

San José State University
Department of Aviation and Technology
AVIATION 62 -- Instrument Flight Techniques
Spring Semester – 2017

Course and Contact Information:

Instructor:	Craig Hofstetter
Office Location:	IS-133 (Flight Simulation Lab)
Telephone:	(408) 718-1339
Email:	craig.hofstetter@sjsu.edu
Office Hours:	Tuesdays: 10:45 to noon; Thursdays: 11:45 - 2:00pm; Other times by appointment
Class Days/Time:	AVIA 62-01 (24011) (Lecture): TU 0900-1045 AVIA 62-11 (24012) (Laboratory): TH 0900-1145 AVIA 63-12 (29894) (Laboratory): TU 1200-1445
Classroom:	Lecture: IS-216; Labs: IS-133
Prerequisites:	AVIA 2

Course Description:

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

Course Learning Outcomes (CLO):

Upon completion of this course the student will be familiar with current operational procedures used in the instrument flight environment.

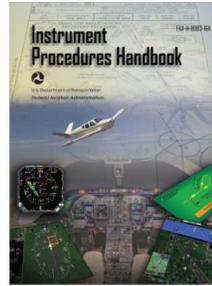
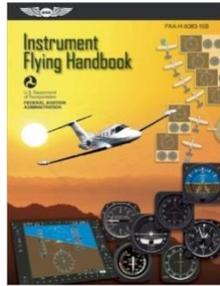
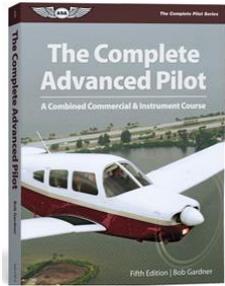
Lecture and Lab:

The entire class meets Tuesday for lecture. Approximately half the class subsequently meets Tuesday afternoon for Lab, while the other half meets Thursday morning for Lab. Lab sessions will be devoted primarily to completing simulator flying assignments (“missions”), although some will be utilized for additional lecture periods.

Simulator Lab:

AVIA 62 is very much a “hands-on” course. SJSU’s simulator laboratory contains a number of simulators with varying levels of performance and sophistication. Details surrounding mission completion, simulator operations and after-hours scheduling options will be addressed during the first laboratory period.

Required Textbooks:



The Complete Advanced Pilot: A Combined Commercial & Instrument Course Fifth Edition

By: Bob Gardner; ISBN: 978-1-61954-085-9

Price: ~ \$22 (Amazon)

Instrument Flying Handbook - 2012

U.S. Department of Transportation (FAA); FAA-H-8083-15B

Price (download): Free @ FAA.gov

Instrument Procedures Handbook - 2015

U.S. Department of Transportation (FAA); FAA-H-8083-16A

Price (download): Free @ FAA.gov

Additional Recommended Readings: (All of these FAA texts are available online and are also found in course CANVAS "Files"):

- Aeronautical Information Manual (2016)
- Advanced Avionics Handbook (2009)
- Aeronautical Chart Users Guide. (2013)
- Airplane Flying Handbook (2004)
- Aviation Weather Services (2014)
- Flight Navigator Handbook (2011)
- Pilots Handbook of Aeronautical Knowledge (2016)

Course Requirements and Assignments: See “Course Progression Schedule”

Grading:

Overall Course Grade:

- Overall grades will be based on a curve; and “+” and “-“ grades can be awarded.
- A grade of C- or better is required to pass Aviation classes required for the major.

<u>Percentage</u>	<u>Grades</u>
90-100	A
80-89	B
70-79	C
60-69	D

Grading Breakdown: Grading percentage breakdown is shown in the table below, and ...

GRADING	
Exam #1 (Weeks 1-4)	15%
Exam #2 (Weeks 5-9)	15%
Exam #3 (Weeks 10-13)	15%
Final Exam (Comprehensive)	30%
Lab Missions	15%
Lab Checkride	10%
	100%
Extra Credit (1%/unit):	5% Maximum

... is based on the following:

- **Three mid-course Examinations.** Covering the weekly study blocks as shown above.
- **Final Examination.** An FAA-style multiple choice, comprehensive exam (tentatively planned utilizing CANVAS). Students scoring 80% or higher will receive certification of completing the ground training required to take the actual FAA Instrument Knowledge Examination.
- **Seven Laboratory Missions.** Simulator-based profiles covering different aspects of instrument flying
- **Laboratory Checkride.** Profile-based simulator evaluation based on the laboratory missions.
- **Extra Credit:** Students can earn extra credit by completing one or more of the following Aircraft Owners and Pilots Association's (AOPA) Air Safety Foundation (ASF) online Safety Courses. These courses provide additional information on critical aspects of instrument flying, and also enable students to assess their level of understanding. At 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 these courses. Use your pilot certificate number, or SJSU student number to sign-in for the courses, which can be found at: www.aopa.org/Education/Online-Courses

