

Syllabus

ASEN 3046 Introduction to Humans in Aviation

Fri 17:00-19:50

This course investigates manned aviation and how it has impacted our lives.

We begin by reviewing the history of manned aviation in 1783 with the Montgolfier's and proceed through the major historic events that have advanced aircraft developments. We consider how each new historic milestone in aircraft development has impacted society and our acceptance of manned flight.

Students will gain an understanding of just how rapidly aviation has developed over the last century and how challenging it has been to adapt our psychological and physiological limitations to such dangerous environment. We will do this by looking at aviation accidents from the position of human error.

We then explore the socio-economic impacts of recent aviation related events such as the post 9-11 air travel fallout, the Katrina recovery and rescue efforts and the Icelandic Volcano. We will also discuss the future of aviation and how it will affect our lives.

Instructor: Hank Scott, Lecturer/Instructor

Email: hank.scott@colorado.edu

Prerequisites: *none*, open to all majors at any level

Textbooks:

1. Flight the Complete History By R.G. Grant, DK Publishing (2007). ISBN-10: 0756619025

OR Flight: 100 Years of Aviation By R.G Grant DK Publishing (2007) ISBN-10: 0756653460

(Pretty much the same book)

2. Handbook of Aviation Human Factors, 2nd Edition (Human Factors in Transportation)

Wise, Hopkins and Garland (*hardcover 2009*).

Digital Copy is fine for this book...CU library has digital copies:

<http://dx.doi.org.colorado.idm.oclc.org/10.1201/b10401>

Please note that you may bring laptops, E-readers, tablets or smartphones to the 2 exams to read the electronic versions of the text books.

Grading Breakdown:

- Section 1 Exam 20%
- Mid-Term Paper (2000 words) 30%, (papers will be submitted in Canvas)
- Section 2 Exam 15%
- Group Presentation 30%
- Attendance 5%

Course Website: on Canvas

Required Readings:

- Textbooks listed above for Sections 1 and 2.
- Various articles provided in class and available on the course website will be utilized during Sections 2 and 3.

Lecture Topics:

1. History of Manned Flight

The Invention of Aviation

Early successes and failures

Wright Brothers

The Early Novelty of Aviation, and WWI

The Golden Age: Aviation finds a purpose: mail, combat and commercial transportation.

WWII

Post-war R&D, the Cold War, Airlines and the Jet Age

The Private Aviation phenomenon

Historical review of civilian acceptance of Aviation

2. Flight Safety and Human Error

Human Factors in Complex Systems

Organizational Behavior (and the Reason Model)

The Role of Culture – Power-Distance Culture

The Role of Human Performance Limitations

Group Behavior and Social Interaction in Complex Systems

Crew Resource Management (Stress, Situational Awareness, Information Processing)

Social Impacts of Aviation Accidents

Accident Investigation, recommendations and the Ethics vs. Economics debate

The Role of Training – Learning Theory in Aviation Safety

3. Socio-Economic Impacts of Aviation

Regulation and the role government regulation – does it hinder or hamper growth?

Life without aviation, assess the Post 9-11 aviation freeze, Icelandic volcanic disruptions

Impact of aviation of the environment and the climate

Aviation in Developing Nations

Aviation's role in Humanitarian Aid/ Emergency Relief (case study of Haiti Earthquake, Katrina and the Asian Tsunami)

Future issues in Aviation (congested airspace, NEXGEN, green propulsion)

Attendance:

If the course is over subscribed the waitlist will be filled by the removal of any students who do not attend the first 2 days of class.

Aerospace Engineering Sciences & University Policies

Classroom Behavior

Both students and faculty are responsible for maintaining an appropriate learning environment in all instructional settings, whether in person, remote or online. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation or political philosophy. For more information, see the [classroom behavior](#) policy, the [Student Code of Conduct](#), and the [Office of Institutional Equity and Compliance](#).

Requirements for COVID-19

As a matter of public health and safety, all members of the CU Boulder community and all visitors to campus must follow university, department and building requirements and all public health orders in place to reduce the risk of spreading infectious disease. CU Boulder currently requires COVID-19 vaccination and boosters for all faculty, staff and students. Students, faculty and staff must upload proof of vaccination and boosters or file for an exemption based on medical, ethical or moral grounds through the MyCUHealth portal.

