

San José State University
Aviation and Technology Department
AVIA 02, Intro to Aviation, Fall 2018

Course and Contact Information

Instructor:	Dr. Francesca Favaro
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Office Hours:	MW, 2:45 pm – 4:00 pm, or by appointment
Class Days/Time:	MW, 1:30 pm to 2:45 pm
Classroom:	IS 216

Course Format

Course materials such as syllabus, handouts, lecture slides, assignment instructions, etc. can be found on [Canvas Learning Management System course login website \(https://sjsu.instructure.com/courses/1266915\)](https://sjsu.instructure.com/courses/1266915). Reference material for studying available for free online, and constant reviews of such material is highly recommended. This makes the use of a laptop virtually necessary. HW and quizzes require the use of E6B computer, current sectional, and a plotter, which you will need to purchase for this course (see required material section). Short online courses and activities may also be required for earning extra-credit.

Catalog Description

Concepts, responsibilities, and professional ethics of an aviation professional. History of aviation, FAA certification, qualifications and privileges of aviation professionals. Career opportunities, career paths and progression.

Course Objectives

This is the foundational course for all of your future aviation studies. A broad spectrum of topics related to aviation practices and flight safety are covered within a limited time frame. For this reason, it is utterly important that the student does not follow behind, keeping up with the reading assignments and following lectures. “Each pilot shall, before beginning a flight, become familiar with all available information” (14 CFR 91.103). The same regulation and philosophy applies to this course. Read constantly, and you will do well in this course, which will lead to success in your other aviation courses. The course surveys the fundamentals of many topics, such as aerodynamics, aircraft subsystems, aviation weather, vehicle performance, safety and aviation regulations, national airspace, and airport operations. The student will also be introduced to navigation techniques such as pilotage and dead reckoning and will be instructed on the use of the E6B flight computer as an aid to navigation.

Course Learning Outcomes (CLO)

Upon successful completion of this course, students will be able to:

- CLO 1. Describe and identify the fundamental forces and principles of flight.
- CLO 2. Identify the major systems, structures, and performance parameters of an airplane.
- CLO 3. Analyze the importance of weather and identify local weather phenomena that impact aviation.
- CLO 4. Use resources in pre-flight planning and calculate weight and balance, and route and weather planning.
- CLO 5. Learn to recognize the human factors & limitations that affect pilot aviation safety for safe decision-making.
- CLO 6. Sustain (with written endorsement) the FAA Private Pilot written Knowledge Exam

Required Texts/Readings

Main Textbooks

- Pilot's Handbook of Aeronautical Knowledge (PHAK): primary textbook for this course, available on Canvas for free, or at https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/phak/
- GLEIM online prep for private pilots. Use the following URL for purchasing the program (which gives you a 20% discount at the price of \$43.95). <https://www.gleim.com/?promoID=SJSU-FAATP-PP>

Other readings

- Federal Aviation Regulations (FARs), at a minimum Part 1, 21, 39, 43, 47, 61, 71, 91, 830, available at <https://www.gpo.gov/fdsys/browse/collectionCfr.action?collectionCode=CFR&searchPath=Title+14&oldPath=&isCollapsed=true&selectedYearFrom=2016&ycord=228>
- Aeronautical Information Manual (AIM) – reference material for flight information and procedures, available at https://www.faa.gov/air_traffic/publications/media/aim.pdf

More information to get additional details on specific topics surveyed and covered in class can be found in:

- Aviation Weather AC-00-6B, available at https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_00-6B.pdf
- Aeronautical Charts User Guide, available at https://www.faa.gov/air_traffic/flight_info/aeronav/digital_products/aero_guide/media/Chart_Users_Guide_12thEd.pdf
- Weight and Balance Handbook, available at https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/media/FAA-H-8083-1.pdf
- Aviation Weather Services, available at https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_00-45G_CHG_1-2.pdf

The previous resources can also be downloaded from Canvas, and are all available for free.

Required Equipment

- E6B Flight Computer. Can be purchased online, either aluminum or cardboard versions. The following is the one I have and use in class: <https://goo.gl/e6ofJz> (~ \$25)
- Plotter. Can be purchased online: <https://goo.gl/WrMQLS> (~\$15)
- Current VFR sectional chart for San Francisco: <https://goo.gl/VfkLoL> (~\$10)

Course Requirements and Assignments

All assignments with descriptions, due dates, and submission guidelines will be posted on Canvas. No late submissions will be accepted, unless special arrangements are made with the instructor before the posted due date. Quizzes, which account for 10% of the grade, will be given at the beginning of the period during regular lecture periods. Unless in special circumstances in which notice will be given, quizzes will be given at the discretion of the instructor (so class attendance is highly encouraged). The following is relevant information regarding assignments:

- HW material will cover practical exercises and examples to help students in their preparation towards the FAA private pilot written knowledge test
- To ask for a re-grade or correction, a written notice explaining the issue that should be looked at by the instructor needs to be submitted
- Students that achieve an overall grade for the course higher than or equal to 80% **AND** achieved for the final examination a grade higher than or equal to 80% will be able to obtain a written endorsement from the instructor to take their private pilot knowledge exam (request must be made within 30 days from final exam date)
- Extra-credit opportunities will be assigned during the course. These activities will help students who at the end of the class present a situation that is in between two grades to achieve the higher grade. Extra-credit activities will involve the achievement of safety certificates on the AOPA website (online training for safety courses at http://www.aopa.org/asf/online_courses/ - certificate of completion will need to be presented to the instructor)
- Quizzes (starting at 9:00 am with typical duration of 15 minutes) will test students on reading assignments and retention of the material presented in class

As an aid to your preparation, please be reminded of SJSU's Credit Hour Requirement policy, which states:

"Success in this course is based on the expectation that students will spend, for each unit of credit, a minimum of 45 hours over the length of the course (normally 3 hours per unit per week with 1 of the hours used for lecture) for instruction or preparation/studying or course related activities [..]."

