnormal indication remedies.

Fuel System.
   Tanks, drains, sending units, gauges.
   Fuel selectors, strainers, filters.
   Aux pump, mechanical pump, boost pump.
   Carburator float chamber.
Throttle and mixture function and linkages.
Carburator venture and throttle body.
Carburetor icing and carburetor heating.
Fuel injection.
Vapor lock.

Abnormal combustion.
  Spark plug fouling.
  Preignition (electrical vs mixture related).
  Detonation.

Hydraulics.
  Oleo struts (vs spring leaf).
  Brakes.
    - master cylinders, calipers
    - inspection (also rotor disks & inspection, pads, proper pad width)
  Fluid reservoir location, color.
  Brake failure procedures.
    - landing
    - taxiing

Instruments.
  Pitot Static.
    - principal of operation
    - mechanical layout IAS vs Altimeter vs VSI
    - effects of blockage
  Altimetry and pressure changes, colesman window, altimeter setting requirements.
  Review Pressure altitude as needed
  Gyroscopic
    - rigidity in space and precession
    - vacuum gyros, vacuum pump, filters, palettes
    - electrical gyro
    - redundancy
    - vacuum gage indications and RPM
  Mechanical - Tachometer & Manifold Pressure, EGT.
    - electromechanical – oil Temp & pressure, CHT, fuel gauges
    - rising oil temperature, falling oil pressure
  Magnetic Compass.
    - operation
    - errors – Deviation, Oscillation, Variation, UNOS, ANDS

Avionics Operations.
  ELT.
  Navcoms and audio panels.
  Transponders.

Logbook & record keeping .1 hours

Homework
Gleim  Chapter 2 – Airplane Instruments, Engines, and Systems (entire)
Memory Items Checklist - System Failures – Low Fuel Flow, Alternator Failure
Pre-Solo Written – answer questions covered in ground session

GROUND - FLIGHT DISPATCHING - Part 1

Self Study Preparation
Pilots Handbook of Aeronautical Knowledge
Chapter 7 - Flight Manuals and Other Documents
Chapter 8 - Weight and Balance
Chapter 9 - Aircraft Performance

Ground Lesson 1.75 hours
Requirements.
  Pilot Documents and validity.
  Aircraft Documents – ARROW.
  Aircraft Inspections and validity.
  Student pilot limitations and authorizations by CFI.
Weight and Balance.
  Review affect of CG movement on stability.
  CG Envelope.
  Definitions.
    - weight vs arm vs moment
    - standard vs Basic empty Weight and Moment
Calculations.
    - WxA=M
    - WAM computation vs loading graph and table
    - weight shift formula
  Equipment lists: A,S,O,R items.
Performance.
  V Speeds – Vy, Vx, Va, Vs, Vso, Vfe, Vno, Vne.
  Definitions.
    - IAS,CAS,EAS,TAS,GS
    - True, Absolute, Pressure
    - Density Altitude
      - definition
      - effect of temperature, altitude, humidity
      - hazards
  Ground Effect.
  Performance graphs.
    - landing and takeoff ground roll & 50ft obstacle
    - climb performance
    - cruise performance
  Aircraft categories and classes reviewed

Logbook & record keeping .1 hours
Homework
Gleim  Chapter 5 - Airplane Performance and Weight and Balance (entire chapter)
Pilot Information Manual –
  Section 5 Performance (review)
  Section 6 Weight and Balance (review)
Pre-Solo Written – answer questions covered in ground session

GROUND - --------------------- FLIGHT DISPATCHING - Part 2

Self Study Preparation
Pilots Handbook of Aeronautical Knowledge
Chapter 10 - Weather Theory
Chapter 11 - Weather Reports, Forecasts, and Charts
FAR-AIM  AIM Chapter 7 Safety of Flight 7-1-1 to 7-1-10, 7-1-2 to 7-1-32, 7-2 -1
through 7-5 -14

Ground  3 hours
Weather Theory
  Sun and unequal heating
  Heat vs pressure vs density - Which moves which.
  Contradiction - Denser is colder and lower pressure
  Characteristics of pressure centers
  Characteristics of Stable Air
  Families and Types of clouds
  Formation of Clouds – condensation nuclei, moisture, relative humidity, dewpoint, lapse rate
  Cold front vs warm front behavior and displacement

Weather Hazards
  Thunderstorms.
  - ingredients.
  - stages and their hazards.
  - microbursts and their timing and hazards.
  - separation and avoidance.
  - airmass vs Steady State TSRA.
Fog.
  - radiation, advection, upslope, precip, steam
  - formation and dissipation
Icing.
  - clear, rime, mixed
  - winter warm fronts and freezing rain
  - freezing mist
  - emergency operation
  - basic deicing and anti-icing
Frost - effects and proper preflight removal.
Orographic Turbulence.
- high winds, LLWS
- mountain wave turbulence & need for further mountain training
Wake Turbulence.
- Aircraft weight, configuration, and intensity
- Dissipation rate
- Terminal avoidance procedures
- Crosswinds and parallel runways

Weather Services.
Flight Service Stations
Briefing by phone
- standard
- outlook
- abbreviated
Sequence and order of briefing components
- synopsis
- flight Precautions – Airmets, sigmets, convective sigmets, CWA
- currents - Metars, Pireps
- forecasts – TAF, FA
- winds Aloft
- notams – L,D,FDC
DUATS briefing.
Aviationweather.gov.
Other – TWEB, PATWAS, HIWAS.

