

San José State University
College of Engineering
Department of Aviation and Technology
Avia 042, Aircraft Systems
Section 01 (lec) & 11&12 (labs) Fall 2016

Instructor:	Daniel L. Neal
Office Location:	Main Campus – IS 106
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Office Hours:	At RHV 106 Prior to, and after Lab sections, and Reference the Flash Appointment System for additional hours at Main Campus
Class Days/Times:	Section 1 (lecture) Wednesdays 6pm to 7:45pm Section 11 (lab) Mondays 6pm to 8:45pm at RHV 120 Section 12 (lab) Tuesdays 8am to 10:45am at RHV 120
Classroom:	Lectures are in IS-216 Labs are at the Reid Hillview facility (RHV 120)
Prerequisites:	Avia 2, Phys 2A

Canvas

Copies of the course materials such as the syllabus, major assignment handouts, etc. may be found on SJSU's Canvas system.

Course Description

Students will learn operational and analytical aspects of key aircraft systems such as flight control, electrical, and hydraulic systems, oxygen and pressurization systems, landing gear, instrumentation, and fire protection systems. Course content also covers weight and balance. Particular attention will be paid to the Federal Aviation Regulations that apply to all of the systems and concepts addressed in this class. Course content includes reliability and maintainability concepts related to the design of aircraft systems. Emphasis is placed on general aviation aircraft.

Course Goals and Student Learning Objectives

Upon completion of the course, students will be able to:

- Inspect an aircraft structure for structural integrity
- Be able to inspect an aircraft and associated systems for airworthiness
- Understand the design, operation and maintenance of aircraft auxiliary systems: landing gear & associated systems, fuel systems, wheels, tires & brakes, cabin environmental control & oxygen systems, ice and rain protection, and fire protection & instrumentation.
- Be knowledgeable with the regulations governing aircraft systems and understand how to operate an aircraft within those regulations

Required Texts/Readings

There is no required text for this course. All course materials are posted sequentially on the Canvas shell entitled [FA16: AVIA-42 Sec 01 - Aircraft Systems](#)

Other Readings

1. FAR/AIM Federal Aviation Regulations (2016 revision) (this publication is available at no cost online at the FAA website in pdf format)
2. Airframe & Powerplant Mechanics Airframe Handbook AC 65-15A. FAA (this publication is available at no cost online at the FAA website in pdf format)
3. Airframe & Powerplant Mechanics General Handbook AC 65-9A. FAA (this publication is also available at no cost online at the FAA website in pdf format)

Other equipment / material requirements

Students are required to wear safety glasses while performing many of the laboratory activities. Accordingly, students must come equipped with individual safety glasses that meet the ANSI Z87.1-2003 specification. These are available at the Spartan Bookstore and at local hardware stores.

Classroom Protocol

Students are expected to refrain from cell phone use and text messaging while in class and lab.

Dropping and Adding

Students are responsible for understanding the policies and procedures about add/drop, grade forgiveness, etc. Refer to the current semester's [Catalog Policies](http://info.sjsu.edu/static/catalog/policies.html) section at <http://info.sjsu.edu/static/catalog/policies.html>. Add/drop deadlines can be found on the [current academic calendar](http://www.sjsu.edu/academic_programs/calendars/academic_calendar/) web page located at http://www.sjsu.edu/academic_programs/calendars/academic_calendar/. The [Late Drop Policy](http://www.sjsu.edu/aars/policies/latedrops/policy/) is available at <http://www.sjsu.edu/aars/policies/latedrops/policy/>. Students should be aware of the current deadlines and penalties for dropping classes.

Information about the latest changes and news is available at the [Advising Hub](http://www.sjsu.edu/advising/) at <http://www.sjsu.edu/advising/>.

Assignments and Grading Policy

Quizzes will typically be announced at the lecture prior; however, the instructor reserves the right to give quizzes without being announced.

Laboratory assignments will be provided with detailed procedures and evaluation criteria. The due date for each lab will be on the associated lab assignment form. There are usually nine lab assignments with required lab reports assigned during the semester.

Evaluation

	<u>Points</u>	<u>Percentage</u>
Quizzes & Problem sets	50	10%
Lab/Research Assignments	200	36%
2 Midterms exams	200	36%
Final exam	100	18%
TOTAL	550	100%

The first two midterm exams will cover the first and second thirds of the semester respectively and the final exam will be comprehensive.

Average	Grade
93-100	A
90-93	A-
87-90	B+
83-87	B
80-83	B-

77-80	C+
73-77	C
70-73	C-
60-70	D
below 60	F

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/>

Key dates

9/6/16 – last day to drop courses without entry onto the student's permanent record.
9/13/16 – last day to add a course for the Fall 2016 term.
12/14/16 – Final exam for this class - Wednesday, December 14 at 5:15pm

Avia 42 / Aircraft Systems, Fall 2016, Course Schedule

AVIATION 42			
Lecture Schedule			
FALL-2016, Sec. #1 Wednesdays from 6pm - 7:45pm			
Text:	Airframe and Powerplant Mechanics - Airframe Handbook (FAA AC65-15a)		
	Airframe and Powerplant Mechanics - General Handbook (FAA AC65-9a)		
	FAA/FARs - Obtain online		
NOTE: Reading assignments and dates are subject to change due to topic coverage and activities.			
MTG	DATE	TOPICS	TEXT ASSIGNMENT
1	8/24	Introduction	Greensheet
		FARs (Lecture 1)	FARs part 1, 21,43,91
2	8/31	Weight and Balance	General Ch. 3
3	9/7	Adverse Loading Lecture	General Ch. 3
4	9/14	Corrosion	
5	9/21	Wheels, Tires, and Brakes (Lecture 5) Aircraft Logbooks, Midterm Review	Airframe Ch. 9
6	9/28	Midterm #1 Start Landing Gear	Airframe Ch. 9
7	10/5	Landing Gear - Rrequirements and Designs Hydraulic Systems Hydraulic Landing Gear Systems	Class notes Airframe Ch. 8 Airframe Ch. 9
8	10/12	Electro-mechanical landing gear systems Oxygen Systems Press. System	Airframe Ch. 9 Airframe Ch. 14 Airframe Ch. 14
9	10/19	Flight Control Systems	Airframe Ch. 2
10	10/26	Air Conditioning & Heaters Prep for Midterm 2	Airframe Ch. 14
11	11/9	*Midterm 2 Fuel Systems - part 1	
12	11/16	Review Midterm #2 Fuel Systems - part 2 Electrical Systems	General Ch. 4 & 5 General Ch. 8 & 9
13	11/23	Non-instructional day - no lecture	
14	11/30	Instrumentation Vacuum Systems Installed Equipment Fire Protection	Airframe Ch. 12 Airframe Ch. 10
15	12/7	Final Exam Review	
16	12/14	Final Exam	
FINAL EXAMINATION: Wednesday, December 14 at 5:15pm to 7:30pm			

