

San José State University
Aviation and Technology Department
AVIA 112, Professional Commercial Pilot, Spring 2018

Course and Contact Information

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| Instructor: | Dr. Tyler Spence |
| Office Location: | IS 102 |
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| Office Hours: | M – 1:00 PM to 2:00 PM TH – 11:00 AM to 12:00 PM, or other times by appointment |
| Class Days/Time: | M/W, 9:00 AM to 10:15 AM |
| Classroom: | ENG 103 |
| Prerequisites: | AVIA 2, AVIA 62, AVIA 31, AVIA 42, AVIA 43, AVIA 91 |

Course Format

Course materials such as syllabus, handouts, lecture slides, assignment instructions, etc. can be found on [Canvas Learning Management System course login website \(https://sjsu.instructure.com/courses/1232032\)](https://sjsu.instructure.com/courses/1232032). Reference materials for studying are available for free online, and constant review of such material is highly recommended. This makes the use of a laptop or other readily available computer essential. HW and tests may require the use of E6B computer, current sectional, and a plotter, which you will need to purchase for this course (see required material section). Additional online study courses and activities may also be required for earning extra-credit. E-mail will be a primary means of communication to the class outside of scheduled class time. The email address you have connected to your SJSU account will be used by the instructor. Make sure you have email access readily available. For any notification to the instructor, an email to the instructor should be sent and a reply should be received within 24 hours.

Catalog Description

This course covers material necessary for the FAA knowledge requirements leading up to the award of the FAA Commercial Pilot Certificate. This course is formatted as a ground school and covers the aeronautical knowledge requirements for the Commercial Pilot Knowledge Test.

Course Objectives

This course will advance the knowledge of a private pilot level student. Principles of flight, aircraft systems, Federal Aviation Regulations, FAA airman publications, and air navigation services, and aviation meteorology will be reviewed. The student will obtain the knowledge necessary to meet the requirements for a commercial pilot certificate and for the Commercial Pilot Airplane Knowledge Test. The student will demonstrate a comprehension of professional aircraft operation, single pilot and crew resource management, safety and risk

management, and emergency procedures.

“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 as with all other pilot knowledge courses. Read constantly, and you will do well in this course, which will lead to success in your other aviation courses.

Course Learning Outcomes (CLO)

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

- CLO 1. Identify and describe advanced systems, structures, and performance parameters of an airplane.
- CLO 2. Identify and describe the applicable Federal Aviation Regulations, airman publications, and aircraft documents pertaining to safe aircraft operation in a commercial environment.
- 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 pertaining to commercial aircraft operations.
- CLO 6. Prepare for and satisfactorily complete (with written endorsement) the FAA Commercial Pilot Written Knowledge Exam

Required Texts/Readings

Main Textbooks

- Gardner, B. (2013). *The Complete Advanced Pilot: A Combined Commercial & Instrument Course* (5th ed.). ASA (Ed.). Newcastle, WA: Aviation Supplies & Academics, Inc.
- 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 Commercial pilots

Other Readings

- Federal Aviation Regulations (FARs), at a minimum Part 1, 21, 39, 43, 47, 61, 71, 91, 135, 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 online for free.

Required Equipment

- E6B Flight Computer. Can be purchased online, either aluminum or cardboard versions (Digital flight computers are **NOT** allowed for the course). The link is to a very common E6B that will last for a long time: <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. There may be a teaching assistant for the course who will help grade assignments. More information will be provided when applicable. The following is relevant information regarding assignments:

- HW material will cover practical exercises and examples to help students in their preparation towards the FAA commercial 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 who achieve a midterm grade higher than or equal to 80% will be able to obtain a written log-book endorsement from the instructor to take their commercial pilot knowledge exam. A
- Extra-credit opportunities will likely 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)

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-book and 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.

If the Commercial Pilot Knowledge Test is completed and a copy of the report submitted to the instructor by 5/14/18, the grade from the FAA exam may replace the grade of the final exam. In addition, the student may take and submit the grades for both the FAA written and the final, and the higher of the two grades will be used as a final exam score.