Logbook & record keeping .1 hours

Homework
Gleim
Chapter 1 – Airplanes and Aerodynamics 1.5 Frost
Chapter 7 - Aviation Weather (entire chapter)
Chapter 8 - Aviation Weather Services (entire chapter)
Pre-Solo Written – answer questions covered in ground session

GROUND - FLIGHT PLANNING

Self Study Preparation
Pilots Handbook of Aeronautical Knowledge
Chapter 12 - Airport Operations
Chapter 13 – Airspace
Chapter 14 – Navigation
FAR AIM – FAR – 71.9/31/33/41/51/61/71
73.3/13/15/17/83/85
AIM - Chapter 9 Aeronautical Charts and Related Publications 9-1-1 to 9-1-4a
**Ground**  2.25 hours
Intro to local Airspace.
   - Classes B, E, G, ADIZ, FRZ, Restricted, Prohibited.
   - identification
   - specifications
   - dimensions
Cloud separation and Visibility requirements.
Communication, clearances, and equipment requirements.
Patterns - design, entry, and exit, staffing.
   - Controlled.
   - Uncontrolled field.
Intro local map symbology.
   - Airspace types.
   - Geographic terrain.
   - Obstructions and elevation figures.
   - Populations and structures.
   - Airport types and info.
Flight Planning.
   - Dispatch form.
   - flight plan template intro
   - weight and balance review
   - density altitude, take off and landing calculation review
Nav log form.
   - types and purposes of checkpoints – TOC, On course, Enroute, Prep, Descent
Intro Deduced Reckoning.
   - TC, TH, MC, MH, Variation
   - review TAS, GS
   - E6B use: WCA, GS, ETE, Endurance/Fuel use
   - mental ETE arithmetic @ 60kts, 90 kts, 120 kts
Airport Information.
   - info from AFD
   - info from sectional vsTAC

**Logbook & record keeping**  .1 hours

**Homework**

**Gleim Private Pilot**
Chapter 3 - *Airports Air Traffic Control, and Airspace* (sections 3.1 to 3.6)
Chapter 4 - *Federal Aviation Regulations* (entire chapter)
Chapter 9 - *Navigation: Charts & Publications* (entire chapter)

**Pre-Solo Written** – answer questions covered in ground session
Self Study Preparation

Pilots handbook of Aeronautical Knowledge
Chapter 15 - Aeromedical Factors
Chapter 16 - Aeronautical Decision Making

FAR AIM – FAR 67 301/303/305/309/311/313/315/401/403/405/409/413/415
AIM Chapter 8 Medical Facts for Pilots

Flight Simulator – Obtain

Ground .75 hours
Middle Ear and Sinus problems.
Motion Sickness.
Carbon Monoxide poisoning.
Hypoxia.
Hyperventilation.
Scuba Diving.
Spatial Disorientation in clouds, reduced visibility, and night.
Night vision.

Logbook & record keeping .1 hours

Homework
Gleim Chapter 6 Aeromedical Factors & Aeronautical Decision Making (ADM) (entire chapter)
Airplane Flying Handbook - Chapter 18 - Aeronautical Decision making
Video - review demo flight
Flight Simulator - Install and follow manufacturer’s tutorial for basic operation
Pre-Solo Written – answer questions covered in ground session

FLIGHT - AIRWORK 1

Self Study
Airplane Flying Handbook
Chapter 1 Introduction To Flight Training
Chapter 2 Preflight, Postflight, And Ground Operations
Chapter 3 Takeoffs And Climbs
Chapter 4 Basic Flight Manuevers
Chapter 6 Ground Reference Maneuvers (and Performance Manuevers) 6-1 to 6-8,

FARAIM - FAR 61 .81/83/85/87a-e/89/93a

FINAL AUTHORIZATION BY TSA MUST BE RECEIVED BEFORE FLIGHT TRAINING BEGINS IF STUDENTS FALLS UNDER AFSP.

Ground Briefing .75 hours
Visual collision avoidance.
  Before takeoff.
  Climbs and Descents.
  Straight and Level.
  Traffic Patterns.
  Near VORs.
  Training.
Relationship – low AOA/high IAS vs high AOA/low IAS.
Power for speed and pitch for altitude in cruise.
Power for altitude and pitch for airspeed on approach.
Effect of wind on airplane.
  Wind drift corrections.
  Rate and radius of turn vs air and ground speeds.
Fuel grades.
Hand propping hazards, Magneto grounding and securing.
The cockpit controls and the instrument panel.
Rudder vs brakes review.

