

SAN JOSE STATE UNIVERSITY
College of Engineering
Department of Aviation & Technology
Aviation 128 – Aviation Safety and Security
Section 01 - Spring 2018

Instructor: Daniel L. Neal

Office Locations: RHV-125

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Office Hours: Tuesdays and Thursdays from Noon to 1pm
Wednesdays from 2pm to 3pm
Regular advising hours are available by appointment using Flash Appointments

Class Days/Time: Class (Section 1) Tues/Thurs 10:30 am to 11:45 am

Classroom: RHV 135

Prerequisites: Avia 2

COURSE OUTLINE

Course Description:

Safety in aviation design, operation, and maintenance; hazardous materials; airport environment issues; security regulations for aviation.

This course is to present an overview of many issues that influence and affect safety in aviation. Topics that will be discussed in this course include: aircraft safety in design, along with operations, and maintenance safety. The subject categories include airworthiness, crash-worthiness, reliability and maintainability quality control and assurance, individual work ethics and legal responsibilities. Aircraft accident reports will be used as examples, along studies of accidents and investigations.

Course Objectives:

1. Comprehend aviation safety and security regulatory framework, structure and regulatory process

2. Discuss structure, functions and workings of the National Transportation Safety Board
3. Understand the reporting and recording of safety data including accident reports
4. Understand how to review an accident summary and analyze a sequence of events and consider causal factors
5. Review safety statistics and accident causation models
6. Understand Aeronautical Decision Making (ADM)
7. Understand cognitive workload measurement as a function of human factors in aviation.
8. Understand the Human Factors Analysis and Classification System (HFACS)
9. Discuss specific safety issues such as runway incursions, terminal, hangars, shops, ramp, fuel, rescue and deicing.
10. Understand mechanical/electronics parts reliability and their impact on a safe system design
11. Understand important post 911 aviation security measures.
12. Discuss airline carrier prevention and control safety programs.
13. Become familiar with location of aviation data references and their usefulness.

Canvas:

Course materials such as this syllabus, major assignment handouts and lecture notes are available on the Canvas site for the Avia 128 course. Registered students will be added to the Avia 128 Canvas shell.

Required Text:

Lowrey, A Pilot’s Accident Review

Other Reading:

FAR/AIM Federal Aviation Regulations (2018 revision) – this publication is available at no cost online at the FAA website here: <http://www.ecfr.gov/> (use this truncated link and select Title 14 of the CFR for the Federal Aviation Regulations)

Pilot’s Handbook of Aeronautical Knowledge (FAA) – This publication is also downloadable from the FAA website.

Evaluation Criteria & Weights:

Mid-Term Exams #1	20%
Mid-Term Exam #2 (oral presentation of research)	15%
Final Comprehensive Exam	30%
Homework and quizzes	35%
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Total	100%

A = 100% to 90%

B = 89% to 80%
C = 79% to 70%
D = 69% to 60%
F = < 59%

Classroom and Protocol:

Do not use cell phones during class. It is acceptable to use your tablet or laptop during class to take notes or look up information pertinent to the lecture. It is not acceptable to watch unrelated videos or participate in online gaming during class. Students are expected to attend class regularly, arrive on time and be prepared to participate.

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 section at <http://info.sjsu.edu/static/catalog/policies.html>. Add/drop deadlines are as follows: February 5th – last day to drop without a “W” grade for Spring 2018. The Late Drop 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 at <http://www.sjsu.edu/advising/>.

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 at <http://www.sjsu.edu/gup/syllabusinfo/>

Consent for Recording of Class and Public Sharing of Instructor Material

University Policy S12-7, requires students to obtain instructor's permission to record the course.

Common courtesy and professional behavior dictate that you notify someone when you are recording him/her. You must obtain the instructor's permission to make audio or video recordings in this class. Such permission allows the recordings to be used for your private, study purposes only. The recordings are the intellectual property of the instructor; you have not been given any rights to reproduce or distribute the material.

- Permission to record course content is to be granted on a class-by-class basis.

- Should there be a guest speaker, permission to record content shall be requested from the guests as well.
- Course material developed by the instructor is the intellectual property of the instructor and cannot be shared publicly without his/her approval. You may not publicly share or upload instructor generated material for this course such as exam questions, lecture notes, or homework solutions without instructor consent.

Key dates

2/5/18 – last day to drop courses without entry onto the student’s permanent record.

2/12/18– last day to add a course for the Spring 2018 term.

5/22/18 – Final Exam for Avia 128 - Tuesday, May 22 at 0945-1200

Tentative Lecture/Reading Schedule:

Week #	Meeting #	Lecture Topic(s)	Reading Assignment
1	1	Introduction, Syllabus review, Text assignment and intro to the RHV facilities	
2	3	Intro to accident analysis	
	4	Intro to cognitive workload measurement, FAA structure	Chapter 1
3	5	Intro to ADM, FAA Origins, intro to hazard assessment, CFR Title 14	
	6	Multiple Resource Theory (MRT)	Chapter 2
4	7	NTSB, ICAO, Regulatory Framework, MRT measurements	
	8	Out of class assignment	
5	9	NTSB - accident process and reporting	Chapter 3
	10	ICAO, OSHA, EPA	
6	11	Safety Statistics	Chapter 4
	12	Accident causation models (intro) Review for Midterm #1	
7	13	Midterm #1	
	14	Accident causation models (finish)	Chapter 5
8	15	Human Factors in Aviation Safety	
	16	Human Factors in Aviation Safety	
9	17	Aeronautical Decision Making (ADM)	Chapter 9
	18	Aeronautical Decision Making (ADM)	
10		Spring Break 3/26-3/30	
11	19	Aviation maintenance topics, Research Project Assignments	Chapter 6
	20	Aviation maintenance topics	
12	21	Air traffic safety systems Review for Midterm #2	Chapter 7
	22	Midterm #2	
13	23	Airport Safety	Chapter 8
	24	Research Project Presentations	
14	25	Research Project Presentations	
	26	Research Project Presentations	
15	27	Safety Management Systems (SMS)	Chapter 12
	28	Safety Management Systems (SMS)	
16	29	Airline Safety + SMS	
	30	Aviation security Final Exam Review Last Spring 2017 Avia 128 class meeting	
Last day of instruction - May 14, 2018			