The CU Boulder campus is currently mask-optional. However, if public health conditions change and masks are again required in classrooms, students who fail to adhere to masking requirements will be asked to leave class, and students who do not leave class when asked or who refuse to comply with these requirements will be referred to Student Conduct and Conflict Resolution. For more information, see the policy on classroom behavior and the Student Code of Conduct. If you require accommodation because a disability prevents you from fulfilling these safety measures, please follow the steps in the “Accommodation for Disabilities” statement on this syllabus.

If you feel ill and think you might have COVID-19, if you have tested positive for COVID-19, or if you are unvaccinated or partially vaccinated and have been in close contact with someone who has COVID-19, you should stay home and follow the further guidance of the Public Health Office (contacttracing@colorado.edu). If you are fully vaccinated and have been in close contact with someone who has COVID-19, you do not need to stay home; rather, you should self-monitor for symptoms and follow the further guidance of the Public Health Office (contacttracing@colorado.edu). {Faculty: insert your procedure here for students to alert you about absence due to illness or quarantine. Because of FERPA student privacy laws, do not require students to state the nature of their illness when alerting you. Do not require "doctor's notes" for classes missed due to illness; campus health services no longer provide "doctor's notes" or appointment verifications.}

Accommodation for Disabilities

If you qualify for accommodations because of a disability, please submit your accommodation letter from Disability Services to your faculty member in a timely manner so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities

in the academic environment. Information on requesting accommodations is located on the [Disability Services website](#). Contact Disability Services at 303-492-8671 or dsinfo@colorado.edu for further assistance. If you have a temporary medical condition, see [Temporary Medical Conditions](#) on the Disability Services website.

Preferred Student Names and Pronouns

CU Boulder recognizes that students' legal information doesn't always align with how they identify. Students may update their preferred names and pronouns via the student portal; those preferred names and pronouns are listed on instructors' class rosters. In the absence of such updates, the name that appears on the class roster is the student's legal name.

Honor Code

All students enrolled in a University of Colorado Boulder course are responsible for knowing and adhering to the [Honor Code](#). Violations of the Honor Code may include, but are not limited to: plagiarism, cheating, fabrication, lying, bribery, threat, unauthorized access to academic materials, clicker fraud, submitting the same or similar work in more than one course without permission from all course instructors involved, and aiding academic dishonesty. All incidents of academic misconduct will be reported to Student Conduct & Conflict Resolution (honor@colorado.edu); 303-492-5550). Students found responsible for violating the [Honor Code](#) will be assigned resolution outcomes from the Student Conduct & Conflict Resolution as well as be subject to academic sanctions from the faculty member. Additional information regarding the Honor Code academic integrity policy can be found on the [Honor Code website](#).

Sexual Misconduct, Discrimination, Harassment and/or Related Retaliation

CU Boulder is committed to fostering an inclusive and welcoming learning, working, and living environment. University policy prohibits sexual misconduct (harassment, exploitation, and assault), intimate partner violence (dating or domestic violence), stalking, protected-class discrimination and harassment, and related retaliation by or against members of our community on- and off-campus. These behaviors harm individuals and our community. The Office of Institutional Equity and Compliance (OIEC) addresses these policies, and individuals who believe they have been subjected to misconduct can contact OIEC at 303-492-2127 or email cureport@colorado.edu. Information about university policies, [reporting options](#), and support resources can be found on the [OIEC website](#).

Please know that faculty and graduate instructors have a responsibility to inform OIEC when they are made aware of any issues related to these policies regardless of when or where they occurred to ensure that individuals impacted receive information about their rights, support resources, and resolution options. To learn more about reporting and support options for a variety of concerns, visit [Don't Ignore It](#).

Religious Holidays

Campus policy regarding religious observances requires that faculty make every effort to deal reasonably and fairly with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. In this class, Hank Scott. See the [campus policy regarding religious observances](#) for full details.