**Filing Flight Plan (Demo)** .25 hours
**Checklist use & preflight. (Guided Practice)** .5 hours

**Flight** 1.5 hours
**Preflight** (demo)
**Taxi** (demo and practice)
**Run up** (challenge and response guided practice)
**Normal Takeoff** (demo)
**Departure** (practice)
  15 and 30 degree bank turns (demo and practice)
**Basic Visual Attitude** (practice)
**Slow flight at approach speed and L/D Max with partial flap configuration,**
  (demo and guided practice)
**Forward Slip** (demo and practice)
**Rectangular pattern** (demo and practice)
**Turns on a point** (demo and practice)
**Cruise, checklist use, and descent** (guided practice)
**Pattern entry, and approach** (demo)

**Postflight & Debriefing** .5 hours

**Homework**
**Normal Checklist** - *Normal Start, After Start, Taxi, Runup, Pretakeoff Check* (review video, perform on simulator, or with cockpit poster)
**Memory Items Check list** - *Regular Procedures* - Passenger Briefing, (review to understand) Manuever Check, Go Around (commit to memory)
**Video**- review airwork flight 1
**Flight Simulator** – Startup, taxi, runup, takeoff, climbout, level off, descent, & checklists

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**FLIGHT -**

**AIRWORK 2**

**Self Study Preparation**

**Airplane Flying Handbook**
- Chapter 5  *Slow Flight, Stalls, And Spins*
- Chapter 6  *(Ground Reference) & Performance Manuevers  6-14-15 Steep Turns*
- Chapter 7  *Airport Traffic patterns, Approaches and Landings 7-1 to 7-10*
  - Afterlanding Roll

**Ground Briefing  .5 hours**
- Anatomy of Short final – Round out to flare
- Pilotage/selection of visual checkpoints
- Pitch for airspeed  and power for altitude at low speeds
- Anatomy and sequence of the
  - Power off stall & recovery,
  - and go around
- Forward Slip
- Take off Emergency briefing & choosing an emergency field

**Student’s supervised preflight  .5 hours**

**Flight  1.75 hours**
- Preflight (demo)
- Taxi demo and (practice)
- Run up (challenge and response guided practice)
- Normal Takeoff (demo)
- Pilotage (demo)
- 30 & 45 degree bank turns (demo and practice)
- Slow flight at MCA dirty (demo and practice)
- Go around procedure (guided practice)
- Basic Visual Atttitude
- Intro Power Off Stalls *incipient* straight, turning, clean, dirty (guided practice)
- Forward slips (guided practice)
- Idle power glide at L/D max to 500 agl to simulated “emergency field”
- S turns across a road (demo and practice)
- Pattern entry, and approach (demo)

**Postflight & Debriefing  .5 hours**

**Homework Review**

**Normal Checklist** - 500 Foot Check, Cruise Check, Initial Descent Check (perform on simulator, or with cockpit poster)
Memory Items Check list –
Memory Items Checklist - Engine Problems – Take Off/Sudden Power Failure (review to understand, summarize and commit summary to memory)
Regular Procedures – Manuever Check & GoAround (re-review, perform on simulator and commit to memory)
Video- review airwork flight 2
Flight Simulator – Normal departure, cruise, 30 & 45 degree bank turns, MCA dirty, go arounds, & checklist

Self Study Preparation
Airplane Flying Handbook – Chapter 12 - Emergency Operations
Chapter 3 p.3-10
Federal Aviation Regulations
part 61, .3a,c/14/15/16/17/18/19a-c,f,g/23/25/27/29/31a,c-j/37/39/41/
part 91, Subpart A #.1/3/5/7/9/11/13/15/17/19/21
Subpart B: all FARs from #101 to #159
Subpart C: #201/205/207/209/211/213/215/

Ground Briefing .25 hours
Deduced reckoning introduction
Anatomy and sequence of the power on stall and recovery
Simulated engine out (enroute)

Filing Flight Plan (Guided Practice) .25 hours
Student’s supervised preflight. (Guided Practice) .5 hours

Flight 1.75 hours
Departure (guided practice)
Deduced reckoning (demo)
45 degree bank turns (demo & practice)
Slow flight dirty and clean (demo & practice)
Power off stalls
Full stalls straight and turning (demo & practice)
Power on stall (demo)
Simulated Engine out student flies, CFI guides procedure
Pilotage transition through practice area (guided practice)
Arrival (guided practice)

Postflight & Debriefing .5 hours

Homework
Memory items Check list –
Emergency Procedures Engine Problems –
Takeoff Engine Failure, Sudden Power Failure
(review video, perform on simulator, & commit to memory)
Precautionary landings & Ditching (review)

Fires -
Engine Fire During Start, Airborne Engine Fire, Airborne Electrical Fire, Cabin Fire, Wing Fire (review)

Pilot Information Manual – Section 3 Emergency Procedures - (review)

Video- review flight 3
Flight Simulator – Normal Departure, 45 degree bank turns, MCA, power off and power on stalls, simulated engine out procedures

FLIGHT - AIRWORK 4

Self Study

Ground brief .5 hours
Simulated Engine out drill explained by student
Rreview precautionary landing, ditching, different types of fires,

Filing Flight Plan (Supervised Practice) .25 hours
Students unsupervised preflight. .5 hours

Flight 2 hours
Deduced reckoning
45 degree bank turns (practice)
Slow flight, dirty/clean (practice)
Power off stall (practice)
Power on stall
  Incipient (demo and practice)
  Full (demo and practice)
Slips (demo and practice)
Simulated engine out, in practice area (demo and practice)
Pilotage transition (practice)
Arrival (guided practice)

