

**San José State University**  
**College of Engineering**  
**Department of Aviation and Technology**  
**Avia 068: Avionics/Airborne Communication**  
**Section 01 (lec) & 11 (lab) Fall 2017**

<b>Instructor:</b>	Daniel L. Neal
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<b>Office Hours:</b>	At RHV immediately before and after lab sessions and by appointment
<b>Class Days/Times:</b>	Section 1 (lecture) Mon/Wed 10:30am to 11:20am Section 12 (lab) Tuesday noon-2:45pm Section 13(lab) Wednesday 6pm to 8:45pm
<b>Classroom:</b>	Lectures are in IS-216 Labs are at RHV 120
<b>Prerequisites:</b>	Avia 42 (can be taken as a co-requisite)

**Messaging / Canvas**

Copies of the course materials such as the syllabus, major assignment handouts, etc. will be posted on SJSU’s Canvas system. All lecture presentations are posted to modules in Canvas after delivery in class.

You are responsible for regularly checking with the messaging system through MySJSU (or other communication system as indicated by the instructor).

## Course Description

Students will learn operational and analytical aspects of airborne communications systems. Topics covered will be applicable FARs, navigation/communication radios, glideslope receivers, localizers, marker beacons, ADF, DME, ELTs, ADS-B and the transition to a modern glass panel. Focus is on FAR requirements, and the industry approach to meeting those requirements.

## Course Goals and Student Learning Objectives

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

- Describe the required installed equipment for instrument flight
- Identify each of the avionics systems on an aircraft required
- Describe how each system works, and how it is used
- Analyze the use of the entire avionics system along with other instrumentation
- Perform an optimized panel layout for a general aviation aircraft
- Analyze costs and benefits of the various avionics systems

## Required Texts/Readings

Avionics Training: Systems, Installation and Troubleshooting By Len Buckwalter

## 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.

## Course Requirements and Assignments

**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.

## 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%
<b>TOTAL</b>	<b>550</b>	<b>100%</b>

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

## **Final Examination**

As noted in the grading /evaluation section above, there is a final examination in Avia 068. The final date and time is keyed to the lecture section. Accordingly, the final exam will be held in IS-216 on Friday December 15<sup>th</sup> at 9:45am – noon

## **Grading**

Course grades are determined by the total number of points earned on the assignments and exams noted in the Evaluation section above. Grades are curved from the top performing student score. Grades are determined using each student's percentage of the top performing student score. Grade cutoffs are noted in the table below. This course must be passed with a C- or better as a CSU graduation requirement.

<b>Average</b>	<b>Grade</b>
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

## **Classroom Protocol**

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

## **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/>

## **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/](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/>.

## **Key dates**

9/6/17 – last day to drop courses without entry onto the student's permanent record.

9/13/17 – last day to add a course for the Fall 2017 term.

## Avia 68 / Avionics/Airborne Communication, Fall 2017, Course Schedule

Meeting #	DATE	TOPICS	TEXT ASSIGNMENT
1	8/23	Introduction Principles of Avionics Principle of induction Aircraft electrical power systems	Ch. 1
2 & 3	8/28 & 8/30	Principles of Avionics Principle of induction Aircraft electrical power systems	
		Communication Radio Basics	Ch. 2
	9/4	Labor day holiday - no class	
4	9/6	Communications Radio Topics	Ch. 3
5 & 6	9/11 & 9/13	Batteries and Electrical Systems	
			Ch. 22
7 & 8	9/18 & 9/20	Power Generation + Component topics	
9	9/25	Midterm #1	
10	9/27	Navigation Systems	Ch. 9
11 & 12	10/2 & 10/4	Navigation Systems	
13 & 14	10/9 & 10/11	VOR, Glideslope, Localizer systems	Ch. 10
15 & 16	10/16 & 10/18	DME, RNAV, HSI Crew workload assessment	Ch. 13
17 & 18	10/23 & 10/25	Crew workload assessment Work on MT#2 Presentations	
19 & 20	10/30 & 11/1	Midterm #2 presentations	
21 & 22	11/6 & 11/8	GPS GPS Integration	Ch. 16
23 & 24	11/14 & 11/16	Start Automatic Dependent Surveillance - Broadcast (ADS-B)	
25	11/20	ADS-B	
	11/22	Non-instructional day	
26 & 27	11/27 & 11/29	Transponders ADS-B and GPS integration	Ch. 14
28 & 29	12/4 & 12/6	WAAS integration	
30	12/11	Last day of instruction Final exam review	
	12/15 (Friday)	Final Exam - 9:45am -noon	