

Department of Aviation and Technology

San Jose State University

AVIATION 192

Instrument Flight Techniques

Spring Semester 2013

**Aviation 192-01** (lecture 24108) **Aviation 192-11** (Lab 24109)      **Units:** 3  
**Instructor:** Glynn Falcon      **Office:** IS-133C  
**Lecture Day & Hours:** Tuesday 9:00 to 10:45 p.m.      **Phone:** (408) 924-3203, 650-400-1523  
**Laboratory Day & Hours:** Thursday 9:00 to 11:45 p.m.      **E-Mails:** [ProfFalcon@aol.com](mailto:ProfFalcon@aol.com)  
**Classrooms:** IS-116 (Lec) IS-133 (Lab)      [Glynn.Falcon@SJSU.edu](mailto:Glynn.Falcon@SJSU.edu)  
**Office Hours:** IS-133C Tuesdays 11 to Noon. On Mondays & Wednesdays 11:45 to Noon and 1:15 to 1:30, I may be in IS216. Face to face time can be arranged by prior arrangement. I am available at all reasonable, non-class hours by email, texting, or telephone.

**Catalog Description:** Flight procedures, radio navigation, air traffic control, use of instrument charts. Flight simulator exercises on instrument flight maneuvers, departure and approach procedures.

**Prerequisites:** Aviation 2, but Aviation 73 (ATC), Metr 110, Aviation 141 would be very beneficial, especially for those without any flight experience.

**Objective:** Upon completion of this course the student will be familiar with current operations and procedures used in the instrument flight environment.

**Lecture and Lab:** Class will meet once per week for the lecture, and once per week for the lab portions of the class. For the lab portion of the class you will have lab assignments (missions) to complete. Due to the limited number of simulators, you will be allowed into the sim lab, with your photo ID badge (which I will provide), during department office hours to complete your scheduled labs. There will be a simulator sign up sheet located in the lab allowing you to sign up for a specific time for each simulator. Simulators should be available from all day on Mondays, Wednesdays and Fridays from 9 to 4:30. Currently, the Dept is working to allow additional access times and supervision for the sim lab. While the simulator usage for any enrolled student is unlimited, *no student may allow anyone outside of class into the lab or to use the simulators.* No food or liquids are allowed into the Sim Lab. Stay current with simulator assignments, since this clogs up the availability of the simulators for the new missions. Log the Hobbs meter time and Sim # for ALL times you are manipulating the flight controls. You must log 15 hours of flight simulator time in the Redbird, as most missions are done in it.

**Required Textbooks & Equipment:**

**Thumb Drive** - I will provide a key for your missions in the Redbird on the thumb drive.

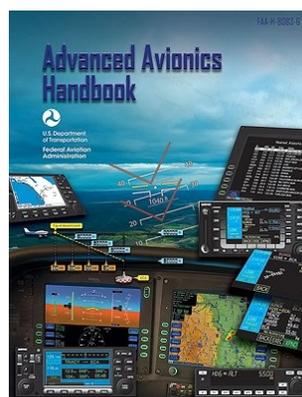
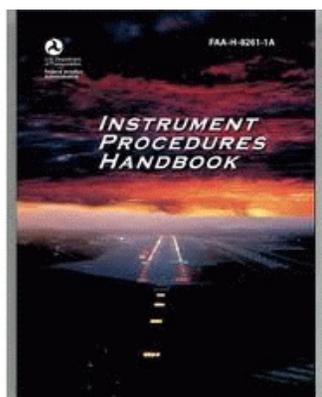
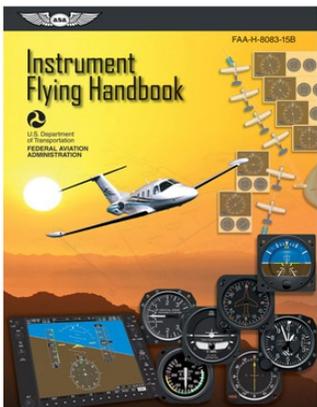
The reading materials are provided in the "Library" on-line in AnywhereEducation.

**(IPH) INSTRUMENT PROCEDURES HANDBOOK** (8261-1A) FAA, ISBN: 9781560276869, (2007)

**(IFH) INSTRUMENT FLYING HANDBOOK** (#H-8083-15B) FAA ISBN: 9781560277064,(2012)

**Recommended Reading:** *Advanced Avionics Handbook* (FAA-H-8083-6) (2009) free online

*Flight Navigator Handbook* (FAA-H-8083-18) (2011) free online



You are required to enroll in the online to the San Jose State University’s Instrument course maintained by AnywhereEducation located at: <http://sjsu.enldev.org> which will provide you with all of the following materials, tests, videos and handbooks:

1. Instrument Flying Handbook This is the primary knowledge source for the class.
2. Aeronautical Information Manual. This is the pilot’s primary reference for flight info and procedures.
3. Federal Air Regulations (FARs) . These are the rules of the air, medical, certifications, currency.
4. Airplane Flying Handbook. This is how to fly the airplane, why things are done, safety protocols.
5. NTSB rules The National Transportation Safety Board oversees aviation safety and investigations.
6. Practical Test Standards. This is the flight performance requirements to pass the Private flight test.
7. AOPA Safety Briefs, Reports and Advisor. Lessons learned by other pilots.
8. FAA Advisory Circulars. Detailed reading on various aspects of flight.
9. Aviation Weather. Greater in-depth exploration of the nasty’s of weather.
10. Advanced Avionics Handbook. Latest how-to use the “glass cockpit” displays and avionics.
11. Aeronautical Chart Users Guide. This explains all of the terms and symbols used on flight maps.
12. Weight & Balance Handbook. How to measure and keep the airplane within safe W&B limits.
13. Risk Management Handbook. Eliminate and manage the know risks of flight - - - especially you!
14. Instrument Flying Handbook. Once you get your “visual” license, you need to get your IFR rating.
15. Instrument Procedures Handbook. How things are done, and why, while flying instruments.
16. Aviation Weather Services. How to get briefed for weather and TFRs, and what’s available.
17. Flying Light Twins Safely. Helps to get you ready to fly multi-engine aircraft.
18. Aviation Instructors Handbook. How to properly teach flight lessons.
19. Flight lesson videos.
20. Garmin 430/530 Advanced Avionics Course. These are the standard General Aviation GPS systems.
21. The Pilot’s Handbook of Aeronautical Knowledge.