Postflight, Debriefing & Logbook .5 hours

Homework
Video- review airwork flight 4
Flight Simulator – Normal Departure, 45 degree bank turns, MCA, power off and power on stalls, simulated engine out procedures

FLIGHT - (AIRWORK TO PATTERN TRANSITION)
Self Study
Airplane Flying Handbook
Chapter 7 - Airport traffic Patterns, Approaches, And Landings 7-10 Hydroplaning Dynamic, Viscous, Reverted Rubber, 7-11 Crosswind Approach and landing, Turbulent Approach & landing 7-13 Power Off Accuracy Approaches 7-15 to 7-19

Ground Briefing .5 hours
Hydroplaning
Power off accuracy approach/sim engine out in the pattern
Anatomy and sequence of...
- closed circuit patterns
- touch and goes

Flight Plan & Preflight allowance .5 hours

Flight 1.75 hours
Pilotage transition (practice)
Simulated engine out enroute (practice)
Power off accuracy approach enroute 360
Pattern entry & Arrival (practice)
Power off 90 approach
Power off 180 approach
Touch and goes (guided practice)
Deduced reckoning transition

Postflight, Debriefing & Logbook .5 hours

Homework Review
Normal Checklist – Approach/Pattern Entry, Final Descent Check
Memory Items Checklist – Regular Procedures – Closed Traffic, Touch & Go
Video - Review airwork to pattern transition flight
Diagram - Pattern sequence and procedures

FLIGHT INTRO TO PATTERN WORK

Self Study
Airplane Flying Handbook - Chapter 8 - Faulty Approaches And Landings

Ground Briefing .5 hours
Correcting for…
  - Low Final
  - Slow Final
  - High Final
  - High Round out
Late Round out
Floating
Ballooning
Bouncing
Porpoising
Wheelbarrowing
Hardlanding
Drifting
Intro simulated engine out in pattern

**Flight Plan & Preflight allowance.** .5 hours

**Flight** 1 hour
Full stops & Touch and goes (guided practice)
Go around (guided practice)
S-tu$rns & forward slips to landing (guided practice)
Simulated engine out in pattern (practice)

**Postflight, Debriefing, & Logbook** .5 hours

**Homework**
**Video** – Review Pattern 1
**Flight Simulator** – Closed pattern with low approaches and attempted touch and goes.
Go arounds.
Diagram – Pattern Sequence and Procedures

**FLIGHT** PATTERN WORK 2

**Self study**
**Pilots Information Manual** - Section 8 - Airplane Handling, Service and Maintenance
- Section 9 - Supplements

**Flight Plan & Preflight Allowance.** .5 hours

**Flight** 1.25 hours
Full stops & Touch and goes (practice)
Go around (practice)
S-turns & Forward slips to landing (guided practice)
Simulated engine out in pattern (practice)

**Postflight, Debriefing, & Logbook** .5 hours

**Homework Review**
Gleim CD Rom Practice Test
**Video** - Review Pattern 1
**Flight Simulator** – Closed pattern procedures with attempted touch and goes, go arounds, simulated engine out, slips and s-turns, and practice radio calls.

**Completion of Third Class Medical Exam**

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**GROUND** -  
**PRE-SOLO WRITTEN TEST**

1.5 to 4 hours dependent on student’s preparation
Ground review of completed take home pre-solo written test.

Logbook & record keeping .1 hours

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**FLIGHT**  
**CROSSWINDS (when applicable)**

**Ground Briefing** .25 hours
Review…
- Crabbing approach & kick out method & side slip to landing
- Gust factor approach speed adjustment
- Effect of wind on ground speed and rate and radius of turn

**Flight Plan & Preflight allowance.** .5 hours

**Flight** 1.25 hours
Crosswind Full stops & Touch and goes (guided practice)
Go around (practice)
Simulated engine out in pattern (practice)

**Postflight, Debriefing, & Logbook** .5 hours

**Homework**
**Airplane Flying Handbook** – Chapter 7 - 7-11 to 7-13 [Crosswind Landings and Turbulent Air Approach and Landing](#) (review)
**Video** - Review Crosswind Pattern
**Flight Simulator** - Closed pattern with crosswind touch and goes (set 10 knot left or right and observe need to crab on final and adjust sequence timing on base.)

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**FLIGHT**  
(Demonstration of Ability)

**Flight Plan & Preflight allowance.** .5 hours

**Flight** 1.25 hours
Touch and goes (unassisted through practice)
Simulated engine out in pattern all corners (unassisted when assigned)
Sturns and forward slips to final (unassisted as appropriate)
Yielding to and spacing with traffic (unassisted as appropriate)
Go around (unassisted when assigned/appropriate)

**Postflight, Debriefing, & Logbook** .5 hours

**Homework Review**  
**Video** - Review Demonstration of Ability  
**Flight Simulator** – 45 degree bank turns, power off and on stalls, slow flight, simulated engine out enroute, and in the pattern from 90 and 180 degrees, touch and go, pattern, go around, slips and s-turns.