Grading Information

Class assignments, midterms, a group project, and final exam all contribute to the overall grade with the following weights:

| Item | Weight |
|-----------------------------|--------|
| Midterm | 20 % |
| Group Presentation | 30 % |
| Homework (Average) | 20 % |
| Final (or FAA Written Test) | 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. No make-up test or assignment will be arranged unless written notice prior to a missed assignment is given to the instructor and consent for a makeup or extension is received by the student. An e-mail should be sent to the instructor prior to any class being missed. 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 112, Professional Commercial Pilot, Spring 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 | HW Due |
|------|-------|--|-------------------|--------|
| 1 | 01/24 | Course Introduction and Overview | | |
| 2 | 01/29 | Federal Aviation Regulations for Commercial Operations, <i>Assign Group Projects</i> | CAP Ch. 12 | |
| 2 | 01/31 | FARs for Commercial Operations II | CAP Ch. 12 | |

| Week | Date | Topic | Suggested Reading | HW Due |
|------|-------|--|---|-----------------|
| 3 | 02/05 | Aerodynamics and Principles of Flight | CAP Ch. 2 PHAK Ch. 4/5 | |
| 3 | 02/07 | Airplane Flight Manuals, Documents and Instruments | CAP Ch. 1 PHAK Ch. 6/9 | HW 1 due |
| 4 | 02/12 | Engines and Systems | CAP Ch. 3/13 PHAK Ch. 7 | |
| 4 | 02/14 | Airspace | PHAK Ch. 15 CAP Ch. 12 | |
| 5 | 02/19 | Airports and Air Traffic Control | PHAK Ch. 14 CAP Ch. 6/13 | |
| 5 | 02/21 | Airplane Performance Charts | CAP Ch. 3 PHAK Ch. 11 | |
| 6 | 02/26 | Weight and Balance | Supplemental Materials PHAK Ch. 10 | HW 2 due |
| 6 | 02/28 | Aviation Weather | CAP Ch. 5 PHAK Ch. 12 and Supplemental Materials | |
| 7 | 03/05 | Aviation Weather Services | CAP Ch. 5 PHAK Ch. 13 and Supplemental Materials | |
| 7 | 03/07 | Navigation Charts and Publications | CAP Ch. 6 Supplemental Materials | |
| 8 | 03/12 | Navigation Systems | CAP Ch. 4 PHAK Ch. 16 | |
| 8 | 03/14 | Flight Planning and Navigation | CAP Ch. 3 and 4 PHAK Ch. 16 | HW 3 due |
| 9 | 03/19 | Review for Midterm | | |
| 9 | 03/21 | MIDTERM EXAM | | |
| 10 | 03/26 | SPRING RECESS Monday March 26, 2018 – Friday, March 30, 2018 | | |
| 10 | 03/28 | | | |
| 11 | 04/02 | Complex Aircraft Operations <i>Sign Commercial Knowledge Test Endorsement</i> | CAP Ch. 13 | |
| 11 | 04/04 | Advanced Aircraft Systems | PHAK Ch. 7 | |
| 12 | 04/09 | NTSB Part 830/Incident and Accident Notification | FAR/AIM | |

| Week | Date | Topic | Suggested Reading | HW Due |
|-------------------|--|---|---------------------------|-----------------|
| | | | Supplemental Materials | |
| 12 | 04/11 | Professionalism in the Commercial Environment | CAP Ch. 13 | HW 4 due |
| 13 | 04/16 | Professionalism II | CAP Ch. 13 | |
| 13 | 04/18 | Aeromedical Factors and Physiology | CAP Ch. 13 PHAK Ch. 17 | |
| 14 | 04/23 | Risk Management and Aviation Safety and Decision Making | CAP Ch. 13 PHAK Ch. 2 | |
| 14 | 04/25 | Maneuvers/Emergency Procedures | CAP Ch. 14 | |
| 15 | 04/30 | Finalize Group Project Work | | |
| 15 | 05/02 | Group 1 and Group 2 Presentations | | HW 5 due |
| 16 | 05/07 | Group 3 and Group 4 Presentations | | |
| 16 | 05/09 | Group 5 and Group 6 Presentations | | |
| 17 | 05/14 | REVIEW in preparation for FINAL | | |
| FINAL EXAM | TUESDAY, MAY 22nd, 07:15-09:30AM, ENG 103 | | | |