Once enrolled, you can utilize the course and materials on any Apple or IBM notebook, iPhone and iPad, or any combination thereof. Lessons quizzes are included and scored on-line as you progress through the course material.

**Tests and Grading:**

AnywhereEducation has on-line quizzes after each learning module, along with Stage exams for each of the major learning sections. You can take the quizzes and stage reviews multiple times. **HOWEVER, ONLY YOUR FIRST ATTEMPT AT EACH IS SCORED AND COUNTED.** Your best 20 on-line quizzes, and each of the Stage Exams, will be used for grading purposes. The Final Exam will be given in class and is closed book. In other words, if you haven't studied and learned the material as we go through the semester, you will not pass the Final Exam.

You should also complete the Aircraft Owners and Pilots Association’s (AOPA) Air Safety Foundation (ASF) Safety Courses listed below. At the Final Exam time, provide me with a copy of your ASF Course Completion Register (*transcript*), which AOPA maintains under your name and shows the dates of completion of each course, as evidence of timely completion of the assignment. Use your pilot certificate number, or SJSU student number to sign-in for the courses, which can be found in the AOPA’s web site at [http://www.aopa.org/asf/online\\_courses/](http://www.aopa.org/asf/online_courses/)

Completion of all Laboratory missions and the lab final flight check are worth 25% of your course grade.

**Grading & Weight**

<u>Item</u>	<u>Weight</u>
Best 20 of 24 Lesson Exams	25 %
Midterm and 3 Stage Exams	25 %
In-Class Final Exam	25 %
All Lab Assignments and Final Checkride	25 %
<b>Total</b>	<b><u>100 %</u></b>

A grade of C- or better is required to pass Aviation classes.

**Percentage = Grade**

90 – 100 =	A
80 – 89 =	B
70 – 79 =	C
60 – 69 =	D

## LECTURE SCHEDULE

<u>Week</u>	<u>Topic</u>	<u>Reading</u>
1 (1-29-13)	Introduction	IFH Intro pages vii-viii
2	Human Factors	IFH ch 3; IPH ch 1
3	Aerodynamic Factors	IFH ch 4
4	Flight Instruments	IFH ch 5
5 (2-26-13)	Attitude Flight - Six Pack	IFH ch 6 §1
6	Attitude Flight - Glass	IFH ch 6 §II
7	Basic Flight Maneuvers - Six Pack	IFH ch 7 §I; IPH ch 3
8 (3-19-13)	Basic Flight Maneuvers - Glass	IFH ch 7 §II
-	Spring Break March 25 - March 29	
9 (4-2-13) <b>Midterm Exam</b>	Nav Systems - NDB VOR DME	IFH ch 9 pages 1-19; IPH ch 4
10	Nav Systems - RNAV, GPS, INS	IFH ch 9 pages 20- 34
11	Nav Systems - ILS proc, Radar, RNP	IFH ch 9 pages 35-48; IPH ch 5
12	Enroute Charts/Procedures ATC, DP's and STAR's	IFH ch 10 IFH ch 10; IPH2:1-34
13	Approaches & Holding	IFH ch 10
14	Regulations Emergencies, Failures, and Weather	IFH vii, IPH , FAR Part 91 IFH ch 11 pages1-12, IPH

**FINAL** Written FAA style multiple choice in-class exam on Wednesday, May 15 from 0715-0930  
\*\*\*\* This schedule may change during the semester \*\*\*\*

**FINAL EXAM DATE - Wednesday, May 15 at 0715 to 0930 in IS-116.**

### **Extra Credit = Extra Knowledge (take the AOPA/ASF Safety courses on-line)**

*Single-Pilot IFR*

*Do The Right Thing: Decision Making for Pilots*

*Essential Aerodynamics: Stalls, Spins, and Safety*

*Pneumatic Systems*

*VFR GPS Guide: Garmin 430/530*

*GPS for IFR Operations*

*IFR Chart Challenge: VOR Approach*

*IFR Chart Challenge: RNAV Approach*

*IFR Chart Challenge: ILS Approach*

*IFR Insights: Charts*

*Know Before You Go: Navigating Today's Airspace*

*IFR Insights: Regulations*

*A Pilot's Guide to Flight Service*

**Academic Dishonesty:**

Refer to the University Catalog in regards to the academic dishonesty. If there is any evidence of academic dishonesty on the part of the student, action will be taken in accordance with University policy.

**Academic integrity statement (from the Office of Student Conduct and Ethical Development):**

Your own commitment to learning, as evidenced by your enrollment at San Jose State University, and the university's Academic Integrity Policy requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the office of Student Conduct and Ethical Development. The policy on academic integrity can be found at: [http://sa.sjsu.edu/student\\_conduct](http://sa.sjsu.edu/student_conduct).

**Campus policy in compliance with the Americans with Disabilities Act:**

If you need course adaptations or accommodations because of a disability, or if you need special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 requires that students with disabilities requesting accommodations must register with DRC to establish a record of their disability.