**FLIGHT - PHASE CHECK**

**Self Study**  
Airplane Flying Handbook  Chapter 9 – *Flight By Reference To Instruments*

**Question & Answer Ground Test**  1 hour  
Stalls and spins  
Left turn tendencies  
Load factor  
Drag  
Performance graphs  
Weight and balance  
Airplane specs and speeds  
Airplane systems and malfunctions  
FAR Compliance  
General navigation methods  
Basic airspace  
Aeromedical  
Solo privileges and restrictions  
Weather services  
Weather hazards

**Ground Briefing**  .25 hours  
Instrument scanning  
Strengths and weaknesses of the attitude indicator  
Hazards of flight into IMC

**Flight Plan & Preflight Allowance.**  .5 hours

**Flight**  2 hours  
Introduce BAI while transition to practice area (instrument climb, straight and level, level turns, descents)  
Review  
    - Steep turns  
    - Slow Flight
Power off stall – straight ahead, dirty  
Power on stall – straight ahead clean  
Simulated engine out enroute  
Return to airport any navigational means available  

Phase check  
  Pattern entry  
  Normal approaches and landings (min. two touch and goes & 1 full stop)  
  90 degree power off accuracy landing  
  180 degree power off accuracy landing  

Postflight, Debriefing, & Logbook  .5 hours

Homework Review  
  Video - Review phase check  
  Flight Simulator - simulated engine out in the pattern from 90 and 180 degrees, touch and goes, pattern, go-around, slips and s-turns.

FLIGHT - CONFIRMATION OF CONSISTENCY & PRE-SOLO RELEASE

Self Study Preparation  
Previous homework review  

Flight Plan & Preflight allowance.  .5 hours

Flight  1.25 hours  
  Touch and goes (unassisted through practice)  
  Simulated engine outs in pattern via 90 & 180 degree accuracy landing  
    (unassisted when assigned)  
  S turns and forward slips to final (unassisted as appropriate)  
  Yielding to and spacing with traffic (unassisted as appropriate)  
  Go around (unassisted when assigned/appropriate)  
  Solo Sign offs!  
  Supervised Solo Flight  
    Full Stops  
    Touch and Goes  

Postflight, Debriefing & Logbook  .5 hours

Note:  Student is billed for time CFI is not inside aircraft but monitoring solo landings from ramp.

Homework  
Video – Review supervised solo.  
Pattern chair flight/or flight simulator
FLIGHT - REMOTELY SUPERVISED SOLO

Self Study Preparation
Previous homework

Flight Plan & Preflight Allowance. ______ 0.5 hours

Flight ______ 1 hour
Solo closed pattern touch and goes and full stops per limitations of solo endorsement and proper dispatching procedures.

Postflight, Debriefing, & Logbook ______ 0.5 hours

Note: Student is billed for time CFI is not inside aircraft but monitoring solo landings from ramp, as well as for debriefing time, and assistance securing aircraft.

Homework
Video – Review remotely supervised solo.
Pattern chair flight/or flight simulator.

STAGE TWO SYLLABUS: CROSS COUNTRY STUDENT

FLIGHT - SHORTS & SOFTS

Self study Preparation
Airplane Flying Handbook - 3-6 to 3-9 Short & Soft Field takeoff and Climbs
7-14 to 7-15 Short and Soft Field Approach and Landing

Ground
Short field take offs and landings
Soft field take offs and landings

Flight Plan & Preflight Allowance. ______ 0.5 hours

Flight ______ 1.25 hours
Short and soft take offs and landings (demo and practice)

Postflight & Debriefing ______ 0.5 hours

Homework Review
Gleim CD-Rom - Practice Test Chapters 1-9
Video – Review short and soft field landings
Flight simulator - Short and soft field take-offs and landings

**FLIGHT** - **BASIC INSTRUMENT CONTROL**

**Self Study Preparation**

*Airplane Flying Handbook*
- Chapter 9  *Flight By Reference To Instruments* (review)
- Chapter 11  *Navigation Systems*

**FAR AIM** – AIM *Chapter 1-1 to 1-1-8, 1-1-9 a,b,d, 1-1-16, 1-1-19a-d*

**Ground briefing .5 hours**

BAI theory
- Pitch, power, and bank
- Primary, supporting
- Control, performance
- FOE
- VOR intercept and track

Unusual attitudes

**Flight Plan & Preflight allowance. .5 hours**

**Flight 1.5 hours**

- Hooded climbs, descents, turns, cruise (practice)
- Hooded Intercepting and tracking radials (practice)
- Hooded constant speed and rate climbs and descents
- Hooded constant speed and rate climbing and descending turns (practice)

Unusual attitudes
- Unhooded (demoed)
- Hooded watching (guided practice)
- Hooded eyes closed till recovery (practice)

**Postflight, Debriefing, & Logbook .5 hours**

**Homework Review**

*Gleim Private Pilot* - Chapter 10 - *Navigation Systems* (entire chapter)

*Gleim CD Rom* - Practice Test (Covering Chapters 1-10)

**Video** - Review BAI flight

**Flight Simulator** -
- Climbs descents turns, cruise
- Intercepting and tracking radials
- Constant speed and rate climbs and descents

