

SAN JOSE STATE UNIVERSITY
College of Engineering
Department of Aviation & Technology
Aviation 128 – Aviation Safety and Security
Section 01 - Spring 2017

Instructor: Daniel L. Neal

Office Locations: IS-106

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Office Hours: Mon/Wed 9:30 am to 10:30 am
Also – immediately following classes

Class Days/Time: Class (Section 1) Mon/Wed 10:30 am to 11:45 am

Classroom: IS 216

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 (2016 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 9th – last day to drop without a “W” grade for Spring 2017. 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

2/7/17 – last day to drop courses without entry onto the student’s permanent record.

2/14/17– last day to add a course for the Spring 2017 term.

5/24/17 - Final exam for this class - Wednesday, May 24 at 7:15 am

Tentative Lecture/Reading Schedule:

Week #	Meeting #	Instr. Day	Date	Lecture Topic(s)	Reading Assignment
1	1	Mon	30-Jan	Intro to accident analysis	
	2	Wed	1-Feb	Intro to cognitive workload measurement, FAA structure	Chapter 1
2	3	Mon	6-Feb	Intro to ADM, FAA Origins, intro to hazard assessment, CFR Title 14	
	4	Wed	8-Feb	Multiple Resource Theory (MRT)	Chapter 2
3	5	Mon	13-Feb	NTSB, ICAO, Regulatory Framework, MRT measurements	
	6	Wed	15-Feb	Out of class assignment	
4	7	Mon	20-Feb	NTSB - accident process and reporting	Chapter 3
	8	Wed	22-Feb	ICAO, OSHA, EPA	
5	9	Mon	27-Feb	Safety Statistics	Chapter 4
	10	Wed	1-Mar	Accident causation models (intro) Review for Midterm #1	
6	11	Mon	6-Mar	Midterm #1	
	12	Wed	8-Mar	Accident causation models (finish)	Chapter 5
7	13	Mon	13-Mar	Human Factors in Aviation Safety	
	14	Wed	15-Mar	Human Factors in Aviation Safety	
8	15	Mon	20-Mar	Aeronautical Decision Making (ADM)	Chapter 9
	16	Wed	22-Mar	Aeronautical Decision Making (ADM)	
9				Spring Break 3/27-3/31	
				Spring Break 3/27-3/31	
10	17	Mon	3-Apr	Aviation maintenance topics, Research Project Assignments	Chapter 6
	18	Wed	5-Apr	Aviation maintenance topics	
11	19	Mon	10-Apr	Air traffic safety systems Review for Midterm #2	Chapter 7
	20	Wed	12-Apr	Midterm #2	
12	21	Mon	17-Apr	Airport Safety	Chapter 8
	22	Wed	19-Apr	Research Project Presentations	
13	23	Mon	24-Apr	Research Project Presentations	
	24	Wed	26-Apr	Research Project Presentations	
14	25	Mon	1-May	Safety Management Systems (SMS)	Chapter 12
	26	Wed	3-May	Safety Management Systems (SMS)	
15	27	Mon	8-May	Airline Safety + SMS	
	28	Wed	10-May	Aviation security	
			15-May	Final Exam Review Last Spring 2017 Avia 128 class meeting	
Last day of instruction - May 16, 2017					
Final Exam: Wednesday, May 24 - 0715-0930					