

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 D2L Dropbox)
- Section 2 Exam 20%
- Group Presentation 30%

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 policies on [classroom behavior](#) and the [Student Code of Conduct](#).

Requirements for COVID-19

As a matter of public health and safety due to the pandemic, all members of the CU Boulder community and all visitors to campus must follow university, department and building requirements, and public health orders in place to reduce the risk of spreading infectious disease. Required safety measures at CU Boulder relevant to the classroom setting include:

- maintain 6-foot distancing when possible,
- wear a face covering in public indoor spaces and outdoors while on campus consistent with state and county health orders,
- clean local work area,
- practice hand hygiene,
- follow public health orders, and
- if sick and you live off campus, do not come onto campus (unless instructed by a CU Healthcare professional), or if you live on-campus, please alert [CU Boulder Medical Services](#).

Students who fail to adhere to these 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 policies on [COVID-19 Health and Safety](#) and [classroom behavior](#) and the [Student Code of Conduct](#). If you require accommodation because a disability prevents you from fulfilling these safety measures, please see the “Accommodation for Disabilities” statement on this syllabus.

Before returning to campus, all students must complete the [COVID-19 Student Health and Expectations Course](#). Before coming on to campus each day, all students are required to complete a [Daily Health Form](#).

Students who have tested positive for COVID-19, have symptoms of COVID-19, or have had close contact with someone who has tested positive for or had symptoms of COVID-19 must stay home and complete the [Health Questionnaire and Illness Reporting Form](#) remotely. In this class, if you are sick or quarantined please advise me via email so remote learning options and alternate assessment can be arranged.

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 policy may include: 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 the Honor Code (honor@colorado.edu); 303-492-5550). Students found responsible for violating the academic integrity policy will be subject to nonacademic sanctions from the Honor Code as well as academic sanctions from the faculty member. Additional information regarding the Honor Code academic integrity policy can be found at the [Honor Code Office website](#).

Sexual Misconduct, Discrimination, Harassment and/or Related Retaliation

The University of Colorado Boulder (CU Boulder) is committed to fostering an inclusive and welcoming learning, working, and living environment. CU Boulder will not tolerate acts of sexual misconduct (harassment, exploitation, and assault), intimate partner violence (dating or domestic violence), stalking, or protected-class discrimination or harassment by members of our community. Individuals who believe they have been subject to misconduct or retaliatory actions for reporting a concern should contact the Office of Institutional Equity and Compliance (OIEC) at 303-492-2127 or cureport@colorado.edu. Information about the OIEC, university policies, [anonymous reporting](#), and the campus resources can be found on the [OIEC website](#).

Please know that faculty and instructors have a responsibility to inform OIEC when made aware of incidents of sexual misconduct, dating and domestic violence, stalking, discrimination, harassment and/or related retaliation, to ensure that individuals impacted receive information about options for reporting and support resources.

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, simply advise me by email of any conflicts or issues and we will work to provide alternate accommodations.