Unusual attitudes

**GROUND**  **AIRSPACE AND CHART REVIEW**
Self Study Preparation
FAR AIM - AIM Chapter 3 Airspace,

Ground 1.25 hours
AFDs
Sectional and TAC chart symbology
Map symbology relevant to aircraft range
   Geographic terrain – rivers, lakes, mountains etc
   Obstructions and elevation figures
   Towns, cities, roads, misc, etc
   B/C/D/E/G airspace types
   Special use airspace - ADIZ, FRZ, Restricted, Prohibited, Warning, Alert
Airspace
   Cloud and Visibility requirements
   Identification, specifications, dimensions

Logbook & record keeping .1 hours

Homework
Gleim CD Rom Practice Test (Covering Chapters 1-11)
Pre-Cross Country Written – answer questions covered in ground session

GROUND ATC and Tower Ops

Self Study Preparation
FAR AIM - AIM - Chapter 4 Air Traffic Control 4-1 to 4-4-6, 4-4-9, 4-4-12 to 4-4-12, 4-4-16 to 4-4-18, 4-5-1 to 4-5-8, 4-6-6 to 4-6-9 Chapter 5 Air Traffic Procedures 5-1-1 to 5-1-7, 5-1-10 to 5-1-13, 5-5-11&12, 5-5-15, 5-6-1 to 5-6-5 emergency Procedures 6-1-1 to 6-2-5, 6-2-7, 6-3-1 to 6-3-4, 6-4-2, Pilot Controller Glossary – Bolded Italics terms

Ground 1.5 hours
ATIS
   Initial call up & airspace entry - C vs D vs B
   Mode C requirements
   Descent in C vs D vs B
   Approach vs Departure Control
   Clearance Delivery vs Ground vs Tower
   Departing from a towered field – sequential radio calls
   Avoiding wake turbulence
   ARTCC vs TRACON
   Taxiway signage
Light gun signals
Tower operations
LAHSO ops
Flight following
Lost procedures & diversions

**Logbook & record keeping .1 hours**

**Homework**
Gleim CD Rom - Practice Test (Covering Chapters 1-11)
Pre-Cross Country Written – answer questions covered in ground session

**GROUND - Cross Country Flight Planning Review**

**Self Study Preparation**
Gleim Private Pilot  Chapter 11 - *Cross Country Flight Planning* (entire chapter)
Chapter 3 (section 3.7 to 3.16)

**Ground 1.75 hours**
Review definitions TC,TH,MC,MH, Variation, True, Absolute, Pressure & Density
Altitudes, GS, TAS
Review E6B use & practice
   Time/distance, WCA
   Fuel burn and endurance
   Density altitude & pressure altitude
   Off course heading corrections
Cross country planning
   Selecting points
   Filling out a planning form

**Logbook & record keeping .1 hours**

**Homework**
Gleim CD Rom Practice Test (Covering Chapters 1-11)
Pre-Cross Country Written – answer questions covered in ground session

**GROUND - NIGHT**

**Self Study Preparation**
Airplane Flying Handbook  Chapter 10 - *Night Operations*
FAR AIM - AIM Chapter 2 - *Aeronautical Lighting & Airport Visual Aids*

**Ground 1 hour**
Rods and cones
Acclimatization to Night operations
Cabin lighting red vs blue/green vs orange vs white
Multiple flashlights
False horizons, autokinesis,
Runway illusions
Night fuel minimums
Choosing visual check points at night
Runway lighting - edge, centerline, termination
Taxiway lighting - edge and centerline
Approach lighting  PAPI, VASI, PLASI, ODALS, REILS

Logbook & record keeping .1 hours

Homework
Gleim CD Rom - Practice Test (Covering Chapters 1-11)
Pre-Cross Country Written – answer questions covered in ground session

FLIGHT - Night Pattern

Self Study Preparation - NA

Flight Plan & Preflight allowance. .5 hours

Flight 1.5 hours
Night Take offs and full stop landings  (8 cycles)

Postflight & Debriefing .5 hours

Homework Review
Gleim CD Rom Practice Test (Covering Chapters 1-11)
Video - Night Pattern Review
Cross Country Planning Form/Nav Log – prepare with checkpoints,courses,
distances,altitudes, airport info, radio frequencies

FLIGHT - +50 NM straight line leg, two hour Night Cross Country

Self Study Preparation
Gleim CD Rom - Practice Test Chapters 1-11

Ground Briefing .5 hours
Review Cross Country Planning Form/Nav Log – complete & accurate,
Current maps and charged flashlights available
Tower Communication student callups prepared
**Flight Plan & Preflight allowance.** .5 hours

**Flight** 2.25 hours
VFR night cross country FME to any of SBY, ILG, LNS, CXY, MDT, MRB and back (Candidate’s choice, but tower must be in operation).
Pilotage/dead reckoning/radio navigation with flight following using night checkpoints.

**Postflight & Debriefing** .5 hours

**Homework Review**
Gleim CD Rom - FINAL Practice Test (Covering Chapters 1-11)
Video – Review night cross country

**GROUND - FAA WRITTEN TEST**

**Practice Test**
Successfully take Practice FAA Written given by CFI with 80% or better (2 hours), or provide evidence of multiple (4) successful recent practice tests with 80% or better (.25 hours)
Get Written Test Sign Off from CFI

**Logbook & record keeping** .1 hours

Arrange and take FAA Private Pilot Written Test and pass with 70% or greater.