Final Examination and Evaluation Policy

The final exam will be closed-books, comprehensive, covering all material presented in class. There will be no make-ups for missed tests, except for medical or other reasons outside the student's control, and such must be documented by email or written notice. Such notice must be given prior to the event whenever possible.

Grading Information

Class assignments (HW and quizzes), midterms, and final exam all contribute to the overall grade with the following weights:

Item	Weight
Midterm 1	20 %
Midterm 2	20 %
Quizzes	10 % (combined average)
Homework	20 % (combined average)
Final Exam	30 %

Determination of Grades

There will be no curving of grades. Final grades will be assigned as follows:

- A: from 90% to 100%
- A-: from 88% to 90%
- B+: from 85% to 88%
- B: from 80% to 85%
- B-: from 78% to 80%
- C+: from 75% to 78%
- C: from 70% to 75%
- C-: from 68% to 70%
- D: from 60% to 68%
- F: less than 60%

Classroom Protocol

Class participation and attendance is strongly encouraged. Quizzes will be given at the beginning of class (9:00 am), and no make-up test will be arranged unless written notice prior to a missed quiz was given to the instructor and consent received to take a quiz at a later time. Cell-phones should be put in silent mode prior to entering class. Students that wish to use a laptop for any use other than note taking are encouraged to seat in the last row of the classroom as to not disturb other students that are following the lecture.

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/>

AVIA 02, Intro to Aviation, Fall 2018 – Course Schedule

The following is a tentative schedule for the class. Changes to the following schedule will be communicated promptly by the instructor.

Week	Date	Topic	Suggested Reading	Gleim & HW
1	08/22	History and topics for a career in Aviation	PHAK Ch. 1	
1	08/27	Introduction to aircraft construction	PHAK Ch. 3	
2	08/29	Forces and Moments of Flight	PHAK Ch. 4	1.1 1.2 1.3
2	09/03	<i>Labor Day – non-instructional day</i>		
3	09/05	Fundamentals of Aerodynamics (I)	PHAK Ch. 4/5	1.4 1.6
3	09/10	Fundamentals of Aerodynamics (II)		
4	09/12	Propeller Theory	PHAK Ch. 5	HW 1 due
4	09/17	Stability and Flight Controls	PHAK Ch. 6	1.7 1.8 1.9 1.10 1.11

Week	Date	Topic	Suggested Reading	Gleim & HW
5	09/19	Weight and Balance	PHAK Ch. 10	5.7 5.8 5.9 5.10
5	09/24	Vehicle Performance and charts	PHAK Ch. 11	5.1 5.2 5.3 5.4 5.5 5.6
6	09/26	Performance Exercises		HW 2 due
6	10/01	Aircraft Subsystems (I)	PHAK Ch. 7	2.10 2.12 2.13 2.14 2.15 2.16 2.17 2.20
7	10/03	Aircraft Subsystems (II)		
7	10/08	Flight Instruments – Pitot-static systems	PHAK Ch. 8	2.2 2.3 2.4 2.5 2.6 2.7
8	10/10	Flight Instruments – Gyroscopic, Magnetic, Glass	PHAK Ch. 8	2.1 2.8 2.9 HW 3 due
8	10/15	REVIEW in preparation for MIDTERM I	review	
9	10/17	MIDTERM I		
9	10/22	Airport Operations	PHAK Ch. 14	3.1 3.2 3.3 3.4 3.5 3.6 3.13
10	10/24	Airspace	PHAK Ch. 15	3.9 3.10
10	10/29	FARs overview and flight manuals	FAR/AIM; PHAK Ch. 9	Entire unit 4
11	11/31	Basic Weather Theory	PHAK Ch. 12	7.1 7.2 7.3 7.4 7.5 7.7 7.9 7.10 7.11
11	11/05	Weather Services	PHAK Ch. 13	HW 4 due Entire Unit 8
12	11/07	Weather exercises and Wind in the E6B		Entire Unit 8
12	11/12	Navigation Basics & E6B	PHAK Ch. 16	9.1 9.2 9.3 11.5 11.6 11.7
13	11/14	Review in preparation for MIDTERM II		HW 5 due
13	11/19	MIDTERM II		
14	11/21	<i>Non-instructional day – Thanksgiving Break</i>		
14	11/26	Flight Planning	PHAK Ch. 16	11.8 11.9
15	11/28	Cross-Country planning Exercise		
15	12/03	Navigation Exercises and wrap-up	PHAK Ch. 16	
16	12/05	Aeromedical Factors & Aeronautical Decision-making	PHAK Ch. 17 & 2	HW 6 due Entire Unit 6
16	12/10	REVIEW in preparation for FINAL	review	
Final Exam		Wednesday December 12th 12:15 pm – 14:30 pm IS 216		