- ❖ *Single-Pilot IFR*
- ❖ *Do The Right Thing: Decision Making for Pilots*
- ❖ *Essential Aerodynamics: Stalls, Spins, and Safety*
- ❖ *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 Services*

University Policies:

Per University Policy S16-9, university-wide policy information relevant to all courses, such as academic integrity, accommodations, etc. will be available on Office of Graduate and Undergraduate Programs' [Syllabus Information web page](http://www.sjsu.edu/gup/syllabusinfo/) at <http://www.sjsu.edu/gup/syllabusinfo/>"

Week #	Dates	CLASSROOM	LABORATORY		PREPARATION READINGS			
		LECTURE	LECTURE	LAB	Comp Advanced Pilot	Inst Proceed Handbook	Inst Flying Handbook	
0	Jan 26 (Th)		Partner Assignments; Simulator operation (Th lab only)					
1	Jan 30 - Feb 3	Class Intro; Partner Assignments (Tu Lab only)	Flight Instruments		Ch 1 (1-17)		Ch 5 (1-24; 36-38)	
2	Feb 6 - Feb 10	Attitude Flying (analog)	Attitude Flying (cont'd) + Brief/Fly Mission #1	#1 (Due WK 5)	CH 2 (5-18)		CH 6 (1-14); CH 7 (1-28)	
3	Feb 13 - Feb 17	Attitude Flying (EFD) + Airspace	Brief/Fly Mission #2	#2 (Due Wk 6)	CH 12 (7,8)		CH 6 (16-28)	
4	Feb 20 - Feb 24	Navigation Systems + Enroute System	Nav Instruments + Intercept Techniques		CH 4 (1-15); CH 8 (1-14)	CH 2 (1-52)	CH 1 (4-11); CH 9 (1-19)	
5	Feb 27 - Mar 3	IFR Flight Planning Basics + Departures	Airports + Holding		CH 7 (1-20); CH 8 (17-24); CH 10 (45-47)	CH 1 (1-44); + AIM (CH 2)	CH 10 (1-7; 10-13)	
6	Mar 6 - Mar 10	Exam #1	Brief/Fly Mission #3	#3 (Due Wk 9)				
7	Mar 13 - Mar 17	Approach Plate Interpretation + Human Factors	Brief/Fly Mission #4	#4 (Due Wk 10)	CH 6 (9-21)	CH 4 (1-20; 36-56)	CH 1 (12-32); CH 3 (1-10)	
8	Mar 20 - Mar 24	Arrivals + ILS Approaches + Missed Approaches	Brief/Fly Mission #5	#5 (Due Wk 11)	CH 10 (12-30)	CH 3 (1-20); CH 4 (68-80)	CH 10 (8-10; 20-22)	
Spring Break (Mar 27-Mar 31)								
9	Apr 3 - Apr 7	Procedure Turns + Non-Precision Approaches	Brief/Fly Mission #6	#6 (Due Wk 12)	CH 10 (1-12)	CH 4 (80-88)		
10	Apr 10 - Apr 14	Exam #2	RNAV (GPS) Approaches + Aerodynamics		CH 3 (13-16)	CH 4 (23-36; 59-68)	CH 4 (1-17)	
11	Apr 17 - Apr 21	Weather	Brief/Fly Mission #7	#7 (Due Wk 14)	CH 5 (1-49)	CH 4 (2-8)	CH 10 (22-25)	
12	Apr 24 - Apr 28	FARs + Miscellaneous Approaches	Mission Completion & Optional Practice Checkrides		CH 8 (15-17); CH 10 (38-43); CH 12 (1-6)	CH 4 (56-59)	CH 10 (15-18)	
13	May 1 - May 5	Exam #3	Mission Completion & Optional Practice Checkrides & Lab Checkrides					
14	May 8 - May 12	IFR Emergencies + Review	Lab Checkrides		CH 11 (1-12)	A (1-6)		
15	May 15 & 16	Lab Checkrides						
FINAL	Tu May 23 @ 0715	FAA-style, multiple choice, comprehensive exam (planned utilizing CANVAS)						

LAB EMPHASIS	
1	Basic Airwork (pitch/bank/power settings)
2	Advanced Airwork #1 (+ timed turns; partial panel)
3	Advanced Airwork #2 (+ intercepts; airway work)
4	SIDs + Holding
5	STARS + ILS Approach + Missed Approach
6	Non-Precision Approaches
7	RNAV (GPS) Approaches (+ addl ILS Approaches)
Practice Checkride	OPTIONAL - Approach Briefing and ILS Approach
Checkride	Approach Briefing and Vectors to an ILS Approach