**FLIGHT - VFR DAY CROSS COUNTRY**

**Self study**
FAR AIM – AIM 61-93a-e,95

**Flight Plan & Preflight Allowance.** .5 hours

**Flight** 2.25 hours
VFR day cross country FME to any of SBY, ILG, LNS, CXY, MDT, MRB and back.
(Candidate’s choice, but tower must be in operation).
- Tower operations
- Pilotage
- Calculator dead reckoning
- Mental deadreckoning
- Radio navigation
- Lost procedures & diversion
- Flight following
Postflight & Debriefing .5 hours

GROUND - PRE-CROSS COUNTRY WRITTEN REVIEW

1.5 to 4 hours dependent on student’s preparation
Review Pre Cross Country Written Test Packet

Logbook & record keeping .1 hours

FLIGHT Demonstration of Ability

Flight Plan & Preflight allowance. .5 hours

Flight 2 hours
Short take off
FME to Martin State - BWI Tower zone circumnavigation by VOR & GPS and class D operations
Martin State to Carroll County - Pilotage and Deduced Reckoning only
Soft cycle at DMW
BAI, Lost Procedures, Diversion to FME
Short landing at FME

FLIGHT CROSS COUNTRY PHASE CHECK

Ground .75 hours
Weather theory & hazards
Weather services
Flight planning resources
Airspace types, controlled operations, and services
Chart symbology
Federal Aviation Regulations

Flight Plan & Preflight allowance. .5 hours

Flight 1.5 hours
Short take off
FME to Carroll County - Pilotage and Deduced Reckoning only
Diversion
BAI
Lost Procedures, deduced reckoning diversion to FDK
Soft cycle
Return to FME any navigation resource
Short landing
Postflight & Debriefing .5 hours

Homework
Video – Review Phase Check
Prepare – Cross country flight plans and log forms

FLIGHT - SOLO CROSS COUNTRIES

Sigh Offs

Ground
CFI review of student’s preflight planning and sign off for each specific flight

Flight three flights of 2.25 each
Solo Cross Countries totaling 5 hours or more with three landings at a towered airport(s)
FME – MRB – FDK – FME
FME – LNS – DMW – FME
FME – SBY – ESN – FME

Postflight & Debriefing .25 hours

Homework
Pre-solo and pre-cross country writtens - Review
Flight Simulator – Steep Turns, Slow Flight, Power Off and On Stalls, Simulated Engine Outs, Slips, Go Arous, BAI (straight and level, level turns VOR intercept and tracking, constant speed and rate climbs and descents, unusual attitudes), lost procedures, diversion, short and soft field operations, towered arrival and departures, radio calls at towered airports

STAGE 3 SYLLABUS PRE-PRIVATE PILOT

GROUND PRE-PRIVATE WRITTEN

Self study preparation
Pre-Private Written - Complete
FAR AIM - AIM Chapter 7 7-6-1 to 7-6-3
FAR-AIM - FAR – 61 .43/45/47/49/51/55/56/59/60/102/103/105/107a,b1,2/109a,b/110//113/117

Ground 1 to 2 hours dependent on student’s preparation
Pre-Private Written Reviewed
Briefing on and review of each maneuver in PTS and PTS standards

**Logbook & record keeping .1 hours**

**Homework**
PTS – Review standards

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**FLIGHT - COMPREHENSIVE FLIGHT REVIEW**

**Self Study Preparation**
Maneuvers Guide - Review
Video
Review favorite parts of airwork video, BAI video, short & soft field video

**Flight Simulator** – Steep Turns, Slow Flight, Power Off and On Stalls, Simulated Engine Outs, Slips, Go Aro...

**Flight Plan & Preflight Allowance. .5 hours**

**Flight 2.25 hours**
Cross country procedures
Steep turns
Slow flight
Stalls, power on & off
Simulated Engine out in and out of the pattern
Go around
Touch and go

Ground reference maneuvers – rectangular pattern, turns on a point, s-turns across a road

Hood work – straight & level, climbs, descents, level turns

Unusual attitudes

Lost procedures and diversion

Short and soft takeoffs and landings

**Postflight & Debriefing .5 hours**

**Homework**
Airplane Flying Handbook - Chapter 13 - *Transition to Different Airplanes and Systems*

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**GROUND - COMPREHENSIVE GROUND REVIEW**

**Self Study Preparation**
Pre-solo, pre-cross country, pre-private writtens - Review
Ground  2-4 hours dependent on student’s preparation
Question and answer from pre-solo, pre-cross country, pre-private writtens.
Review of items missed on FAA written test.

Logbook & record keeping .1 hours

FLIGHT - FLIGHT REVIEW 2

Self Study Preparation
Manuever’s Guide – Review items deficient in comprehensive review
Video – Review Comprehensive Review Flight
Flight Simulator – Review items found deficient in comprehensive review

Flight Plan & Preflight Allowance. .5 hours

Flight
Practice of items found deficient in comprehensive review, demonstration of ability and consistency of items found satisfactory.

