Learn to Fly: Private Pilot Ground School DeCal

Fall 2013

General Course Information

When: T/Th 6-8pm
Where: 30 Wheeler
Special Studies Coordinators:
Ben Hightower (benhightower@gmail.com)
Howard Brown (howard.a.brown.iv@berkeley.edu)
Jeremy Axelrod (jaxelrod@berkeley.edu)
Trevor Nesbitt (tnesbitt@berkeley.edu)
Course Department: Civil and Environmental Engineering
Faculty Advisor: Professor J. Rakas
Course Number: CE 98 (lower division), CE 198 (upper division)
CCN: Application
Units: 2, P/NP
Prerequisites: None

Course Description

The purpose of this course is to provide students a solid foundation as private pilots in a classroom setting. This course isn't intended for a student to actually control an airplane, but rather to prepare a student for flight training and delve into the world of aviation. As in driving school, the course will be held in a classroom. Although there are no prerequisites required, students who have science or engineering backgrounds/interests may benefit from the supplementary curriculum that explores the application of engineering in aviation.

As an introduction to the course, students will be introduced to the airplane and the fundamentals of flight. By the end of the course, students will be proficient with aircraft systems, flight operations, aviation meteorology, airplane performance, as well

as applications of pilot knowledge. This course is designed to develop the student's interest in the world of aviation through flying; one of the many real life applications of basic principles learned in mechanical and aeronautical engineering.

This course will have a heavier workload for a two unit course. There are two reasons for this:

1) SAFETY
Flying a plane is dangerous. There are many things that could go wrong mid-flight that would have dramatic repercussions on your life expectancy. With proper instruction, potential accidents can be averted.

2) SUBJECT MATTER
Flying involves the amalgamation of different disciplines, many of which will be new and unfamiliar. It is of the utmost importance to master all of these subject areas because they will be encountered on a daily basis when flying.

Materials

By the third week, you will need to purchase three items for this course. During lecture we will let you know where the best places to buy these is from. Total is approximately $30 + Shipping.

1. San Francisco VFR Sectional Chart
2. Plotter
3. E6B Computer
4. FAR/AIM

Faculty

Professor Rakas will be the faculty sponsor for this course. While the student facilitators have the primary responsibility of running the course, Professor Rakas has the final authority for inputting course grades. Also, if there are any complaints about the nature of the decal or how the course is run, she is the person to contact. See the Decal website for more on her responsibilities as a faculty sponsor.

Professor Rakas may supervise the student course facilitators through occasional communication and follow-ups at her discretion. She may also choose to visit lectures with no prior notice to the students or facilitators.

Method of Instruction

Class: Lecture and activities. Class will meet every Tuesday from 6-8pm for regular discussions. Class will also meet on irregular Thursdays (to be announced in the future) for guest lectures and activities.

Homework: Core understanding worksheets and multiple choice questions from the FAA test bank will be assigned on a weekly basis.

Student Evaluation

Student attendance is mandatory. All homework must be turned in completed and on time. There will be an optional Practice Exam given at the end of the semester.

The grading breakdown is as follows:
20% Attendance
20% the maximum percentage of either the Practice Exam or Attendance
60% the maximum percentage of either the Practice Exam or Homework

Note that there is a total of 100% available; a passing grade is 70% or higher.

Tentative Teaching Schedule: Tuesday/Thursday

	Fundamentals of Flight
Week 1	**All/Howard: 9/10/13:** Introduction to General Aviation, Flight Training Overview **Jasenka Rakas: 9/12/13:** History of Aviation
Week 2	**Jeremy: 9/17/13:** Airplane Systems, Powerplant, Flight Instruments
Week 3	**Trevor: 9/26/13:** Forces of Flight, Aerodynamics of Flight, Stability
	Flight Operations
Week 4	**Jeremy: 10/1/13:** Safety of Flight, Airports **Mark Hansen: 10/1/13:** Runway Incursions **Jasenka Rakas: 10/3/13:** Airport Master Planning **Yi Liu: 10/3/13:** Airport Surface Management
Week 5	**Ben: 10/8/13:** Aeronautical Charts, Airspace
Week 6	**Trevor: 10/17/13:** Radar and ATC Services, Radio Procedures, Sources of Flight Information
	Aviation Meteorology
Week 7	**Ben: 10/22/13:** Basic Weather Theory, Weather Patterns
Week 8	**Howard: 10/29/13:** Weather Hazards, Obtaining Weather Information
	Performance and Navigation
Week 9	**Jeremy: 11/5/13:** Airplane Performance, Weight and Balance **Michael Sealhorst: 11/7/13:** Airline Opse: Fuel Loading/Flight Dispatching
Week 10	**Trevor: 11/14/13:** Flight Computers, Pilotage/Dead Reckoning, VOR/DME, ADF
Week 11	**Howard: 11/19/13:** Cross-Country Flight Planning **Guest Lecture 11/21/13:** TBA
Week 12	**Ben: 11/26/13:** Applying Human Factors, Aviation Physiology, Aeronautical Decision Making, Review
Week 13	**All: 12/3/13 OPTIONAL: Simulated FAA Private Pilot Written Examination** Highest scorer receives a free flight lesson certificate ($199 value!)