

ASEN 2012: Experimental and Computational Methods in Aerospace Engineering Sciences

University of Colorado **Boulder**

Spring Semester 2024, Last edited on: January 9, 2024

Syllabus

Time: Section 001: MW 11:45 AM - 12:35 PM

Classroom: AERO 114

Instructor: Professor Jeff Glusman (he/him)
Office Location: AERO N205
Email: Jeff.Glusman@colorado.edu

Teaching Facilitator: Ivy Hill (she/her)
Email: Ivy.Hill@colorado.edu

Description: This course provides an introduction to statistical, experimental and computational methods used in aerospace engineering sciences.

Learning Goals: A student who successfully completes this course will:

1. Have an understanding of professional context and expectations (ethics, economics, etc.),

Supplemental References: Pratap, Rudra: "Getting Started with MATLAB: A Quick Introduction for Scientists and Engineers", 2010, Oxford University Press, ISBN-13: 978-0199731244

Merrin, Jack: "Introduction to Error Analysis: The Science of Measurements, Uncertainties, and Data Analysis", 2017, CreateSpace Independent Publishing Platform, ISBN-13: 978-1975906658

Matlab On-Ramp and Fundamental courses (<https://matlabacademy.mathworks.com/>)

Class Format: The class meets in-person twice a week for fifty minutes of active classroom instruction. Note that the activities vary day by day with some class periods focused on formal lecture or project introductions, while others may be focused on carrying out coding challenges, carrying out simulations or writing laboratory reports and completing other deliverables. Note the specific calendar weeks are identified below in the "Schedule of Lab Activities".

Class Deliverables: All of the projects will be carried out in small groups, assigned by the instructional team, which will be sized appropriately to match the amount of work expected.

To complete these assignments, students must have access to a computer, basic programming skills, and familiarity with some programming languages and/or environments similar to what is covered in introductory computing courses. The minimum requirement is some exposure to MATLAB. If you are not familiar with MATLAB, it is your responsibility to become more acquainted. In addition to turning in a report or video presentation for each project, students will be required to submit their post-processing or analysis code. When requested your code should be submitted in a single zip file, including a "driver" or "main" MATLAB script producing all requested figures. Code for group projects may be written as a group, but each individual within the group is responsible for understanding exactly how all of the code works. Reports and code should be submitted to the appropriate Canvas assignments by the due date, no late assignments will be accepted. It is your responsibility for confirming the intended files were uploaded and run properly.

Further guidelines for each activity will be addressed in the respective assignment documents.

Honor Code Policy: You are responsible for all work submitted in this course. This means that you should be able to quickly and effectively communicate the meaning of every line of code or text in your submission. It is permissible to discuss coding strategies with classmates, however, it would be highly inappropriate for code structures to be alike. All reports and code will be ran through a similarity checker. Copying material from any resource (including code from another student or online) and submitting it as one's own is considered plagiarism and is an Honor Code violation. Students who are found in violation once will receive a zero grade for the assignment and will be reported for an "Honor Code Violation" for additional non-academic actions. Students who are found in violation after the previous issue will receive an "F" for the class and will be reported for an "Honor Code Violation" for additional non-academic actions.

Attendance Policy: Attendance is expected at all scheduled class periods, and students should expect new material to be presented. None of the lectures will be recorded or posted for asynchronous consumption. Thus students who miss important information during class periods should coordinate with their peers and catch-up independently on the material they may have missed.

Course Website and Course Communications: There will be a class website on Canvas. All relevant documents, assignments, schedules, and supplemental documents will be posted to this site throughout the semester. Please check back to see what has been posted. All course announcements outside of the class periods will be sent as Canvas announcements, so it is the student's responsibility to make sure their Canvas settings are appropriately configured to receive these announcements.

Students should e-mail the course instructors and teaching assistants/facilitators if they have a pressing logistical or health issue. Always include ASEN2012 in the subject line, in addition to a complete subject line. The teaching team will aim to respond to e-mails within one

Schedule of Activities: The following presents a nominal schedule for the semester:



The final grade indicates your readiness to continue to the next level of courses. Meeting the

Classroom Behavior: Students and faculty are responsible for maintaining an appropriate learning environment in all instructional settings, whether in person, remote, or online. Failure 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

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 (including use of paper writing services or technology [such as essay bots]), 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](#)