Postflight, Debriefing, & Logbook .5 hours

Homework
Flight Simulator – Steep Turns, Slow Flight, Power Off and On Stalls, Simulated Engine Outs, Slips, Go Arounds, BAI (straight and level, level turns VOR intercept and tracking, constant speed and rate climbs and descents), lost procedures, diversion, short and soft field operations

FLIGHT - FLIGHT REVIEW 3

Flight Plan & Preflight Allowance. .5 hours

Flight  1.5 hours
Reconnaisance of examination field, familiarization with pattern entry exit procedures, noise abatement
Practice short and soft field operations

Postflight, Debriefing, & Logbook .5 hours

FLIGHT - PRE-PRIVATE PHASE CHECK

Self Study Preparation
Video – Review Comprehensive Review Flight
Flight Simulator – Steep Turns, Slow Flight, Power Off and On Stalls, Simulated Engine Outs, Slips, Go Arounds, BAI (straight and level, level turns VOR intercept and
tracking, constant speed and rate climbs and descents), lost procedures, diversion, short and soft field operations

**Ground** 1.25 hours
- Aerodynamics
- Systems
- Performance
- Weather theory, hazards, & services
- Flight planning resources
- Airspace types, controlled operations, and services
- Chart symbology
- Federal Aviation Regulations

**Flight Plan & Preflight Allowance.** .5 hours

**Flight** 2.25 hours
- Cross country procedures
- Steep turns
- Slow flight
- Stalls, power on & off
- Simulated Engine out in and out of the pattern
- Go around
- Touch and go
- Ground reference maneuvers – rectangular pattern, turns on a point, s-turns across a road
- Hood work – straight & level, climbs, descents, level turns
- Unusual attitudes
- Lost procedures and diversion
- Short and soft takeoffs and landings

**Postflight, Debriefing, & Logbook** .75 hours
- Evaluation and critique of all maneuvers performed

**Homework**
- Video – Review Phase Check Flight

**FLIGHT** POST PHASE CHECK REVIEW FLIGHT

**Self Study Preparation**
- **Flight Simulator** – Steep Turns, Slow Flight, Power Off and On Stalls, Simulated Engine Outs, Slips, Go Arous, BAI (straight and level, level turns VOR intercept and tracking, constant speed and rate climbs and descents), lost procedures, diversion, short and soft field operations

**Ground** .25 hours
Evaluation of phase check critique comparison of phase check instructor’s procedures and preferences.

**Flight** 2.25 hours
Satisfactory demonstration of all maneuvers

**Postflight, Debriefing, & Logbook** .5 hours

**Homework**
Submit IACRA checkride application

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**GROUND - LOOSE ENDS REVIEW**

**Ground** 1.5 hours
Review of weak points in comprehensive ground review
Completion of IACRA information
Logbook signoffs upon satisfactory demonstration
Schedule Flight Exam upon satisfactory completion

**Homework**
**Pre-solo, pre-cross country, pre-private writtens** - Review
**Flight Simulator** – Steep Turns, Slow Flight, Power Off and On Stalls, Simulated Engine Outs, Slips, Go Arounds, BAI (straight and level, level turns VOR intercept and tracking, constant speed and rate climbs and descents), lost procedures, diversion, short and soft field operations
**Video** – Review most helpful disks

**MAINTENANCE LESSONS AS NEEDED**

Expect one review flight per week until test is taken
Expect one review ground per two weeks until test is taken
Typical checkride lead time is one to two weeks.

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**TYPICAL HOURS BREAKDOWN OF PRIVATE PILOT TRAINING**

<table>
<thead>
<tr>
<th>Type of Training</th>
<th>Flight Lessons</th>
<th>Ground Lessons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orientation Airwork -</td>
<td>10 to 12 hours</td>
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<tr>
<td>Orientation Ground -</td>
<td></td>
<td>12 hours</td>
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<tr>
<td>Pre-solo Pattern Work -</td>
<td>10 to 20 hours</td>
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<tr>
<td>Pre-solo Ground Review -</td>
<td></td>
<td>3 hours</td>
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<tr>
<td>Solo Pattern Work -</td>
<td>3 hours</td>
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<tr>
<td>Pre-Cross Country Training -</td>
<td>4 to 5 hours</td>
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<tr>
<td>Pre-Cross Country Ground -</td>
<td></td>
<td>5.5 hours</td>
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<tr>
<td>Training Type</td>
<td>Hours</td>
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</tr>
<tr>
<td>Cross Country Training</td>
<td>10 to 12 hours</td>
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<tr>
<td>Cross Country Ground Review</td>
<td>2.75 hours</td>
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<tr>
<td>Pre-Private Flight Training</td>
<td>10 to 12 hours</td>
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<tr>
<td>Pre-Private Ground Review</td>
<td>7 hours</td>
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<tr>
<td><strong>Total Flight Training</strong></td>
<td><strong>45 to 70 hours</strong> (national average = 60 hours)</td>
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<tr>
<td><strong>Total Ground Training</strong></td>
<td><strong>30 hours</strong></td>
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<tr>
<td><strong>Total Briefings/Debriefings</strong></td>
<td><strong>15 to 30 hours</strong></td>
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